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Hierarchy of Controls

Engineering Controls



Controls that are *engineered* into the job. Preferred method of control.

- Redesign of equipment
- Substitution of a material, equipment, or process
- Change of a process to minimize the hazard
- Use of barriers or shields to isolate a hazard
- Use of barriers to isolate a person
- Ventilation

Administrative Controls



Controls that change the way people do their jobs. They are only effective when people do what they are supposed to do. Second most preferred method of control.

- Training, education and enforcement
- Procedures to limit exposure
- Increasing distance between source and receiver
- Adjusting work schedules and rotating assignments to reduce exposure
- Maintenance
- Good housekeeping
- Wet-work methods

Personal Protective Equipment



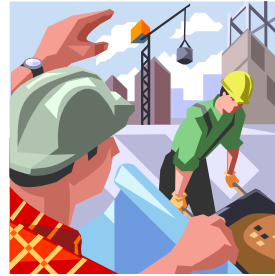
Controls that protect people from the hazard rather than eliminate it. Control method of last resort.

- Protective clothing
- Eye and face protection
- Respiratory protection
- Hearing protection
- Headwear
- Footwear
- Fall protection
- Protection against electrical hazards

The Worksite Analysis

A worksite analysis is a review of your work area. You should do one every day before you begin your work. It can help you find and correct possible safety problems. Here is how to do a worksite analysis.

1. Identify the space where you will be working.



2. Look for hazards that might cause injuries.



3. Use a checklist to help you identify hazards.



4. Discuss problems and corrections with your supervisor.

The Competent Person For Scaffolds

The OSHA standard requires that a competent person oversee the erection, disassembling, moving, operation, repair and maintenance of a scaffold. Here are the qualifications and duties of this person.

Qualifications of the competent person

- Knowledge of the OSHA standard relating to scaffolds
- Training regarding the structural integrity of scaffolds
- Training on scaffold maintenance
- Ability to detect and evaluate conditions that could cause a scaffold to become structurally unstable
- Authority to act on site to eliminate hazards and to stop work when required

Duties of the competent person

- Inspect the scaffold and its components before each work shift
- Train employees who work on the scaffold to use it properly and to recognize the hazards associated with using it
- Ensure that employees using the scaffold recognize the maximum load capacity
- Ensure that the load being supported by the scaffold is within the maximum load capacity
- Ensure that the scaffold is plumb, square and level
- Ensure that the scaffold is on base plates and that the mudsills are level, sound and rigid
- Ensure that the scaffold has safe access
- Ensure that the platforms are fully planked and that the planks are in good condition and free of visible defects
- Ensure that the scaffold has all required guardrails and toeboards
- Oversee the work on the scaffold
- Take prompt corrective measures when there is a hazard or a dangerous situation

Checklist for the Worksite Analysis—Falls

Every day, when you begin work at your construction site, you should check for hazards that could cause a fall. Following is a list you can use when you do this check.

ITEM	OK?	CORRECTIVE ACTIONS
General Work Area		
• Are there unguarded floor holes?	_____	_____
• Do floor hole covers weigh two times the weight that will be placed on them?	_____	_____
• Is there an unguarded vertical drop of six feet or more?	_____	_____
• Are employees wearing slip-resistant shoes?	_____	_____
Guardrails		
• Tall enough (top edge height between 39 and 45 inches)?	_____	_____
• Midrails, screens or mesh in use between guardrail and working surface?	_____	_____
• Screens and mesh cover everything from the top rail down to the working surface?	_____	_____
• Intermediate members between posts no more than 19 inches apart?	_____	_____
• Guardrail capable of withstanding at least 200 pounds of force from any direction?	_____	_____
• Midrails capable of withstanding 150 pounds of force from any direction?	_____	_____
• Guardrail free of rough edges or jagged surfaces?	_____	_____

Checklist for the Worksite Analysis—Falls

ITEM	OK?	CORRECTIVE ACTIONS
Ladders		
<ul style="list-style-type: none"> ● Ladders in good condition with no broken parts? 	_____	_____
— Rungs?	_____	_____
— Steps?	_____	_____
— Side rails?	_____	_____
— Feet?	_____	_____
— Locking components?	_____	_____
● Portable ladder side rails extend at least three feet from top of landing?	_____	_____
● Side rails secured to at the top to a rigid support?	_____	_____
● Weight to be used on ladder within specifications?	_____	_____
● Portable ladders have a solid support such as a wall?	_____	_____
● Distance from foot of portable ladder to the base of the support structure at about ¼ of the length of the ladder?	_____	_____
● Ladder rungs or steps uniformly spaced at between 10 to 14 inches apart?	_____	_____
● Rungs shaped so that an employee's foot cannot slide off?	_____	_____
● Rungs skid resistant?	_____	_____
● Ladder free of oil, grease, wet paint, and other slipping hazards?	_____	_____
● Wood ladders free of opaque covering?	_____	_____

Checklist for the Worksite Analysis—Falls

ITEM	OK?	CORRECTIVE ACTIONS
Ladders—continued		
<ul style="list-style-type: none"> ● Foldout or stepladders have a metal spreader or locking device to hold the front and back sections in an open position when in use? 	_____	_____
<ul style="list-style-type: none"> ● Do you avoid using two or more ladders to reach a high work area offset with a landing or platform? 	_____	_____
<ul style="list-style-type: none"> ● Do you avoid tying or fastening ladders together to provide longer sections? 	_____	_____
<ul style="list-style-type: none"> ● Is area around top and bottom of the ladder kept clear? 	_____	_____
Scaffolds		
<ul style="list-style-type: none"> ● Is the scaffold constructed by a qualified person or organization? 	_____	_____
<ul style="list-style-type: none"> ● Is the scaffold undamaged and in good condition? 	_____	_____
<ul style="list-style-type: none"> ● Are there guardrails on the scaffold? 	_____	_____
<ul style="list-style-type: none"> ● Can scaffold support its own weight plus four times the weight of the maximum load? 	_____	_____
<ul style="list-style-type: none"> ● Is the scaffold platform fully planked with no open spaces? 	_____	_____
<ul style="list-style-type: none"> ● Do you avoid having the scaffold platform extend excessively over its support? 	_____	_____
<ul style="list-style-type: none"> ● Are scaffold footings level, rigid and capable of supporting the loading scaffold? 	_____	_____

Checklist for the Worksite Analysis—Falls

ITEM	OK?	CORRECTIVE ACTIONS
Scaffolds—continued		
<ul style="list-style-type: none"> • Is the scaffold supported only by stable objects? 	_____	_____
<ul style="list-style-type: none"> • Do you avoid using front-end loaders, fork lifts or other equipment as supports for the scaffold? 	_____	_____
<ul style="list-style-type: none"> • On a suspension scaffold, are outside wires free of corrosion, scrubbing, flattening or preening? 	_____	_____
<ul style="list-style-type: none"> • On a suspension scaffold, are wires free of damage caused by a torch or contact with electrical wires? 	_____	_____
<ul style="list-style-type: none"> • Is scaffold accessed by ladders or stairs, not by the crossbraces? 	_____	_____
<ul style="list-style-type: none"> • Are scaffold ladders and stairs slip resistant? 	_____	_____
<ul style="list-style-type: none"> • Is there adequate clearance between the scaffold and power lines? 	_____	_____
<ul style="list-style-type: none"> • Is the scaffold free of snow and ice? 	_____	_____
<ul style="list-style-type: none"> • Do you avoid makeshift devices, such as boxes or barrels, on a scaffold to extend working height? 	_____	_____
<ul style="list-style-type: none"> • Do you avoid using ladders on a scaffold? 	_____	_____
<ul style="list-style-type: none"> • Do employees wear hard hats when on and below the scaffolding? 	_____	_____
<ul style="list-style-type: none"> • Does the scaffold have toe boards to prevent tools and other loose equipment from falling? 	_____	_____
<ul style="list-style-type: none"> • Does the scaffold have a canopy or net below it to catch falling objects? 	_____	_____

Checklist for the Worksite Analysis—Falls

ITEM	OK?	CORRECTIVE ACTIONS
Fall Arrest Systems		
<ul style="list-style-type: none"> • Are personal fall arrest systems certified to perform correctly? 	_____	_____
<ul style="list-style-type: none"> • Are personal fall arrest systems free of wear, damage and deterioration? 	_____	_____
<ul style="list-style-type: none"> • Are safety nets installed as close as possible under the surface on which employees are working? 	_____	_____
<ul style="list-style-type: none"> • Do safety nets have enough clearance to prevent contact with the surface structure underneath? 	_____	_____
<ul style="list-style-type: none"> • Do you drop-test your safety net every time you install it, or is the net certified by a competent person every time you install it? 	_____	_____
<ul style="list-style-type: none"> • Do you inspect your safety net for wear, damage and deterioration at least once a week? 	_____	_____
<ul style="list-style-type: none"> • Do you avoid using defective nets? 	_____	_____
<ul style="list-style-type: none"> • Do you remove objects and debris from nets frequently? 	_____	_____

OSHA Resources for this checklist are:

- 29 CFR 1926 Subpart E
- 29 CFR 1926 Subpart L
- 29 CFR 1926 Subpart M
- 29 CFR 1926 Subpart X

Clearances for Operating Equipment Around High Wires

MINIMUM CLEARANCES WHILE WORKING	
Line Voltage	Distance
50kV or below	10 feet
50kV and higher	10 feet + .4 inches for each 1kV above 50kV

MINIMUM CLEARANCES WHILE IN TRANSIT	
Line Voltage	Distance
50kV or below	4 feet minimum
50kV to 345kV	10 feet
Over 345kV to 750kV	16 feet

Procedures To Follow If Contact Occurs

Contact between a crane and an energized line does not automatically lead to an electrical incident. To protect against electrical shock, the following procedures are recommended:

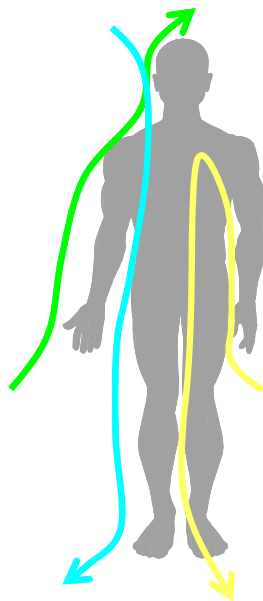
- The crane operator should remain inside the cab until the lines have been de-energized.
- All other personnel should keep away from the crane, ropes, and load, since the ground around the machine might be energized.
- The crane operator should try to remove the crane from contact by reversing direction.

This information can be found at OSHA's e-tool website:

http://osha.gov/SLTC/etools/construction/electrical_incidents/cranes.html

Estimated Effects of AC Currents

U.S. Standard 60 Hz	
1 milliamp (mA)	Barely perceptible
16 mA	Maximum current an average person can grasp and “let go”
20-30 mA	Paralysis of respiratory muscles
100 mA	Ventricular fibrillation threshold
2 Amps	Cardiac standstill and internal organ damage
15/20/30 Amps	Common U.S. household breakers



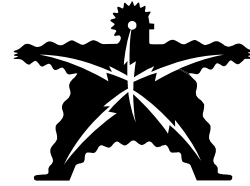
PATH

Harm is related to the path by which current passes through the body.

Chart and diagram courtesy of Associated General Contractors of America

Emergency Response to Electric Shock

1. **DO NOT** touch the person in contact with the electric source. You could also be shocked.



9-1-1

2. Shout out for someone to call 9-1-1.

3. Switch off current or master switch.



4. If you can't turn off electric source, use a non-conductive item (insulated wire fashioned as a lasso, wooden handle with a hook, wooden chair) to remove the person from the electricity source.

5. Check airway, breathing and circulation (ABC). Give CPR if necessary.



5. Keep victim lying down and warm until emergency help arrives.

Checklist for the Worksite Analysis—Electricity

Every day, when you begin work at your construction site, you should check for hazards that could cause an electrocution. Following is a list you can use when you do this check.

ITEM	OK?	CORRECTIVE ACTIONS
General Electrical Safety		
<ul style="list-style-type: none"> Do you assume power sources are energized unless you know for certain they are not? 	_____	_____
<ul style="list-style-type: none"> Do you use equipment only for its designed purpose? 	_____	_____
<ul style="list-style-type: none"> Do you avoid making extension cords with ROMEX[®] wire? 	_____	_____
<ul style="list-style-type: none"> Do you avoid using equipment outdoors that is labeled for use indoors? 	_____	_____
<ul style="list-style-type: none"> Do you avoid attaching ungrounded, two-prong adapter plugs into three-prong cords or tools? 	_____	_____
<ul style="list-style-type: none"> Do you avoid using circuit breakers or fuses with the wrong rating (example: using a 30-amp breaker in a system with a 15- or 20- amp outlet)? 	_____	_____
<ul style="list-style-type: none"> Do you have an emergency response plan for electrical injuries? 	_____	_____
<ul style="list-style-type: none"> Do you practice your emergency response plan for electrical injuries? 	_____	_____

Checklist for the Worksite Analysis—Electricity

ITEM	OK?	CORRECTIVE ACTIONS
Power Tool Safety		
<ul style="list-style-type: none"> Do you avoid carrying power tools by their cords? 	_____	_____
<ul style="list-style-type: none"> Do you avoid yanking cords to disconnect them from outlets? 	_____	_____
<ul style="list-style-type: none"> Do you keep cords away from heat, oil and sharp edges? 	_____	_____
<ul style="list-style-type: none"> Do you keep cords away from cutting surfaces of power saws or drills? 	_____	_____
<ul style="list-style-type: none"> Do you disconnect tools when not in use? 	_____	_____
<ul style="list-style-type: none"> Do you disconnect tools before servicing or when changing blades or bits? 	_____	_____
<ul style="list-style-type: none"> Do you avoid holding your finger on the “ON” switch when carrying a plugged-in tool? 	_____	_____
<ul style="list-style-type: none"> Do you use gloves and safety footwear when using electrical tools? 	_____	_____
<ul style="list-style-type: none"> Do you avoid using tools in damp or wet locations unless tools are specifically approved for such use? 	_____	_____
<ul style="list-style-type: none"> Do you operate tools in a well-lit area? 	_____	_____
<ul style="list-style-type: none"> Do you tag damaged tools with “Do Not Use”? 	_____	_____

Checklist for the Worksite Analysis—Electricity

ITEM	OK?	CORRECTIVE ACTIONS
Extension and Flexible Cord Safety		
<ul style="list-style-type: none"> ● Do you use factory assembled cord sets? 	_____	_____
<ul style="list-style-type: none"> ● Do you use only extension cords that are three-wire type? 	_____	_____
<ul style="list-style-type: none"> ● Do you use only extension cords that are marked with a designation code for hard or extra-hard usage? 	_____	_____
<ul style="list-style-type: none"> ● Do you avoid yanking cords to disconnect them from outlets? 	_____	_____
<ul style="list-style-type: none"> ● Do you have a system for auditing cords to ensure they are the proper kind? 	_____	_____
<ul style="list-style-type: none"> ● Do you avoid straining flexible cords? 	_____	_____
<ul style="list-style-type: none"> ● Do you avoid dragging flexible cords along window and other sharp edges? 	_____	_____
<ul style="list-style-type: none"> ● Do you avoid dragging flexible cords through staples and other sharp objects found at construction sites? 	_____	_____
<ul style="list-style-type: none"> ● Do you avoid removing ground plugs? 	_____	_____

Checklist for the Worksite Analysis—Electricity

ITEM	OK?	CORRECTIVE ACTIONS
Ground Fault Protection		
<ul style="list-style-type: none"> • Are all your power supply systems grounded? 	_____	_____
<ul style="list-style-type: none"> • Are all your electrical circuits grounded? 	_____	_____
<ul style="list-style-type: none"> • Is all your electrical equipment grounded? 	_____	_____
<ul style="list-style-type: none"> • Do you use ground-fault circuit interrupters (GFCIs) on all 120-volt, single-phase, 15- and 20-ampere receptacles? 	_____	_____
<ul style="list-style-type: none"> • Do you follow manufacturers' testing procedures to ensure GFCI is working properly? 	_____	_____
<ul style="list-style-type: none"> • Do you use double-insulated equipment? 	_____	_____
<ul style="list-style-type: none"> • Do you use tools according to their instructions? 	_____	_____
<ul style="list-style-type: none"> • Do you avoid using tools with frayed cords? 	_____	_____
<ul style="list-style-type: none"> • Do you avoid using tools with missing ground prongs? 	_____	_____
<ul style="list-style-type: none"> • Do you avoid using tools with cracked tool casings? 	_____	_____
<ul style="list-style-type: none"> • Do you ground all exposed metal parts of equipment? 	_____	_____
<ul style="list-style-type: none"> • Are all of your electrical systems grounded? 	_____	_____

Checklist for the Worksite Analysis—Electricity

ITEM	OK?	CORRECTIVE ACTIONS
Working Around Power Lines		
• Do you look for overhead power lines when you enter a construction site?	_____	_____
• Do you contact utilities for buried power line locations?	_____	_____
• Are power lines de-energized, guarded or insulated?	_____	_____
• Do you post warning signs when power lines can't be de-energized?	_____	_____
• If power lines are not de-energized, do you allow enough clearance?	_____	_____
• Do you identify safe routes where cranes and other equipment must travel?	_____	_____
• Do you operate cranes at slower-than-normal speeds when near power lines?	_____	_____
• Do you designate a signal person to indicate when clearance is safe?	_____	_____
• Do you avoid touching or handling the crane or its load until a signal person says it is safe to do so?	_____	_____
• Do you use boom guards?	_____	_____
• Do you use insulating links?	_____	_____
• When handling equipment or materials with a crane boom, do you use equipment that has an electrical ground connected directly to the upper structure of the boom?	_____	_____

Checklist for the Worksite Analysis—Electricity

ITEM	OK?	CORRECTIVE ACTIONS
Working Around Power Lines— continued		
<ul style="list-style-type: none"> Do you ground the metal frames and tracks of electrically operated cranes? 	_____	_____
<ul style="list-style-type: none"> Do you ground the frames of non-electrically driven elevator cards to which electric conductors are attached? 	_____	_____
<ul style="list-style-type: none"> Do you ground hand-operated metal shifting ropes or cables of electric elevators? 	_____	_____
<ul style="list-style-type: none"> Are ladders made of non-conductive wood or fiberglass? 	_____	_____

OSHA Resources for this checklist are:

- 29 CFR 1910.147
- 29 CFR 1926 Subpart I
- 29 CFR 1926 Subpart K
- 29 CFR 1926 Subpart N

Soil Classifications

Soil types are listed from the most stable to the least stable. Note that the soil in an excavation must be rated by a competent person.

Stable Rock	<ul style="list-style-type: none"> ■ A natural solid mineral ■ Examples: granite or sandstone ■ Can be excavated with vertical sides and remain intact while exposed
Type A Soils	<ul style="list-style-type: none"> ■ Cohesive soils with an unconfined compressive strength of 1.5 tons per square foot (tsf) or greater ■ Examples: clay, silty clay, sandy clay and clay loam ■ Exceptions: previously disturbed soils, fissured soil, soil with seeping water, vibration
Type B Soils	<ul style="list-style-type: none"> ■ Cohesive soils with an unconfined compressive strength greater than 0.5 tsf but less than 1.5 tsf ■ Examples: angular gravel, silt, silt loam ■ Other: Soils with Type A strength, but also with Type A exceptions
Type C Soils	<ul style="list-style-type: none"> ■ Cohesive soils with an unconfined compressive strength of 0.5 tsf or less ■ Examples: granular soils such as gravel, sand and loamy sand, submerged soil, soil from which water is freely seeping and submerged rock that is not stable
Layered Geological Strata	<ul style="list-style-type: none"> ■ Where different soil types are combined in layers, the soil must be classified based on the weakest layer

The above information can be found in the OSHA Technical Manual:
http://www.osha.gov/dts/osta/otm/otm_v/otm_v_2.html#app_v:2_1

For more detailed classifications, see OSHA 29 CFR1926 Subpart P, Appendix A.

The Competent Person For Excavation and Trenching

The OSHA standard requires that many excavation activities be conducted and/or supervised by a competent person. Here are the qualifications and duties of this person.

Qualifications of the competent person

- Soil analysis training
- Training on the use of the various protective systems
- Knowledge of the OSHA requirements
- Authority to act on site to eliminate hazards and to stop work when required
- Ability to detect conditions that could cause cave-ins, failures in protective systems, and hazardous atmospheres and conditions

Duties of the competent person

- Contact utilities to locate underground lines
- Evaluate soil conditions
- Determine type of protective system
- Oversee construction of protective system
- Determine safe entry and exit for the excavation
- Test for oxygen, hazardous fumes and toxic gases, especially if gasoline engine-driven equipment will be used
- Ensure adequate ventilation
- Hold a pre-project meeting to review safe work procedures
- Oversee the operation
- Enforce safe operating procedures
- Inspect the site at the start of each shift and following a rainstorm
- Have an emergency response plan
- Keep excavations open a minimum amount of time

Checklist for the Worksite Analysis—Excavation and Trenching

Every day, when you begin work at your excavation site, you should check for hazards that could cause an injury. Following is a list you can use when you do this check.

ITEM	OK?	CORRECTIVE ACTIONS
Spoil Placement		
<ul style="list-style-type: none"> • Are spoils at least 2 feet back from the excavation? 	_____	_____
<ul style="list-style-type: none"> • If spoils are not 2 feet back, do you use retaining devices, such as a trench box, to protect the excavation site. 	_____	_____
<ul style="list-style-type: none"> • Are the spoils placed so that rainwater and other run-off move away from the excavation? 	_____	_____
<ul style="list-style-type: none"> • If spoils can't be placed safely at the excavation site, are they hauled to another location? 	_____	_____
Protection Systems		
<ul style="list-style-type: none"> • Has a competent person selected the site's protection system? 	_____	_____
<ul style="list-style-type: none"> • Has a competent person overseen the installation of the protection system? 	_____	_____
<ul style="list-style-type: none"> • Is the protection system accurate for the soil type? 	_____	_____
<ul style="list-style-type: none"> • Is the protection system inspected every day by the competent person? 	_____	_____

Checklist for the Worksite Analysis—Excavation and Trenching

ITEM	OK?	CORRECTIVE ACTIONS
Safe Entry and Exit		
<ul style="list-style-type: none"> Do you have a safe way to enter and exit if the excavation is 4 or more feet deep? 	_____	_____
<ul style="list-style-type: none"> Is access within 25 lateral feet of workers? 	_____	_____
<ul style="list-style-type: none"> Are access ramps designed by a competent person? 	_____	_____
<ul style="list-style-type: none"> Do ramps have a non-slip surface? 	_____	_____
<ul style="list-style-type: none"> Can you walk upright on an earthen ramp? 	_____	_____
<ul style="list-style-type: none"> Are ladders secured? 	_____	_____
<ul style="list-style-type: none"> Do ladders extend at least 36 inches above the landing? 	_____	_____
<ul style="list-style-type: none"> Do you avoid using metal ladders if electricity is present at the site? 	_____	_____
Vehicle Safety		
<ul style="list-style-type: none"> Do you wear a warning vest marked with or made of reflectorized or high visibility materials? 	_____	_____
<ul style="list-style-type: none"> Is there a trained flag person who designates traffic at the excavation site? 	_____	_____
<ul style="list-style-type: none"> Are you trained to use hand or mechanical signals as a way to communicate? 	_____	_____
<ul style="list-style-type: none"> Is the excavation site fenced and barricaded at night? 	_____	_____
<ul style="list-style-type: none"> Does mobile equipment have a warning system? 	_____	_____

Checklist for the Worksite Analysis—Excavation and Trenching

ITEM	OK?	CORRECTIVE ACTIONS
Surface Crossing		
<ul style="list-style-type: none"> ● If there is a vehicle crossing, is it designed and installed under the supervision of a registered professional engineer? 	_____	_____
<ul style="list-style-type: none"> ● Do walkways have a minimum clear width of 20 inches? 	_____	_____
<ul style="list-style-type: none"> ● Are walkways fitted with guard rails? 	_____	_____
<ul style="list-style-type: none"> ● Do walkways extend a minimum of 24 inches past the surface edge of the trench? 	_____	_____
Water Management		
<ul style="list-style-type: none"> ● If there is water, does the site have special support or shield systems approved by a registered professional engineer? 	_____	_____
<ul style="list-style-type: none"> ● Does the site have water removal equipment, such as pumps, used and monitored by a competent person? 	_____	_____
<ul style="list-style-type: none"> ● Are surface waters diverted from the excavation? 	_____	_____
<ul style="list-style-type: none"> ● Do you use a safety harness or a lifeline? 	_____	_____
<ul style="list-style-type: none"> ● Are employees required to leave the site during rainstorms? 	_____	_____
<ul style="list-style-type: none"> ● Is the site carefully inspected by a competent person after each rain and before employees are permitted to re-enter? 	_____	_____

Checklist for the Worksite Analysis—Excavation and Trenching

ITEM	OK?	CORRECTIVE ACTIONS
Hazardous Atmosphere		
<ul style="list-style-type: none"> Is the atmosphere tested for possible oxygen deficiency or build-up? 	_____	_____
<ul style="list-style-type: none"> Is the oxygen content maintained at between 19.5% and 21%? 	_____	_____
<ul style="list-style-type: none"> Is ventilation provided to prevent flammable gas build-up to 20% of lower explosive limit of the gas? 	_____	_____
<ul style="list-style-type: none"> Is emergency response equipment readily available? 	_____	_____
Inspections		
<ul style="list-style-type: none"> Is your excavation site inspected by a competent person? 	_____	_____
<ul style="list-style-type: none"> Is the site inspected daily and before the start of each shift? 	_____	_____
<ul style="list-style-type: none"> Is site inspected after rainstorms? 	_____	_____
<ul style="list-style-type: none"> Is the site inspected after other events that could increase hazards such as snowstorms, windstorms, thaws or earthquakes? 	_____	_____
<ul style="list-style-type: none"> Is the site inspected when fissures, cracks, sloughing, undercutting, water seepage or bulging at the bottom occur? 	_____	_____
<ul style="list-style-type: none"> Is the site inspected when there is a change in the size, location or placement of the spoil pile? 	_____	_____
<ul style="list-style-type: none"> Is the site inspected when there is indication of change or movement in adjacent structures? 	_____	_____
<ul style="list-style-type: none"> Are site inspections documented? 	_____	_____

Checklist for the Worksite Analysis—Excavation and Trenching

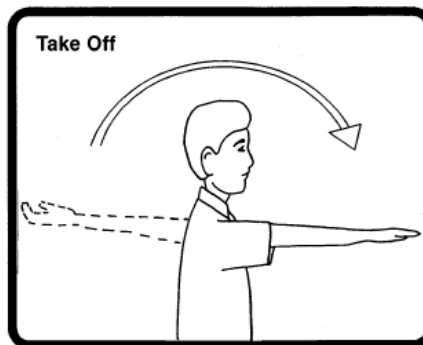
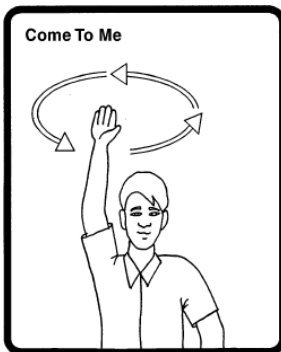
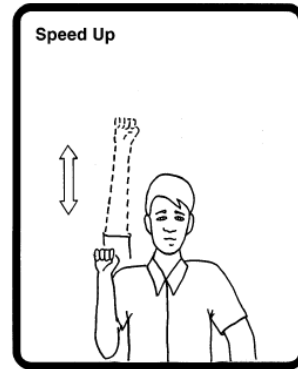
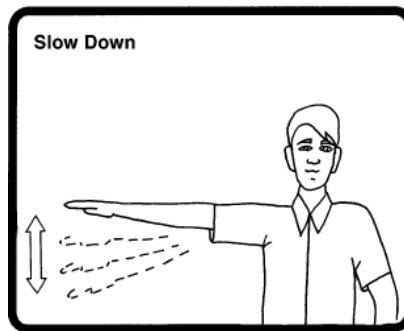
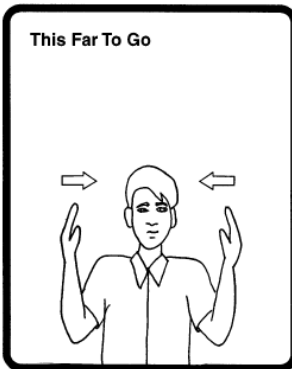
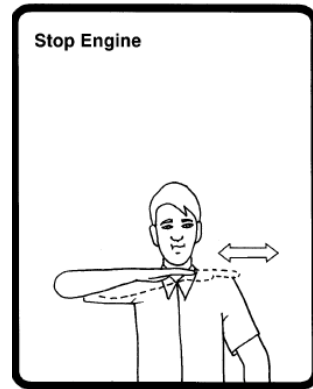
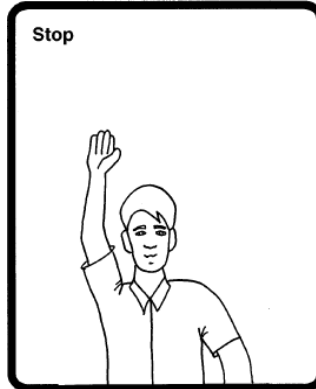
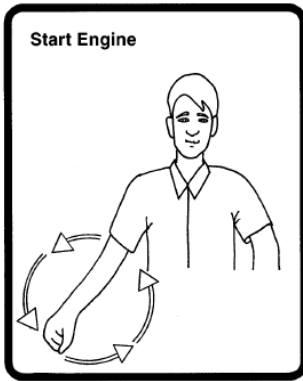
ITEM	OK?	CORRECTIVE ACTIONS
General Safety Practices		
<ul style="list-style-type: none"> • Do you wear a hard hat at all times? 	_____	
<ul style="list-style-type: none"> • Do you avoid working or walking under a suspended load? 	_____	
<ul style="list-style-type: none"> • Do you avoid working on faces of sloped or benched excavations above other employees? 	_____	

OSHA Resources for this checklist are:

- 29 CFR 1910.146
- 29 CFR 1926 Subpart D
- 29 CFR 1926 Subpart E
- 29 CFR 1926 Subpart P

Hand Signals

Following are some hand signals that you should learn. They will allow you to communicate with equipment operators.



Source: www.cdc.gov/nasd/docs/d00091-d001000/d000932/d000932.pdf

Checklist for the Worksite Analysis—Struck-By

Every day, when you begin work at your construction site, you should check for hazards that could cause a struck-by injury. Following is a list you can use when you do this check.

ITEM	OK?	CORRECTIVE ACTIONS
Operating Vehicles		
<ul style="list-style-type: none"> • Have you been trained in the proper operation of the vehicle you are driving? 	_____	_____
<ul style="list-style-type: none"> • Are all vehicles inspected before each shift? 	_____	_____
<ul style="list-style-type: none"> • Do the brakes work on all vehicles? 	_____	_____
<ul style="list-style-type: none"> • Does the vehicle sound an alarm when put in reverse? 	_____	_____
<ul style="list-style-type: none"> • Does the vehicle have a roll bar or a protective cabin? 	_____	_____
<ul style="list-style-type: none"> • Do you read and follow all the instructions in the operator's manual? 	_____	_____
<ul style="list-style-type: none"> • Are you drug and alcohol free? 	_____	_____
<ul style="list-style-type: none"> • Do you wear a seat belt when you operate a vehicle? 	_____	_____
<ul style="list-style-type: none"> • Do you avoid riding in reverse when your view is obstructed? 	_____	_____
<ul style="list-style-type: none"> • Do you use hearing protection? 	_____	_____
<ul style="list-style-type: none"> • Do you rely on a signal person to guide your vehicle movement through blind spots? 	_____	_____

Checklist for the Worksite Analysis—Struck-By

ITEM	OK?	CORRECTIVE ACTIONS
Operating Vehicles—continued		
<ul style="list-style-type: none"> Do you avoid wearing items (jewelry, ties, drawstrings, loose clothing) that could become entangled with the moving parts of the equipment? 	_____	_____
<ul style="list-style-type: none"> Do you avoid carrying other personnel on a vehicle unless there is a safe place to ride? 	_____	_____
<ul style="list-style-type: none"> Do you stay within the vehicle's rated lift or load capacity? 	_____	_____
<ul style="list-style-type: none"> Do you set the parking brakes when the vehicle is not in use? 	_____	_____
<ul style="list-style-type: none"> Do you use wheel chocks when the vehicle is inactive? 	_____	_____
<ul style="list-style-type: none"> Do you leave all power controls in the neutral position when the vehicle is not in use? 	_____	_____
<ul style="list-style-type: none"> Do you lower or block bulldozer and scraper blades and end-loader buckets when they are not in use? 	_____	_____

Checklist for the Worksite Analysis—Struck-By

ITEM	OK?	CORRECTIVE ACTIONS
Working Around Construction Vehicles or in Traffic		
• Have you been trained in safe work practices when working around construction equipment?	_____	_____
• Do you wear non-skid, sturdy shoes or boots?	_____	_____
• Do you wear highly visible clothing in all levels of light?	_____	_____
• At night, do you wear reflective clothing?	_____	_____
• Do you stay a safe distance away from an operating vehicle?	_____	_____
• Do you remain outside of barricaded areas where equipment is operating?	_____	_____
• Do you use hand signals to warn vehicle operators of conditions on the ground?	_____	_____
• Do you use flashing lights to warn traffic of your presence?	_____	_____
• Do you use stop and slow paddles to slow traffic down?	_____	_____
• Do you use concrete barriers to separate the construction workers from the traffic?	_____	_____
• Do you use signs and warning devices to give advanced warning to motorists?	_____	_____

Checklist for the Worksite Analysis—Struck-By

ITEM	OK?	CORRECTIVE ACTIONS
Falling/Flying Objects		
• Do you wear a hard hat?	_____	_____
• Do you wear safety glasses or a face shield?	_____	_____
• Do you stack materials to prevent them from sliding or collapsing?	_____	_____
• Do you use toeboards on scaffolds?	_____	_____
• Do you use safety nets on scaffold sides to prevent objects from falling over the side?	_____	_____
• Do you avoid working underneath scaffolds?	_____	_____
• Do you avoid working under areas that are being loaded or unloaded?	_____	_____
• Do you inspect cranes and hoists to ensure that all parts are secure?	_____	_____
• Do you avoid exceeding the lifting capacity of cranes and hoists?	_____	_____
• When you are working above others, do you secure your tools to prevent them from falling?	_____	_____
• When you are working above others, do you barricade a safe area to warn people below to steer clear?	_____	_____

OSHA Resources for this checklist are:

- 29 CFR 1926 Subpart E
- 29 CFR 1926 Subpart G
- 29 CFR 1926 Subpart L
- 29 CFR 1926 Subpart O