TABLE OF CONTENTS

CHAPTER 3. PROCEDURES FOR A SAFE WORKPLACE

AERIAL PLATFORMS (LIFTS/JLG'S)

1. Only trained personnel are allowed to operate any lifts. All personnel must wear personal fall protection when using any lifts.

2. Know the lift, how to operate it, the purpose of all controls, the location and normal readings of all gauges and dials. Know the rated workload, safe speed ranges, braking, steering, turning radius and operating clearances.

3. Read and understand the DANGER, WARNING, CAUTION, and other signs on the machine. Read and understand the Operator's Manual before using the machine. If there is no manual with the machine, get one.

4. Prior to starting the workday, inspect the machine and report all deficiencies. Do not operate the machine until all deficiencies are corrected and all systems are in good operational condition.

5. Check the ground or floor level in the area you will be traveling across for holes, debris, (especially if it can puncture the tires), drop-offs, wet/oil spots or rough areas. Repair/clean bad areas prior to traveling across them.

6. Check overhead prior to raising the platform. Be especially careful around power lines.

7. If using a lift with a combustion engine, make sure there is enough ventilation.

8. Never allow an unqualified individual to operate the lift.

9. Never position a lift over the top of another individual.

10. Always tie off inside the basket, not to adjacent structures. Never attempt to exit a lift unless the basket is fully lowered, or is resting on a structure able to support it if a failure occurred. Always keep both feet flat on the floor of the platform, do not climb on the railing.

11. When traveling in the raised position use extreme caution. Always keep your attention in the direction of travel.

12. Insure that all outriggers, stabilizers, etc., are extended prior to raising the platform.

13. When lowering the platform, make sure that all personnel are cleared below.

14. Never use ladders, planks, steps, or other devices to provide additional reach.

15. Use correct shutdown procedures and transporting preparation steps as specified by the manufacturer.

COMPRESSED GAS: PROPER HANDLING

INTRODUCTION

Compressed Gas cylinders of all types have a tremendous capacity for injury form mistreatment or mishandling.

The sheer energy storage that is contained in a cylinder (especially oxygen) makes this equivalent to storing and handling a bomb. Oxygen cylinders are typically pressurized to 2,000 P.S.I., and acetylene cylinders are typically pressurized to 250 P.S.I.

The following will cover the common high-pressure oxygen/acetylene cylinder regulations outlined by OSHA in Subpart J "Welding & Cutting". Most of the handling techniques addressed here will apply to carbon dioxide (CO2) and other similar gas cylinders.

STORAGE REGULATIONS/TECHNIQUES

All high-pressure gas cylinders need to comply with certain regulations. The following are highlights of the most common requirements for storage.

- Outside storage areas selected should be dry, well ventilated, protected, and not subject to continuous exposure to sunlight, moisture, salts, corrosives or extreme weather.
- The areas should have a definitive designation for cylinder storage and not be subject to damage, falling or from tampering.
- Inside storage rooms with more than 60 gallons of flammable or combustible liquids shall have a minimum of 20-B fire extinguisher located within 10 feet of the storage room door.
- Outside storage areas require a minimum of 20-B fire extinguisher located from 25 feet to 75 feet away from the storage area.
- Inside storage areas are limited to 2,000 cubic foot gas capacities or 300 lbs. of LPG. Larger amounts would require a separate storage room.
- Cylinders should be grouped by type of empty cylinders accessible for replenishment.
- The protective caps are required to be screwed into every cylinder during storage, handling, and transportation. Caps may be screwed on hand tight. Caps should be removed only when the cylinders are in use. Cylinders are considered available for use when the regulators are installed.

- Cylinder valves shall be closed at all times, except when in use. Empty cylinders are also required to have valves closed.

- Cylinders should not be emptied completely but retain approximately 30 P.S.I. to prevent contamination or in some cases, a fire or explosion hazard from outside air being introduced to a flammable mixture in a cylinder.

- Cylinders shall always be stored upright in a vertical position. In the case of acetylene, if a cylinder is found lying down, it must be set upright for at least one half hour before use to allow the acetone component in the cylinder to settle.

- Cylinder markings shall not be altered by the contractor. The minimum markings are: the type of cylinder and pressure rating, serial number, inspection date, and the type of material contained.

- Tanks shall have a red diamond denoting flammable substances contained within, and a green diamond for non-flammable substances.

- Cylinders shall not be stored at room temperature above 125 degrees F.

USAGE AND HANDLING REGULATIONS/TECHNIQUES

All high-pressure gas cylinders need to comply with certain regulations. The following are highlights of the more common requirements for usage and handling.

- Gas cylinders are made to be slightly tilted and rolled along their bases. However, they shall not be dropped, dragged or allowed to strike each other, or surrounding surfaces.

- Moving cylinders may also be done by hand trucks or cylinder handcarts. Lifting by hand typically takes two people.

- When lifting by cranes, hoists or forklifts, a metal cradle or skid box shall be used – no rope or chain slings. When moving cylinders, always assume they are pressurized.

- Gas cylinders are required to be secured in a vertical position when transported.

- Portable caps cannot be used to hook onto for hoisting. When removing caps, do not apply leverage to the valves. According to OSHA, when caps are frozen, warm water may be used to thaw cap threads.

- **Cylinders may be moved without protective caps** (and with regulators installed) **only in carts designed for the purpose, with the cylinders secured.**

- Cylinders shall be inspected before use. Physical defects, or unclear or insufficient labels should not be used, but brought to the attention of the superior, or vendor.

- When cylinders are being used, some means shall be used to secure the cylinders in a vertical position.

- Cylinders in use shall be placed to avoid sparks, slag, and flames from reaching the tanks.

- Cylinders shall be placed where they cannot become part of an electrical circuit, or in the case of arc welding, be far enough away to prevent an arc from striking the cylinder.

- Cylinders shall not be placed or used in any confined space.

- Cylinders (even empty ones) can never be used as rollers or supports for any equipment or materials.

- Damaged or defective cylinders cannot be used. Refilling cylinders can only be done by the cylinder owner, or his agent.

- Fuel-gas valves shall be cracked (see glossary) before connecting the regulator to clear the valve of any dirt or dust first. The valve should be clear of any source of ignition, and the worker cracking the valve should stand to one side.

- When a regulator is placed on a gas valve, the valve should be turned open slowly to prevent regulator damage and not opened more than 1-1/2 turns to permit quick closing.

- If a special wrench is used to operate the valve, it shall be left in place to permit quick closing for the valve.

- Any gases must be released from the regulator before disconnecting a regulator from the gas valve.

- Any cylinder leakage that cannot be stopped by tightening or by the regulator valve seat shall be immediately tagged and removed from the work area.

- Cylinders shall not become greasy or oily through use. Any grease or oil can become a fire hazard if oxygen is accidentally released. Clean off any grease or oils frequently.

- The common OSHA violations for compressed gas cylinders are for lack of protective caps and not having the cylinders upright and secured.

CRANES & RIGGING PROCEDURES

CRANES

1. Belair Excavating will comply with the manufacturer's specifications and limitations applicable to the operations on any and all cranes and derricks.

2. Any special instructions concerning the safe operation will be posted on all equipment.

3. Accessible areas within swing radius of a crane must be barricaded to prevent workers from being struck or crushed by the crane.

4. A fire extinguisher rated for A, B, and C fires shall all be available at all operator stations and cabs of equipment.

5. Except where electrical distribution and transmission lines have been de-energized and visibly grounded; or where insulating barriers not attached to the equipment have been erected to prevent physical contact with lines, no part of the crane or its load shall be operated within the following minimum distances:

    - 10 feet of a line rated 50 k V or below.
    - 10 feet +4 inches for each 1kV over 50 kV for lines rated over 50kV.
    - Or twice the length of the line insulator, but never less than 10 feet.

6. If it is difficult for the crane operator to maintain visual clearance, a designated person must assist. Both the operator and the ground person must be familiar with standard industry hand signals.

7. If possible, loads should never be swung over workers heads.

8. Cranes shall be inspected before each use by the operator. Any defects around in the crane or rigging must be corrected before use.

9. Do not make lifts beyond the safe carrying capacity of the rigging.

10. Riding on hoist loads, hooks, or tackle is prohibited.

11. Standing or walking under an elevated load is prohibited.

12. Suspended loads shall not be left unattended.

13. All hoisting hooks must have the proper safety latch.

14. Any questions or concerns involving crane safety can be directed to your immediate supervisor or Safety Director.

RIGGING: Slings, Chain, Rope

Safe operating practices for use include:

1. Any sling, chain or rope that is damaged or defective is not to be used. They should be returned to the shop for repair.

2. Slings and chains should not be shortened or lengthened using knots, or any other method not approved by the manufacturer.

3. Safe working loads for all slings should be determined using approved load tables and manufacturer recommendations. These values should never be exceeded.

4. Slings and chains must be securely attached to all loads for proper control.

5. Padding or protection should be used on sharp edges to minimize damage to slings.

6. Body parts must be kept from between the sling/chain and the load when being tightened.

7. Twisting and kinking of sling legs (branches) should be avoided.

8. All employees should stand clear of a suspended load. Only necessary personnel should be allowed in the area.

9. No employee shall ride a sling under any circumstances.

10. Shock loading should be avoided.

11. Slings should not be pulled from under a load while the load is resting on it.

12. Permanent ID tags attached by the manufacturer **should not** be removed.

INSPECTION

The single most important operational check to be made on hoisting and rigging equipment is a rope and rigging inspection. Factors leading to failure and accidents such as abrasion, wear fatigue, corrosion and kinking can be identified during a thorough inspection. A complete and thorough inspection of all rigging equipment shall be performed daily. All inspections shall be the responsibility of, and be performed by a "competent person" appointed by Belair Excavating on every required jobsite.

Additional inspections shall be performed as outlined below:

Slings: All slings shall be checked **daily**, before being used, for damage or defects. Employees should promptly report any questionable conditions in the equipment or in the assembly to the supervisor. Damaged or defective slings should be removed from service immediately. Signs of damage include:

a. cuts, abrasions, and fraying of nylon material;
b. broken strands, kinks, and corrosion in wire rope;
c. cracked, elongated, and or twisted links in chain slings.

Chains: All chains will be inspected on a regular basis depending on frequency of use, severity of conditions, and the nature of lift being done. The minimum period between inspections will be one (1) year. A thorough inspection should be made to detect:

d. Bent links
e. Cracks in weld areas, shoulders of the links
f. Transverse nicks and gouges.
g. Corrosion pitting.
h. Stretching due to overloading

Before use, each new, repaired or reconditioned chain sling must be proof tested by the sling manufacturer or an equivalent entity, in accordance with paragraph 5.2 of the ASTM Specification A391-654 (ANSI G61.1-1968).

Wire Rope: Wire rope slings will be inspected regularly, based on service conditions and **daily** prior to use. A thorough inspection should look for:

a. Kinking and loose wires
b. Wear of the crown wires
c. Corrosion, nicking
d. Lack of lubrication
e. End attachments that are worn, cracked, or deformed
f. Ten (10) randomly distributed broken wires in 1 rope lay or five broken wires in 1 strand in 1 rope lay. These require immediate removal from service.

Rope and Webbing: Rope and webbing should be inspected daily prior to use along its entire length since damage is not always visible. A thorough inspection requires examining, inch by inch for:

a. Wear and abrasions.
b. Broken or cut strands.
c. Powdered fiber between strands.
d. Discoloration, melting, or charring.
e. Distortion of any fitting.

STORAGE

Synthetic ropes and webbed slings should be stored indoors in a well-ventilated area away from fumes, corrosive materials, heat, chemicals, moisture, and rodents. They should be cleaned before storing. Smaller sizes should be coiled and hung above ground level for added protection.

Chains should be stored in/on suitable racks or hangers off the floor. Chains left on the floor can be damaged by trucks or other vehicles, and are more susceptible to rust and corrosion.

Wire rope slings should be stored off the ground. They should be cleaned and lubricated prior to storage. Hanging is the preferred method of storage.

All chains, ropes, and slings found to be defective or damaged beyond repair will be burned or cut up before disposal to prevent further use of these unsafe materials.

Know Your Hand Signals!

Basic Standard Hand Signals for Cranes and Hoisting Equipment

HOIST: With forearm vertical, and forefinger pointing up, move hand in small horizontal circle.

LOWER: With arm extended downward, forefinger pointing down, move hand in a small horizontal circle.

RAISE BOOM: Arm extended, fingers closed, thumb pointing upward.

LOWER BOOM: Arm extended, fingers closed, thumb pointing downward.

EXTEND BOOM: Both fists in front of body with thumbs *pointing outward.*

RETRACT BOOM: Both fists in front of body with thumbs *pointing toward each* other.

SWING: Arm extended, point with finger in direction of desired boom swing.

STOP DOG EVERYTHING: Clasp hands in front of body.

MOVE SLOWLY: Use one hand to give any motion signal and place the other hand motionless in front of the hand giving the signal.

TRAVEL: Arm extended forward, hand open and slightly raised, make pushing motion in direction of travel.

USE MAIN HOIST: Tap fist on head; then use regular signals.

USE WHIP LINE (AUXILIARY HOIST): Tap elbow with one hand; then use regular signals.

STOP: Arm extended, palm down, move arm back and forth horizontally.

RAISE THE BOOM AND LOWER THE LOAD: With arm extended, thumb pointing up, flex fingers in and out as long as load movement is desired.

LOWER THE BOOM AND RAISE THE LOAD: With arm extended, thumb pointing down, flex fingers in and out as long as load movement is desired.

EMERGENCY STOP: Both arms extended, palms down, move arms back and forth horizontally.

[redacted] AP2003-M061

EXCAVATING AND TRENCHING

- Prior to any excavation, efforts must be made to determine the presence of underground installations in the area. This includes making locates calls. Underground utilities must be located and supported during excavation operations. See the Utilities Procedures (3.24) for further information.
- No person may enter a trench or work at the foot of the face of an excavation until a competent person has determined whether sloping or shoring is required to protect against cave-in or subsidence, and the appropriate protection has been installed.
- A competent person must be appointed for all excavation and trenching procedures. The competent person must conduct regular (at least daily) inspections to ensure changes in temperature, precipitation, nearby building weight, vibration, or other operations have not caused weakening of the sides, faces, and floors. This includes at the start of work and after rainstorms. If evidence of possible cave-ins or slides is apparent, cease all work in the excavation until corrective actions have been taken.
- The competent person should call the project manager with any questions or if the presence of wet soil is noted.
- For layered soils, the worst condition prevails.
- Material removed from a trench or excavation must be placed far enough from the edge (at least 2 feet) to prevent it from sliding into the excavation and/or from stressing the trench or excavation walls.
- Sufficient ramps or ladders must be provided to trenches or excavations of 4 feet or greater to allow quick egress. Ladders must be placed so as to require no more than 25 feet of lateral travel, must be secured from shifting and must extend at least 3 feet above the landing point of the excavation. Use, construction, and maintenance of ladders must conform to ladder safety requirements.
- Excavations over 20 ft. deep must have shoring or sloping designed by a professional engineer.
- Access to trenching areas must be controlled and limited to those persons who are authorized.
- If trenches or excavations are near walkways or roadways, guard or warning barriers must be placed to alert pedestrians and drivers of the presence of the trench or excavation. If possible, trenches or excavations should be covered or filled in when unattended; otherwise, strong barriers must be placed around the trench or excavation, and lighting must be provided at night if the trench or excavation is near walkways or roadways.

All trenching and excavation operations must comply with 29 CFR 1926 Subpart P.

Note: Means of egress from trench excavations: A stairway, ladder, ramp or other safe means of egress shall be located in trench excavations that are 4 feet (1.22 m) or more in depth so as to require no more than 25 feet (7.62m) of lateral travel for employees.

Regulations (Standards - 29 CFR) - Table of Contents

• **Part Number:**	1926
• **Part Title:**	Safety and Health Regulations for Construction
• **Subpart:**	P
• **Subpart Title:**	Excavations
• **Standard Number:**	1926 Subpart P App B
• **Title:**	Sloping and Benching

(a) ***Scope and application***. This appendix contains specifications for sloping and benching when used as methods of protecting employees working in excavations from cave-ins. The requirements of this appendix apply when the design of sloping and benching protective systems is to be performed in accordance with the requirements set forth in § 1926.652(b)(2).

(b) ***Definitions***.

Actual slope means the slope to which an excavation face is excavated.

Distress means that the soil is in a condition where a cave-in is imminent or is likely to occur. Distress is evidenced by such phenomena as the development of fissures in the face of or adjacent to an open excavation; the subsidence of the edge of an excavation; the slumping of material from the face or the bulging or heaving of material from the bottom of an excavation; the spalling of material from the face of an excavation; and ravelling, i.e., small amounts of material such as pebbles or little clumps of material suddenly separating from the face of an excavation and trickling or rolling down into the excavation.

Maximum allowable slope means the steepest incline of an excavation face that is acceptable for the most favorable site conditions as protection against cave-ins, and is expressed as the ratio of horizontal distance to vertical rise (H:V).

Short term exposure means a period of time less than or equal to 24 hours that an excavation is open.

(c) ***Requirements*** -- (1) ***Soil classification***. Soil and rock deposits shall be classified in accordance with appendix A to subpart P of part 1926.

(2) ***Maximum allowable slope***. The maximum allowable slope for a soil or rock deposit shall be determined from Table B-1 of this appendix.

(3) ***Actual slope***. (i) The actual slope shall not be steeper than the maximum allowable slope.

(ii) The actual slope shall be less steep than the maximum allowable slope, when there are signs of distress. If that situation occurs, the slope shall be cut back to an

actual slope which is at least ½ horizontal to one vertical (½H:1V) less steep than the maximum allowable slope.

(iii) When surcharge loads from stored material or equipment, operating equipment, or traffic are present, a competent person shall determine the degree to which the actual slope must be reduced below the maximum allowable slope, and shall assure that such reduction is achieved. Surcharge loads from adjacent structures shall be evaluated in accordance with § 1926.651(i).

(4) ***Configurations***. Configurations of sloping and benching systems shall be in accordance with Figure B-1.

TABLE B-1
MAXIMUM ALLOWABLE SLOPES

SOIL OR ROCK TYPE	MAXIMUM ALLOWABLE SLOPES (H:V)(1) FOR EXCAVATIONS LESS THAN 20 FEET DEEP(3)
STABLE ROCK	VERTICAL (90°)
TYPE A (2)	3/4:1 (53°)
TYPE B	1:1 (45°)
TYPE C	1 ½:1 (34°)

Footnote(1) Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.

Footnote(2) A short-term maximum allowable slope of 1/2H:1V (63°) is allowed in excavations in Type A soil that are 12 feed (3.67 m) or less in depth. Short-term maximum allowable slopes for excavations greater than 12 feet (3.67 m) in depth shall be 3/4H:1V (53°).

Footnote(3) Sloping or benching for excavations greater than 20 feet deep shall be designed by a registered professional engineer.

Figure B-1

Slope Configurations

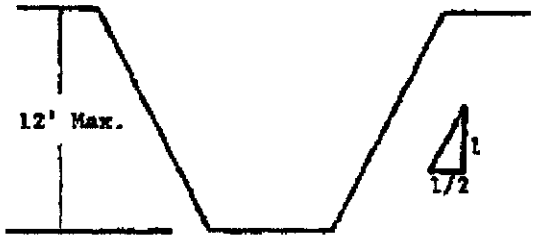
(All slopes stated below are in the horizontal to vertical ratio)

B-1.1 Excavations made in Type A soil.

1. All simple slope excavation 20 feet or less in depth shall have a maximum allowable slope of ¾:1.

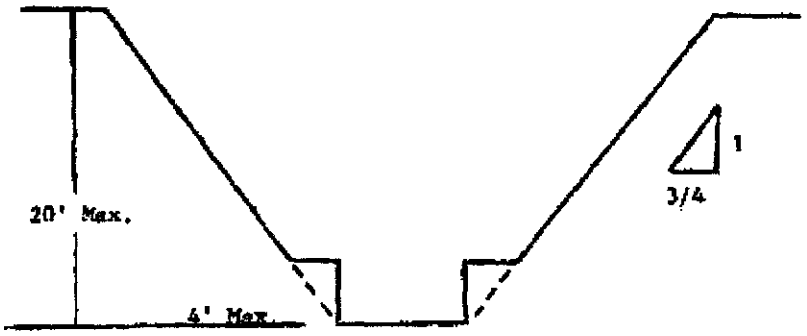
SIMPLE SLOPE -- GENERAL

Exception: Simple slope excavations which are open 24 hours or less (short term) and which are 12 feet or less in depth shall have a maximum allowable slope of ½:1.

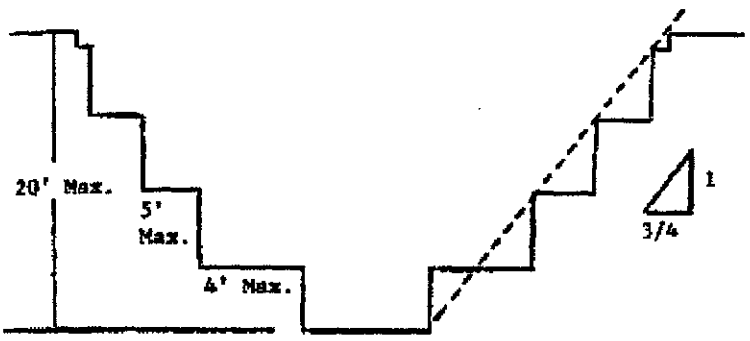


SIMPLE SLOPE -- SHORT TERM

2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 3/4 to 1 and maximum bench dimensions as follows:

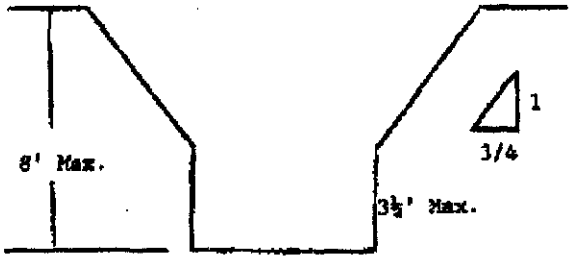


SIMPLE BENCH



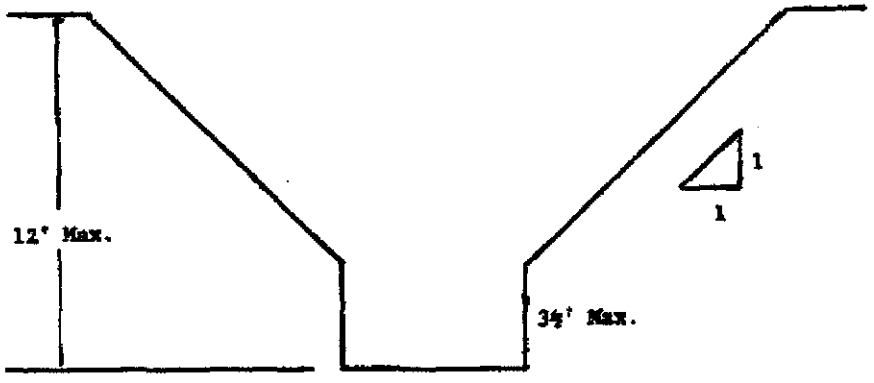
MULTIPLE BENCH

3. All excavations 8 feet or less in depth which have unsupported vertically sided lower portions shall have a maximum vertical side of 3½ feet.



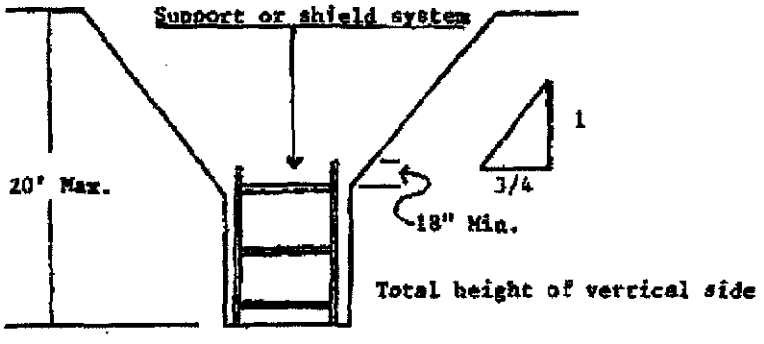
UNSUPPORTED VERTICALLY SIDED LOWER PORTION -- MAXIMUM 8 FEET IN DEPTH)

All excavations more than 8 feet but not more than 12 feet in depth with unsupported vertically sided lower portions shall have a maximum allowable slope of 1:1 and a maximum vertical side of 3½ feet.



UNSUPPORTED VERTICALLY SIDED LOWER PORTION -- MAXIMUM 12 FEET IN DEPTH)

All excavations 20 feet or less in depth which have vertically sided lower portions that are supported or shielded shall have a maximum allowable slope of ¾:1. The support or shield system must extend at least 18 inches above the top of the vertical side.

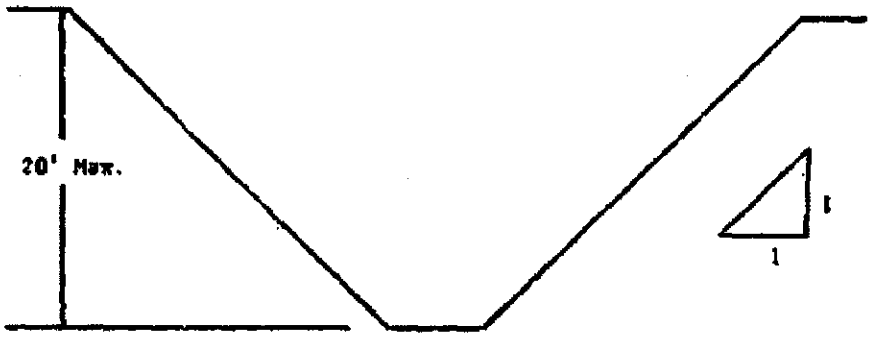


SUPPORTED OR SHIELDED VERTICALLY SIDED LOWER PORTION

4. All other simple slope, compound slope, and vertically sided lower portion excavations shall be in accordance with the other options permitted under § 1926.652(b).

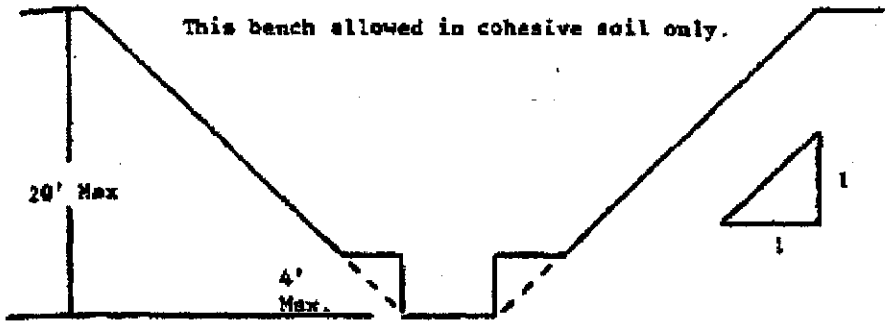
B-1.2 Excavations Made in Type B Soil

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1.

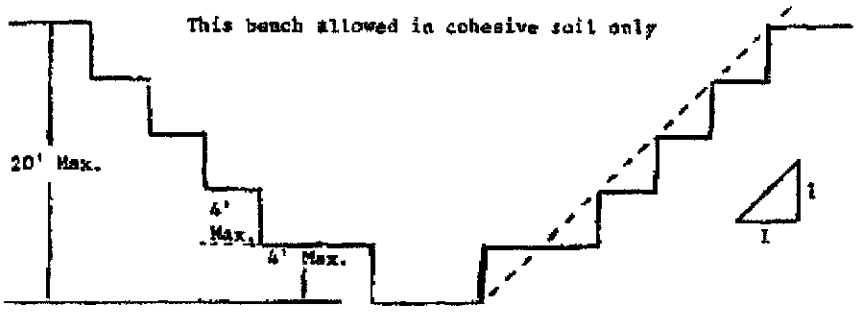


SIMPLE SLOPE

2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1 and maximum bench dimensions as follows:

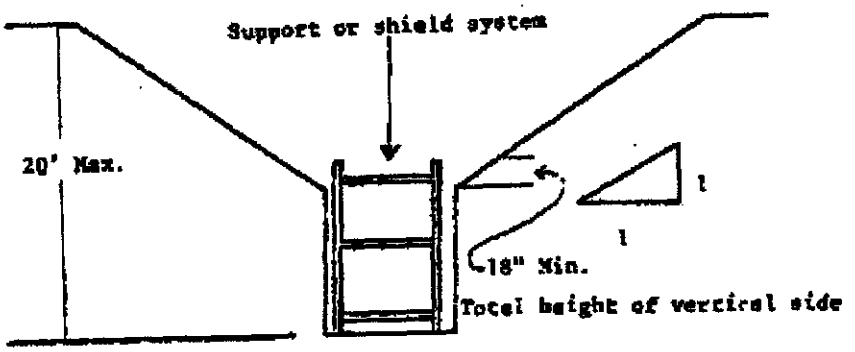


SINGLE BENCH



MULTIPLE BENCH

3. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1:1.

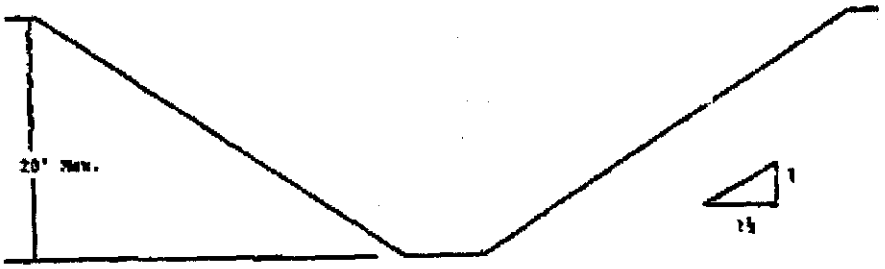


VERTICALLY SIDED LOWER PORTION

4. All other sloped excavations shall be in accordance with the other options permitted in § 1926.652(b).

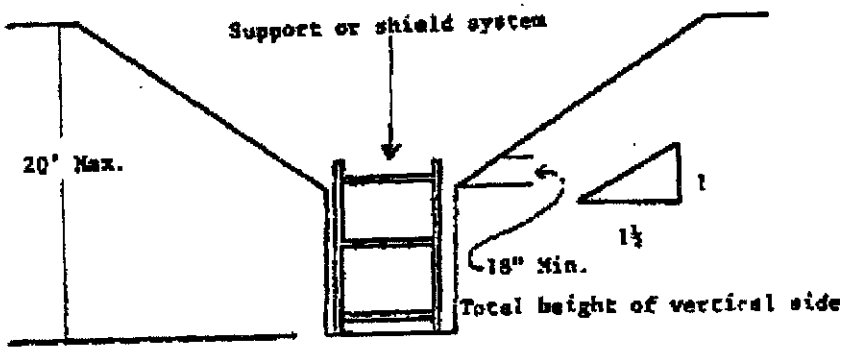
B-1.3 Excavations Made in Type C Soil

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1½:1.



SIMPLE SLOPE

2. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1½:1.

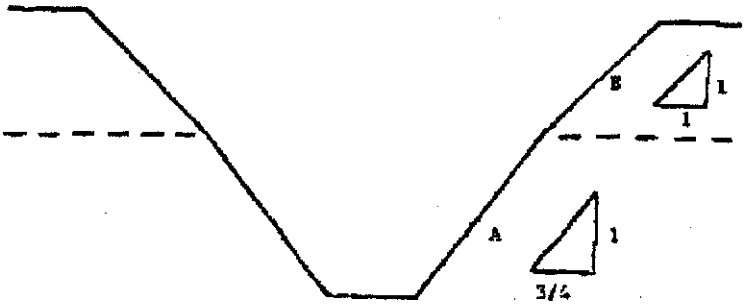


VERTICAL SIDED LOWER PORTION

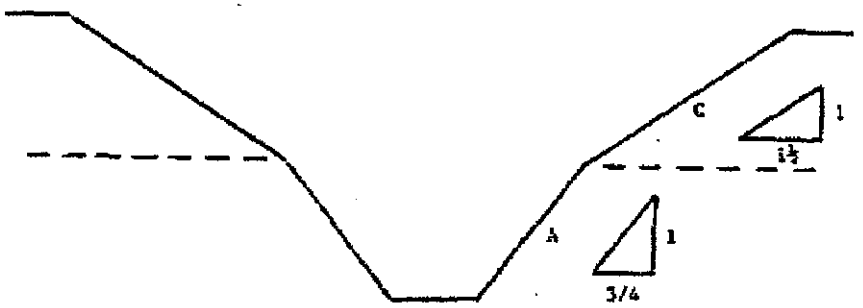
3. All other sloped excavations shall be in accordance with the other options permitted in § 1926.652(b).

B-1.4 Excavations Made in Layered Soils

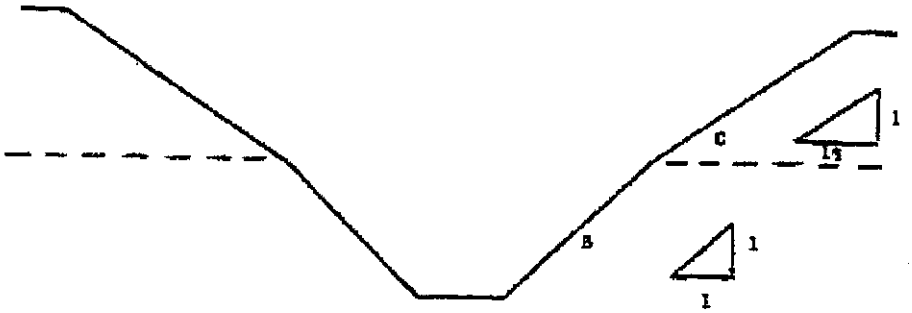
1. All excavations 20 feet or less in depth made in layered soils shall have a maximum allowable slope for each layer as set forth below.



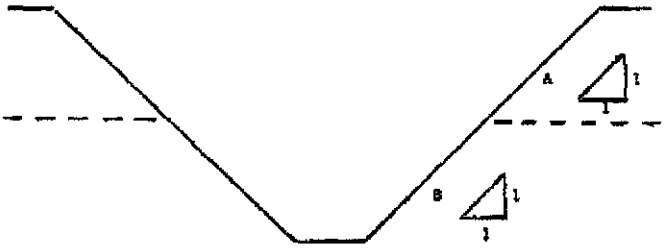
B OVER A



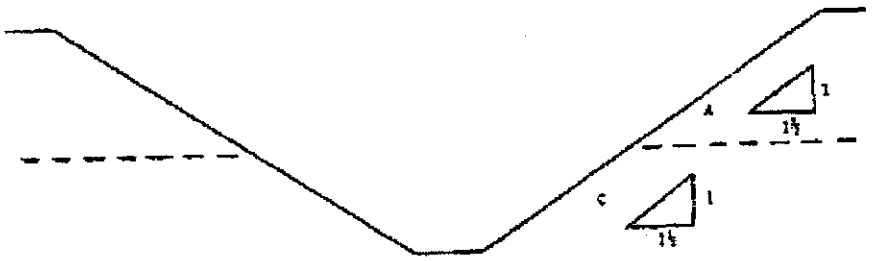
C OVER A



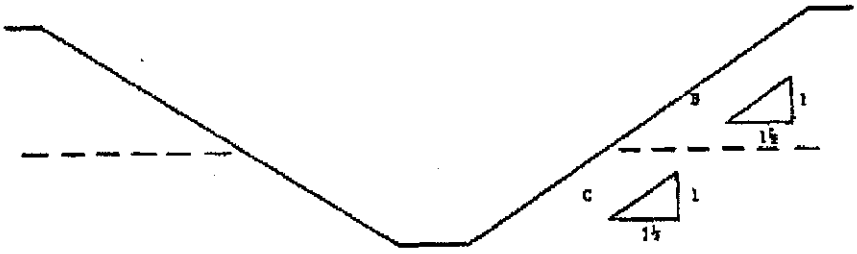
C OVER B



A OVER B



A OVER C



B OVER C

2. All other sloped excavations shall be in accordance with the other options permitted in § 1926.652(b).

EYE PROTECTION

Employees will be provided with eye and face protection when operations or the use of machines could result in eye or face injury. We must follow or exceed OSHA Regulation 29 CFR 1926.102 regarding the use of safety goggles (see attached).

All face and eye protection must be kept clean and in good repair.

Goggles must be worn in the field and in the shop at all times when conditions warrant it.

The lead shop floor person will make the determination of whether or not it is necessary to wear goggles in the shop.

The yellow line in the shop designates how far an individual may go into the shop *without wearing goggles.*

Use common sense and work safe!

FIRE PROTECTION

Following basic fire prevention practices can significantly reduce the probability of a fire. Potential losses from fire include damage to, or total destruction of , company facilities, materials, equipment, and/or supplies, as well as the risk to public property and human life. All fire damage, no matter how slight, must be reported to management and the Safety Director immediately. The following procedures can help prevent fire damage:

- Fire extinguishers, must be conspicuously located and readily accessible at all times. Workers must know the location, use, and limitations of available fire extinguishers. Fire fighting equipment should be periodically inspected and maintained in good operating condition. Any equipment that is not in good operating condition or is missing should be reported to your supervisor.

- The local fire department phone number should be posted at each job site.

- The fire extinguisher must be appropriate for the potential type of fire that could be encountered at the location.

- Smoking is prohibited in all areas where flammable, combustible, or similar hazardous materials are stored. All sources of ignition will be prohibited in areas where flammable liquids are stored, handled, or processed.

- All major motorized equipment will be equipped with a fire extinguisher of a type and make approved by the National Board of Fire Underwriters.

- Fire lanes are to be kept free of obstruction.

- Material storage will be arranged to minimize the spread of fire internally and to permit access for fire fighting.

FIREARMS AND WEAPONS GUIDELINES

Firearms and weapons are banned at all Belair Facilities and Job sites, without permission by a State Director of Operations or General Manager.

This ban does not apply to City, State or Federal Officials who posses firearms or weapons that are required for them to carry out their line of duty.

GENERAL SAFETY RULES

1. Report unsafe conditions and "near misses" to your supervisor.
2. Immediately report all injuries to your supervisor.
3. Employees involved in a work-related accident, regardless of injury, are required to fill out and sign an Accident/Incident Report form.
4. Wear hard hats and safety glasses on all designated job sites at all times. Chemical splash goggles must be on hard hats ready for use and earplugs must be with you ready for use. Your personal protection equipment must be on the job each work day.
5. Use safety glasses, goggles, or face shields during operations involving concrete breaking, metal chipping/cutting, welding, power tools, grinding or dusty conditions. Use eye and ear protection for operations involving powder actuated tools, saw cuts with metal, and all high noise level activities.
6. Wear appropriate work clothes; long sleeves, gloves, and construction grade boots. Loose clothing and jewelry (especially rings) should not be worn.
7. Properly care for and be responsible for all personal and company protective equipment. Replace lost or damaged equipment.
8. During an emergency evacuation, employees are to report to their foreman at the pre-established safe regrouping location.
9. The use of, or being under the influence of intoxicating beverages or illegal drugs while on the job is prohibited. Prescription drugs, which may cause drowsiness, must be reported to your supervisor.
10. Horseplay or practical jokes shall not be permitted on the job before, during and after work hours. Fighting on the job is grounds for dismissal.
11. Be alert and keep out from under overhead loads.
12. All employees working on Belair Excavating jobs sites shall practice good housekeeping. Excess material shall be properly stacked and stored in a secure place. Protruding nails, wire, etc., shall be bent over, cut or pulled. Debris shall not be allowed to accumulate in aisles and will be frequently removed.
13. Gasoline must be stored and securely transported in proper safety containers with flashback liners in place. Engines must be shut off when refueling. No smoking anywhere near flammable liquids.
14. Compressed gas cylinders (propane, oxygen acetylene, etc.) must be secured in an upright position. When not in use, caps must be securely on. Oxygen and acetylene shall not be stored together.
15. Never operate any machine or equipment unless all guards and safety devices are in place and in proper operating condition.
16. Keep all tools in safe working condition. Never use defective tools or equipment. Report all defective equipment to your foreman.

17. Machinery shall be properly oiled, cleaned, adjusted, refueled and operated only by authorized operators. Shut off and lock equipment under repair.

18. No person shall ride any boom, forklift or material handling equipment.

19. When burning or welding is being done, a fire extinguisher must be close at hand at all times. Only authorized persons shall weld and each shall wear protective face shields, eye protection and appropriate clothing (no polyester). Training or review of welding operations and hot work permits are to be issued on each job by the foreman or superintendent.

20. Scaffold units are to be used in preference to ladders. Ladders shall be used only in the open and locked position. The last step prior to the top will never be used. Place ladders on a substantial base and do not use ladders with broken, split or missing rungs or rails. All access ladders are to extend at least three feet above the landing platform and be securely fastened. Proper ladder placement is: ¼ base/height.

21. Elevated work platforms are to be used only by the contractors who erected them. Only companies with written approval from the erecting contractor may use scaffolding erected by that contractor.

22. Lift correctly, using your legs to take the strain. Turn by placing the proper foot into the direction of the turn (do not twist with the back). Lock your lower back curve, tighten stomach muscles before your lift. Stretch your muscles before lifting.

23. Running on the job is always prohibited. Jumping off any ladder, scaffold or height is grounds for dismissal. While ascending any ladder the three point contact rule (2 hands – 1 foot, 2 feet – 1 hand) must be used. Use a rope to lift tools.

24. Belair Excavating has a Hazardous Communication Program (HCP). The purpose of this program is to inform you of the hazards of the chemical we work with in order to reduce chemical source injuries and illness. If you have a question about any chemical you work with, see your foreman.

25. You must understand the foreman's instructions. If you do not know how to do the job safely, ask your foreman.

26. Never seek medical attention concerning a work-related injury or illness after work hours without first attempting to notify your supervisor.

27. If you are injured away from the job, notify your supervisor; it may affect your job performance or worsen the injury.

28. If your state driver's license becomes suspended or revoked or you have changes in your medical condition which would negate licensing, report this information to your supervisor immediately.

29. All electrical cables, welding cables or torch hoses which run across aisles and through work areas shall be covered by a protective ramp or run overhead wherever practical.

GENERAL SAFETY RULES AND INSTRUCTIONS

The purpose of BELAIR's safety rules and instructions is to provide our employees with a safety program to be followed and to set forth a safe work environment. It is the duty of every supervisor and each of our field personnel to perform all work in a safe manner. Your means of livelihood is diminished or destroyed when you are disabled. You and your family suffer the most when you are injured. These safety rules and regulations are to help protect you.

The following safety rules are to be followed while you are employed at BELAIR:

PERSONAL WORK HABITS

Almost all serious injuries are the result of unsafe personal work habits that are continued day after day until they cause an accident. Eighty-five (85) percent of all accidents are employee-caused and fifteen (15) percent are mechanically caused.

Report to work rested and physically fit to perform your job.

Report all injuries immediately. Even small cuts can become seriously infected.

Report all unsafe conditions or equipment to your supervisor.

Practical jokes, "horseplay" or roughhousing will not be tolerated and will be subject to immediate dismissal.

Always keep your mind on your job and your temper under control!

Rely on your supervisor's knowledge and experience if you do not understand any rule or work procedure.

Whether or not a specific rule is contained in this manual, work with care and good judgment at all times to avoid accidents.

Give your wholehearted support to your safety activities. Preventing an accident depends on ***YOU***!

Wear clothing suitable for weather and your work. Torn or loose clothing, cuffs and neckwear are hazardous.

Wear approved safety footwear that is suitable for your trade and in good condition.

Use gloves, or other suitable skin protection when handling rough materials, chemicals, hot or cold objects. Replace if worn.

Jewelry (rings, bracelets, neck chains, etc.) should not be worn.

Special safety equipment is provided for your protection. Use when required. Keep in good condition. Report loss or damage immediately.

Wear eye protection if exposed to flying objects, dust, chemicals and when sawing block or brick.

JOB-SITE PRACTICES

The way to prevent unsafe practices is to make a thorough inspection of your JOB-SITE. Correct any unsafe practices immediately.

Do not start work until locates have been called, all job site markings are made, and the area appears "safe" to you.

Have safe access to work areas - "The safe way is the right way!"

Avoid shortcuts - use ramps, stairs, walkways, ladders, etc.

When entering different work areas, familiarize yourself with any required safety precautions.

Be sure your footing is well supported before stepping. Watch out for overhanging planks, slippery spots, loose objects, ice, snow, water materials, etc.

Be aware of work going on around you. Keep clear of suspended loads, traffic areas, etc.

Make sure enough lighting exists at stairs, aisles, basements, etc.

Place barricades and signs to warn of traffic, overhead dangers, etc. Have warning lights, flagmen or watchmen if necessary.

Make sure fencing or barricades at excavations, floor openings, etc. are in place.

Do not permit vehicles too close to edge of excavations.

Keep constant check on blocks, cables, clamps and other tackle. Replace or repair if defective.

Consider all wires "live" until checked out and locked out. Keep safe

distance from "live" electricity.

Only qualified personnel can make electrical repairs or installations.

Do not use metal ladders and hats near electric power lines.

If excavating at or near old construction sites, locate gas, power, and water lines before starting work. Contact utility companies and your supervisor.

Obey all "No Smoking" signs on construction sites.

Know location and use of fire extinguishing equipment and how to give a fire alarm.

Winter working conditions may create an excess of carbon monoxide. If so, call the office immediately for corrective action.

EXCAVATING EQUIPMENT

All mounting and dismounting of equipment shall be done with extreme caution. Jumping will only be tolerated in a dangerous situation.

Hard hats shall be used when working around lateral and overhead dangers such as booms, buckets, etc. This rule also applies to ground flying objects.

All machines shall be equipped with an approved reverse audible warning device.

BELAIR workers must maintain a minimum of eight feet from moving operating equipment.

Equipment windows shall be maintained in a clean fashion so as not to impair vision.

BELAIR equipment must be maintained in a safe working order at all times.

Fire extinguishers and first aid kits shall be available to, and within a reasonable distance from, all workers.

Any machines working around or near overhead power lines shall maintain a safe working distance. Questionable situations must be reported to the power company AND to BELAIR immediately.

Flagmen shall be used when the situation warrants.

Underground locates must be called for and should be marked before any earthwork begins.

Eye, ear and respiratory equipment shall be used when deemed necessary.

Vibratory damage potentials should be considered and identified before working in such an area.

Common sense shall be exercised by all while using BELAIR equipment.

SUMMARY OF SAFETY INSTRUCTIONS TO EMPLOYEES

Report at once to your Foreman all injuries no matter how slight they may appear.

Always use the safety devices that are provided by the company for your protection.

Report to your Supervisor or Foreman any conditions or practices which appear to be unsafe.

Employees should, at all times, do everything possible to avoid injury and avoid injuring other employees.

Be safety conscious and give your Supervisor any suggestions you have for improving safety measures or devices.

HARD HAT POLICY

We must meet or exceed OSHA 1926.100. Specifically, employees working in areas where there is a possible danger of head injury from impact, falling or flying objects, electrical shock and burns must be protected by hard hats.

- Hard hats must be worn on all job sites at all times. See the shop foreman if your hard hat is damaged or lost. The first two (2)hard hats will be furnished by BELAIR; a nominal cost will be assessed to you thereafter.

- "Job site" is defined as a place of work 100 ft. or more outside of BELAIR's building (unless a hazard exists closer to the building).

- Exceptions:

    - The Shop area, unless conditions warrant otherwise.
    - Within 100 ft. of BELAIR's building.
    - In a truck or enclosed cab.
    - Under a roll-over protection device.
    - When mechanics are repairing a machine at the job-site. However, they must carry a hard hat with them at all times and wear it most of the time. It can only be removed when it is impossible to use.
    - Interior commercial and industrial building sites and other areas where safe conditions appear to exist. The project supervisor may seek written permission from BELAIR's Safety Director, who must post the permission notice (if granted) on-site, in full view for all workers to see.

HOUSEKEEPING PROCEDURES

Good housekeeping is the first law of accident prevention in construction and shall be of primary concern to all superintendents, foremen, and employees. Good housekeeping shall be planned at the beginning of the job and carefully supervised and followed to the final site clean-up. The procedures outlined in this plan are the minimum requirements necessary to maintain a safe and clean work area. The following are some general rules:

- All passage ways, stairways, and gangways are to be kept free of materials, supplies, and obstructions of every kind.
- Materials and supplies shall be kept away from the edges of hoist ways, stairways, and floor openings.
- Keep materials orderly. Prevent piles from falling or shifting. Tie down or support if necessary.
- Shavings, dust, scraps, oil, and grease must not accumulate.
- Refuse piles must be removed as soon as possible.
- Remove or clinch all nails in old lumber. Form and scrap lumber with protruding nails and other debris will be kept clear from work areas. Remove combustible scrap and debris at regular intervals.
- Oil, grease, and water spills must be cleaned up right away. A delay could cause an accident.
- Flammable liquids should be used only in small amounts, and containers should be clearly labeled and stored in protected safety cans.
- Store oily wiping rags in covered metal containers or dispose of them safely.
- Keep portable heating equipment away from combustible material.
- Welding and cutting operations should be closely supervised. Remove or shield nearby combustibles.
- At the end of each phase of work, return all tools and excess material to proper storage. Clean up all debris before moving on to the next phase. Each employee is responsible for keeping their work areas clean.

Remember that everyone at BELAIR has been given the authority to remove himself for herself from any suspected obstacle or danger.

JOB HAZARD ANALYSIS

Safety Hazard Identification and Control

Job hazard analysis is used to locate and report existing and potential hazards that have the potential to cause accidents. The procedure is used to detect potential hazards to the hazards can be corrected before an accident occurs. The hazard analysis procedure will be utilized to evaluate conditions on the job site as a part of pre-job evaluation. Forms to be used to assist in the analysis are attached.

A job hazard analysis procedure must be conducted for all jobs which have:

- A high injury potential
- A high loss severity potential
- Extreme working conditions
- A previous history of failure
- Regulatory requirements demanding its use

Monitoring of ongoing processes, with input from employees, is vital for acquiring necessary hazard information. It is the goal of this program to involve all employees in accident prevention and to encourage input from everyone involved in an effort to improve job safety.

Analysis and control of hazards follows identification. Utilization of appropriate equipment, personnel and procedures is critical in dealing with hazards that cannot be eliminated.

1. A JHA must be completed by and PM and Field Rep. during the bid process.
2. All JHA`s must identify specific or unusual hazards that we could encounter on a job site. An example: Had we identified early on that we would be frequently changing buckets at a Colorado project, we could have set up special inspections to ensure a proper bucket connection and added more tool box talks to avoid the serious injury that occurred.
3. Prior to the start of a job, the PM, GS and FM need to meet at the site for a reading of the JHA and a tool box talk on any issues for that site.
4. Weather conditions on a job should prompt a special tool box talk. Our JHA could show possible weather changes and train on what to do about it or simply stop for a short hazard specific talk.
5. JHA should be reviewed each time the following happens. A JHA blank can be found on the common O drive.
    A. Manpower changes.
    B. Scope of work changes.
6. The JHA should be used in conjunction with Belair`s dig checklist, prior to the start of a project.
7. It is the committees opinion that the lines of communication will remain open using the JHA process making our jobsites safer and more profitable to be a Win-Win situation for all.

LOCATES PROCEDURES

- The PM and FM need to work more closely together on locates.
- A plan needs to be marked up by both the PM and FM together. This is am FM responsibility.
- Site meets are best.
- Clues as to undergrounds need to be identified, before a project is started, not after. A gas meter here, electrical transformer there, etc.
- A copy of the locate ticket needs to be placed into our start-up packets and kept on the site.
- Locates refresher calling is the responsibility of the FM.
- Colors for the utilities need to be utilized on the plan.
- FM's can get help with A/I Form and attachments from the Safety Dept.
- A signed buy-in sheet is needed from M and M for the cover of our new Safety Plan, in order to show they are committed to the safety program.
- A website is desired, based upon outside suggestions. Other's have them.
- 10' or more is required by Belair for high-profile lines. (A life taker, or business taker) Like a large electrical or fiber optic.
- Photos need to be taken.
- Do not abuse emergency locates.
- 911 must be called in case of a gas hit in MN.

1. The Project Manager (PM), when starting a project, is responsible to initiate the 1st call to the State Locates Coordinator (LC). The PM has the option to delegate this duty to the Field Manager. The LC will be the only caller to the one-call center, except as absolutely necessary, deemed by the LC.
   A. The PM, & FM visits with the LC and they pore over and mark up a current site-plan together.

B. Site meets are best and need to be initiated and attended by the PM and the Field Manager (FM), Utility Locator (UL), Locates Coordinator (LC) and Property Owner/Representative (POR), where possible.

C. The LC needs to quiz the PM to see if there are any private undergrounds at the site. All parties need to look for clues; especially around schools, old business's with two (2) or more bldgs on the property. A gas meter, a phone pole with a lit sign above it. An electric pedestal or meter. A manhole. A water valve. etc.

D. The PM and all people at the site are responsible to look for overhead lines, know the State laws and abide by them, in that regards. All need to know that a protective cover on a wire is not electrocution protection, but merely a hi-visibility reference point.

2. Locate tickets must be given to the FM, by the PM, via the start-up packet. A hard copy of the locates ticket shall be on site at all times.

3. LC to maintain file/archives for all One-Call tickets, for future reference.

4. The FM is responsible to contact the LC, in a timely fashion, for all State required locate refreshers. It will vary from State to State, but is typically every 10 days.

5. FM is responsible for the marking up all Belair site plans with industry standard colors. They are also responsible to notify all workers that enter that site, about any and all underground and overhead utilities. This must be done on a daily basis or sooner, where necessary.

It also includes the responsibility of a FM advising other new operators about the underground dangers at the site. When a FS is not present at a project, he or she needs to delegate all responsibilities to his lead person. This needs to be done on a task basis.

Color Code:

- Red = Electrical
- Orange= Phone
- Cable or Fiber Optic
- Pink =Survey
- Green Sanitary Sewer
- Blue = Water
- Gas = Yellow
- White = Construction Limits (*Mandatory where practical in MN.*)

6. Working closer then 10` * around a high- profile line will require a trained watchdog from either Belair or a utility company.

(A high- profile line is defined as a utility with the potential to be a business taker or a life taker.)

* The 10` dimension may be even greater if deemed so by a power company.

Example; a high voltage wire needs more distance. A large fiber optic cable may also need more distance.

7. Colored photos are required by each FM. He or she needs to make sure that they capture a landmark in the picture that would be easily understood when re-viewing the picture in the future. Date and orient each photo to north-south. All photos need to be turned in to the Safety Administrator to be filed with the A/I report.

8. Emergency locates need to be reserved for actual emergencies. Like a water or sewer main break. Locators, under those conditions, are required to show up in 2 hours, after the call. Please check with your specific State on that, as the rules may vary from State to State.
Fines can be levied by the MN. Office of Pipeline Safety for miss-use of emergency locates calls. So be sure that it is a real emergency before you call.

9. Contact your FM for all gas hits. FM will call 911, and then report the situation to the LC and the facility owner. (It is a law in MN. to call 911 for all gas hits.)

10. For hits, other then gas hits, contact your field or office Safety team who will assist with your A/I report and or 1st report of Injury.

11. Lastly, there needs to be some sort of a "buy-in" or "sign-off" sheet from the GM and OM`s, so that they will become more committed to the support and backing of the LC in each State.
With that solid GM/OM committement in place, our Safety program will continue to raise its bar, largely in part through upper management's backing. Also, with GM/OM support, it will appear to others that Safety is a high priority, at Belair. MPM is responsible for the DOO`s and GM`s buy-in.

Also, we need to change our Web site to include safety. Not just names at the bottom of our site. We need to talk about lost days, awards, no citations and a low Mod Rate. This is just another way that we can show our clients that we have a serious eye on Safety.....We think our clients expect that much.

MATERIALS HANDLING

Approximately ninety percent (90%) of all industrial activity involves some type of materials handling. Approximately twenty-five percent (25%) of all compensable accidents arise from materials handling.

The following basic approaches should be used to simplify materials handling and help prevent accidents:

- Locate materials as close to the site of work as possible.
- Stack or store materials in such a manner as to prevent sliding or collapsing.
- Use mechanical lifts or high lifts whenever possible. Ensure cranes or other equipment used for lifting are regularly inspected.
- Store flammables and oxidizers in separate non-smoking areas and flammable gases away from combustible materials.
- Chock tractor trailers during loading and unloading.

Regulations (Standards - 29 CFR)
Material handling equipment. - 1926.602

Regulations (Standards - 29 CFR) - Table of Contents

• Part Number:	1926
• Part Title:	Safety and Health Regulations for Construction
• Subpart:	O
• Subpart Title:	Motor Vehicles, Mechanized Equipment, and Marine Operations
• Standard Number:	1926.602
• Title:	Material handling equipment.

1926.602(a)

Earthmoving equipment; General.

1926.602(a)(1)

These rules apply to the following types of earthmoving equipment: scrapers, loaders, crawler or wheel tractors, bulldozers, off-highway trucks, graders, agricultural and industrial tractors, and similar equipment. The promulgation of specific rules for compactors and rubber-tired "skid-steer" equipment is reserved pending consideration of standards currently being developed.

1926.602(a)(2)

Seat belts.

1926.602(a)(2)(i)

Seat belts shall be provided on all equipment covered by this section and shall meet the requirements of the Society of Automotive Engineers, J386-1969, Seat Belts for Construction Equipment. Seat belts for agricultural and light industrial tractors shall meet the seat belt requirements of Society of Automotive Engineers J333a-1970, Operator Protection for Agricultural and Light Industrial Tractors.

1926.602(a)(2)(ii)

Seat belts need not be provided for equipment which is designed only for standup operation.

1926.602(a)(2)(iii)

Seat belts need not be provided for equipment which does not have roll-over protective structure (ROPS) or adequate canopy protection.

..1926.602(a)(3)

1926.602(a)(3)

Access roadways and grades.

1926.602(a)(3)(i)

No employer shall move or cause to be moved construction equipment or vehicles upon any access roadway or grade unless the access roadway or grade is constructed and maintained to accommodate safely the movement of the equipment and vehicles involved.

1926.602(a)(3)(ii)

Every emergency access ramp and berm used by an employer shall be constructed to restrain and control runaway vehicles.

1926.602(a)(4)

Brakes. All earthmoving equipment mentioned in this 1926.602(a) shall have a service braking system capable of stopping and holding the equipment fully loaded, as specified in Society of Automotive Engineers SAE-J237, Loader Dozer-1971, J236, Graders-1971, and J319b, Scrapers-1971. Brake systems for self-propelled rubber-tired off-highway equipment manufactured after January 1, 1972 shall meet the applicable minimum performance criteria set forth in the following Society of Automotive Engineers Recommended Practices:

Self-Propelled Scrapers..... SAE J319b-1971.
Self-Propelled Graders..... SAE J236-1971.
Trucks and Wagons..... SAE J166-1971.
Front End Loaders and Dozers.. SAE J237-1971.

1926.602(a)(5)

Fenders. Pneumatic-tired earth-moving haulage equipment (trucks, scrapers, tractors, and trailing units) whose maximum speed exceeds 15 miles per hour, shall be equipped with fenders on all wheels to meet the requirements of Society of Automotive Engineers SAE J321a-1970, Fenders for Pneumatic-Tired Earthmoving Haulage Equipment. An employer may, of course, at any time seek to show under 1926.2, that the uncovered wheels present no hazard to personnel from flying materials.

1926.602(a)(6)

Rollover protective structures (ROPS). See Subpart W of this part for requirements for rollover protective structures and overhead protection.

..1926.602(a)(7)

1926.602(a)(7)

Rollover protective structures for off-highway trucks. The promulgation of standards for rollover protective structures for off-highway trucks is reserved pending further study and development.

1926.602(a)(8)

Specific effective dates-brakes and fenders.

1926.602(a)(8)(i)

Equipment mentioned in paragraph (a)(4) and (5) of this section, and manufactured after January 1, 1972, which is used by any employer after that date, shall comply with the applicable rules prescribed therein concerning brakes and fenders. Equipment mentioned in paragraphs (a) (4) and (5) of this section, and manufactured before January 1, 1972, which is used by any employer after that date, shall meet the applicable rules prescribed herein not later than June 30, 1973. *It should be noted that, as permitted under* 1926.2, employers may request variations from the applicable brakes and fender standards required by this subpart. Employers wishing to seek variations from the applicable brakes and fenders rules may submit any requests for variations after the publication of this document in the Federal Register. Any statements intending to meet the requirements of 1926.2(b)(4), should specify how the variation would protect the safety of the employees by providing for any compensating restrictions on the operation of equipment.

1926.602(a)(8)(ii)

Notwithstanding the provisions of paragraphs (a)(5) and (a)(8)(i) of this section, the requirement that fenders be installed on pneumatic-tired earthmoving haulage equipment, is suspended pending reconsideration of the requirement.

..1926.602(a)(9)

1926.602(a)(9)

Audible alarms.

1926.602(a)(9)(i)

All bidirectional machines, such as rollers, compacters, front-end loaders, bulldozers, and similar equipment, shall be equipped with a horn, distinguishable from the surrounding noise level, which shall be operated as needed when the machine is moving in either direction. The horn shall be maintained in an operative condition.

1926.602(a)(9)(ii)

No employer shall permit earthmoving or compacting equipment which has an obstructed view to the rear to be used in reverse gear unless the equipment has in operation a reverse signal alarm distinguishable from the surrounding noise level or an employee signals that it is safe to do so.

1926.602(a)(10)

Scissor points. Scissor points on all front-end loaders, which constitute a hazard to the operator during normal operation, shall be guarded.

1926.602(b)

Excavating and other equipment.

1926.602(b)(1)

Tractors covered in paragraph (a) of this section shall have seat belts as required for the operators when seated in the normal seating arrangement for tractor operation, even though back-hoes, breakers, or other similar attachments are used on these machines for excavating or other work.

1926.602(b)(2)

For the purposes of this subpart and of Subpart N of this part, the nomenclatures and descriptions for measurement of dimensions of machinery and attachments shall be as described in Society of Automotive Engineers 1970 Handbook, pages 1088 through 1103.

..1926.602(b)(3)

1926.602(b)(3)

The safety requirements, ratios, or limitations applicable to machines or attachment usage covered in Power Crane and Shovel Associations Standards No. 1 and No. 2 of 1968, and No. 3 of 1969, shall be complied with, and shall apply to cranes, machines, and attachments under this part.

1926.602(c)

Lifting and hauling equipment (other than equipment covered under Subpart N of this part).

1926.602(c)(1)

Industrial trucks shall meet the requirements of 1926.600 and the following:

1926.602(c)(1)(i)

Lift trucks, stackers, etc., shall have the rated capacity clearly posted on the vehicle so as to be clearly visible to the operator. When auxiliary removable counterweights are provided by the manufacturer, corresponding alternate rated capacities also shall be clearly shown on the vehicle. These ratings shall not be exceeded.

1926.602(c)(1)(ii)

No modifications or additions which affect the capacity or safe operation of the equipment shall be made without the manufacturer's written approval. If such modifications or changes are made, the capacity, operation, and maintenance instruction plates, tags, or decals shall be changed accordingly. In no case shall the original safety factor of the equipment be reduced.

1926.602(c)(1)(iii)

If a load is lifted by two or more trucks working in unison, the proportion of the total load carried by any one truck shall not exceed its capacity.

..1926.602(c)(1)(iv)

1926.602(c)(1)(iv)

Steering or spinner knobs shall not be attached to the steering wheel unless the steering mechanism is of a type that prevents road reactions from causing the steering handwheel to spin. The steering knob shall be mounted within the periphery of the wheel.

1926.602(c)(1)(v)

All high lift rider industrial trucks shall be equipped with overhead guards which meet the configuration and structural requirements as defined in paragraph 421 of American National Standards Institute B56.1-1969, Safety Standards for Powered Industrial Trucks.

1926.602(c)(1)(vi)

All industrial trucks in use shall meet the applicable requirements of design, construction, stability, inspection, testing, maintenance, and operation, as defined in American National Standards Institute B56.1-1969, Safety Standards for Powered Industrial Trucks.

1926.602(c)(1)(vii)

Unauthorized personnel shall not be permitted to ride on powered industrial trucks. A safe place to ride shall be provided where riding of trucks is authorized.

1926.602(c)(1)(viii)

Whenever a truck is equipped with vertical only, or vertical and horizontal controls

elevatable with the lifting carriage or forks for lifting personnel, the following additional precautions shall be taken for the protection of personnel being elevated.

1926.602(c)(1)(viii)(A)

Use of a safety platform firmly secured to the lifting carriage and/or forks.

..1926.602(c)(1)(viii)(B)

1926.602(c)(1)(viii)(B)

Means shall be provided whereby personnel on the platform can shut off power to the truck.

1926.602(c)(1)(viii)(C)

Such protection from falling objects as indicated necessary by the operating conditions shall be provided.

1926.602(d)

Powered industrial truck operator training.

Note: The requirements applicable to construction work under this paragraph are identical to those set forth at §1910.178(l) of this chapter.

[44 FR 8577, Feb. 9, 1979; 44 FR 20940, Apr. 6, 1979, as amended at 58 FR 35183, June 30, 1993; 63 FR 66274, Dec. 1, 1998]

MOBILE EARTH-MOVING EQUIPMENT POLICY

In compliance with MN Rules, Table of Chapters, Table of Contents for Chapter 5207.1000 Employees must understand the dangers and risks associated with *Mobile Earth Moving Equipment*. Our goal is to reduce the risk of accident and death.

Definition of Mobile Earth Moving Equipment: Bulldozers, motor graders, scrapers, loaders, skid-steer loaders, compaction equipment, backhoes, end dumps, side dumps, and dump trucks.

Application:

Equipment: Earth moving, building, road construction, and demolition

People:

Operators, exposed employees, grade checkers, grade persons, rod persons, stake hops, stake jumpers, and blue toppers

Training Shall Be Provided:

- Safe work procedures
- Recognize unsafe conditions
- Recognize hazardous conditions
- Done by competent individuals with:
- knowledge, training, experience and demonstrated ability to identify existing and predictable hazards related to mobile earth moving equipment.

Belair Training Program Requirements:

- Safe work procedures
- Recognition of unsafe
- Recognition of hazards
- Communication methods
- Visibility requirements
- Operator requirements
    - transmission in neutral
    - setting parking brake
    - identification of blind spots
    - daily inspections
    - safe equipment operation
        - backing
        - maintenance
        - parking
        - operating
        - loading
    - working around overhead and underground utilities per 29CFR 1926.600 (a)(6)

        - hazards due to changing conditions
    - Training Shall Be Done:
        - before start of work
        - continuous throughout year

High Visibility Personal Protective Equipment

- All ground workers must wear a high visibility warning vest**. Retro reflective material is required after dark. Belair will furnish one to each employee.

Equipment

- Backup alarms or signal people need to be utilized as necessary
- Two headlights are required during low light conditions. External lighting is an acceptable alternative.

Contract Responsibility

- Exposure by Belair's work to other contractors will promote a safety awareness meeting between parties.
- All safety meetings shall be documented and kept for the duration of project including:
    - date
    - attendees
    - summary

MN RULE 5207.1000 OPERATION OF MOBILE EARTH-MOVING EQUIPMENT

(Use MN Rule as minimum guideline for all four states)

Subpart 1. Scope. This part identifies minimum safety requirements for the safe operation of mobile earth-moving equipment used for earth moving, building, or road construction or demolition, including, but not limited to, bulldozers, motor graders, scrapers, loaders, skid-steer loaders, compaction equipment, backhoes, end dumps, side dumps, and dump trucks. This part pertains to operators of the equipment and exposed employees, including, but not limited to, grade checkers, grade persons, rod persons, stake hops, stake jumpers, and blue toppers working in the area.

Subp. 2. Training requirements.

A. Mobile earth-moving equipment operators and all other employees working on the ground exposed to mobile earth-moving equipment shall be trained in the safe work procedures pertaining to mobile earth-moving equipment and in the recognition of unsafe or hazardous conditions.

B. Training programs shall be developed and instructed by competent individuals who have knowledge, training, experience, and the demonstrated ability to identify existing and predictable hazards related to the subject matter.

C. Training programs must include the following elements:

(1) safe work procedures on how to approach mobile earth-moving equipment, whether in use or idling, including:

(a) visual, voice, or signal communication that shall be made with the operator prior to approaching earth-moving equipment;

(b) maintaining one's visibility to the operator while approaching the equipment; and

(c) operator responsibilities, such as placing the transmission in neutral, setting the parking brake, and indicating that it is safe to approach the equipment;

(2) identification of the operator's blind spots on various earth-moving equipment used;

(3) instruction for mobile earth-moving equipment operators in conducting daily equipment inspections according to the manufacturer's recommendations, and checking the area around the equipment for a clear path prior to beginning operation;

(4) safe operating procedures of equipment, including traveling, backing, parking, loading for transport, maintenance, and operation;

(5) safe work procedures when working around or adjacent to overhead or underground utilities, as described in Code of Federal Regulations, title 29, parts 1926.600(a)(6) and 1926.651(b); and

(6) additional hazards that could be created by changing conditions.

Subp. 3. Training frequency. Employees shall be trained initially before beginning work that exposes them to mobile earth-moving equipment. Employee training records shall be retained by the employer for the duration of the project.

Subp. 4. High visibility personal protective equipment.

A. Each employee working on the ground who is exposed to mobile earth-moving equipment shall be provided with and required to wear a high visibility warning vest or other high visibility garments. A high visibility garment is defined

as being a Performance Class 2 garment or greater as specified by ANSI/ISEA Standard 107-2004.

B. High visibility apparel, as described in item A, shall comply with the specifications in part 5207.0100.

Subp. 5. Equipment requirements.

A. All mobile earth-moving equipment shall comply with Code of Federal Regulations, title 29, part 1926.602(a)(9)(ii) for back-up alarms or signal persons if applicable.

B. When mobile earth-moving equipment is operated during times of darkness or low light conditions, the equipment, if designed to function equally in both forward and reverse directions, such as compaction equipment, bulldozers, motor graders, loaders, and skid-steer loaders, shall be equipped with at least two headlights for forward travel and adequate rear lights for reverse travel unless other adequate lighting is provided.

Subp. 6. Contractor responsibility.

A. If the mobile earth-moving equipment contractor exposes other contractor's employees to the hazard of mobile earth-moving equipment, the controlling employer, such as general contractor or construction manager, for the project shall coordinate a joint contractor-employee safety awareness meeting between contractors and employees on site. Discussion elements for employee awareness training can be found in subparts 2, item C; and 4.

B. The employee safety awareness meeting shall be documented, identifying when the meeting was held and who attended, including a brief summary of what was reviewed. Documentation shall be retained for the duration of the project.

Subp. 7. Electrical work. For work within the flash protection boundary as defined by NFPA 70E Part II 2-1.3.3.2, high visibility garments constructed of material that complies with NFPA 70E may be worn.

Subp. 8. [Repealed, 31 SR 517]

STAT AUTH: MS s 182.655

HIST: 24 SR 519; 25 SR 1241; 31 SR 517 *Current as of 10/30/06*

NOISE PROTECTION

Noise is defined as unwanted sound. Noise can cause:

- Sudden traumatic hearing loss.
- Long-term, more slowly occurring hearing loss which may be irreversible.
- Disruption of communication and masking of warning devices and alarms.
- Increased stress levels and effects on the cardiovascular and nervous systems.

OSHA regulations generally apply to 8-hour exposures, and 85 decibels is the action level for a Hearing Conservation Program.

Where feasible, noise exposure will be controlled by engineering controls. Where high noise levels are encountered and where engineering controls are not feasible (90 decibels or above), hearing protection must be used to prevent noise-induced hearing loss.

When sound level measurements are not available, a rule of thumb for determining whether you are in a hazardous noise area that requires hearing protection is if you have to talk loudly at one foot, or shout at arms length, to be heard.

Some sources of noise on hazardous materials, construction, and industrial sites that can cause hearing damage are compressor motors, drill rig engines, hammer blows, compressed air, compressed water, and heavy equipment. This list is not all inclusive.

> Example: A D6 Cat gives off an average of 85 decibels; more under certain conditions. Therefore, it is a good habit to wear hearing protection.

Hearing protection consists of either disposable ear plugs or ear muffs. Extra hearing protection devices are available from the dispenser located in the BELAIR shop, or from the Safety Director.

OSHA INSPECTION PROCEDURES

Occasional OSHA inspections are a part of construction. Violations can be cited when the OSHA inspector and area director determines that a contractor knew unsafe conditions existed. Each individual violation can result in a significant fine. Here are suggestions for demonstrating compliance and minimizing the risk for receiving citations and the accompanying fines:

- Ask the reason for the inspection, whether it is a general scheduled visit, the result of an employee complaint, referral or media attention. A general inspection should be made only if there was no inspection for the past 90 days. If there was an employee complaint, ask whether it was formal (written or signed) or informal (via phone). Ask for copies of any complaints and the applicable standard.

- Notify your office when an inspector arrives. If the Safety Director or State Safety Coordinator is available, ask that the inspection be delayed until the Safety Director or State Safety Coordinator arrives on the job. Normally inspectors will delay inspections for an hour or so. A competent company representative should accompany the inspector.

- Do not volunteer information, engage in long talks with an inspector or admit to a violation. Anything you say can be held against you. Do not ask if something is or is not in compliance. Point out safety measures you have instituted.

- Be sure subcontractors are present during inspection of their work.

- Keep job sites clean. An inspector will cite you for allowing workers to work in unsafe conditions caused by poor housekeeping.

- Do not admit the existence of a violation when answering an inspector's questions. If the inspector asks, "How much time do you need to abate this violation?" Make it clear in your response that you admit to no violation.

- If an inspector notices an unguarded floor opening, point out the many guarded openings. If an inspector sees a worker without a hard hat, indicate the many workers who are wearing their hard hats.

- When an inspector photographs what he thinks is an unsafe condition, photograph the area from a wide angle that may show safe conditions. A pile of debris looks worse in a close-up than in a wide shot that shows a clean floor with a small amount of debris in a corner.

- An inspector may speak to employees at the job site for three or four minutes, but you need not allow long discussions. Inspectors have no right to disrupt production.

- Expect a follow-up inspection if there is a serious, repeat, failure to abate, willful or egregious citation.

- To contest a citation, file a letter within 20 working days after the citation is made. Otherwise, you are presumed to admit guilt. The case will be assigned to an administrative law judge. If you are unhappy about the judge's decision, you can appeal to the OSHA Review Commission, then to an appellate court.

- You are also entitled to an informal conference after a citation is issued. The primary purpose is for OSHA to provide you with an explanation of each citation and the reason for each fine. Sometimes fines and citations may be adjusted at the informal conference.

OSHA INSPECTION OUTLINE

The following is an outline of what to do when you are involved in an OSHA compliance inspection:

- Notify your Superintendent and the Safety Director or State Safety Coordinator when OSHA arrives. If possible, wait for the Safety Director or State Safety Coordinator to accompany inspection.

- See the inspector's credentials and record their name, I.D. number and name of their supervisor.

- Opening conference – learn the purpose and scope of the inspection. Ask for copies of the applicable safety and health standard as well as a copy of the complaint, if any.

- Be sure your OSHA poster is up and your hazardous communication program is on hand.

- Do not disclose any information, which can be used against you and do not ask the inspector if something is or is not in compliance. Be polite, yet firm. Do not hesitate to boast about the safety precautions taken on the project.

- Walk around inspection – a supervisory employee should accompany the inspector. The inspector has the right to consult with a reasonable number of employees concerning safety and health matters. Take photos of the same items photographed by the inspector. They can talk with your employees in private and ask for their home phone numbers (workers are not obliged to discuss anything with OSHA).

- Make a note of every violation that the inspector points out. Correct, if possible, all violations on the spot and be sure the inspector's records reflect the corrections.

- Note the amount of time the inspector was on your project.

- Subcontractors should be present during inspection of their work.

- Closing conference – go over every item for which you will be cited. Check the item against the standard. Ask for a complete explanation, if it is not absolutely clear. Should you disagree with the inspector's position, politely yet firmly point out your opinion.

- ***Do not discuss the fine!*** This could be construed as a bribe.

- Type of citations – Other, Serious, Repeat, Failure to Abate, Willful and Egregious. Expect a follow-up inspection if your citation is classified Serious, Repeat, Failure to Abate, Willful or Egregious.

OSHA INSPECTION REPORT

Project Name: _____ Project Number: _____
Project Superintendent: _____
Project Safety Coordinator: _____
Inspection Dates and Times: _____

1. Pre-inspection

   a. Person and Title contracted by OSHA

   _____

   b. Did inspector show his credentials? Yes No
   Comments:

   _____
   _____(attach business card)

   c. Name of OSHA inspector(s) and their office:

   _____
   _____

   d. What was the reason for the inspection:
      1. Employee Complaint? Yes No
      (If yes, attach copy. OSHA is required by law to provide a copy).
      2. Scheduled Inspection? Yes No
      3. Other (comments):

   _____
   _____
   _____

2. Opening Conference

   a. Name of contractors, their representatives and titles (or attach list):

   _____
   _____
   _____
   _____
   _____

3. Inspection Tour

   a. Who from Belair Excavating accompanied the OSHA Inspector?

   _____
   _____
   Who else joined the OSHA Inspection Group?

   _____
   _____

   b. Did the Inspector take any photographs? Yes No
   Did Belair Excavating take any photographs? Yes No

c. Were safety hazards and unsafe acts observed? Yes No
If yes, what were they and who had responsibility?

_____

_____

_____

d. Was immediate corrective action taken? Yes No
If no, comment:

_____

_____

e. Special comments regarding inspection:

_____

_____

4. Closing Conference

a. Did OSHA hold a closing conference with Belair Excavating? Yes No
With other contractors? Yes No

b. Names of contractors, their representatives and titles (or attach *list*)

_____

_____

_____

c. What alleged OSHA violations were discussed and with whom? (or attach *list*)

_____

_____

_____

Note: At the Closing Conference, it is very important to establish which citations rightfully belong to Belair Excavating versus other companies. When citations are incorrectly assigned, Belair Excavating is forced to spend unnecessary time and money contesting them.

_____

Representative Date

The OSHA Inspection Report is to be started at the beginning of and completed immediately after an OSHA inspection.

Copies must be distributed to: Belair Excavating Vice President, Project Manager and Safety Director.

PERSONAL PROTECTIVE EQUIPMENT

Construction is performed in a dangerous work environment. Steps need to be taken to protect workers and to prevent work-related injuries. The equipment used is called "Personal Protective Equipment" or PPE. OSHA has several requirements for the selection, use and maintenance of PPE. The following guidelines address personal protective equipment.

HAZARD ASSESSMENT & TASK SAFETY AWARENESS

OSHA requires contractors to assess work areas for possible hazards that would require the use of PPE. If a hazard or potential hazard exists, then the contractor must select the appropriate PPE and ensure that it's onsite and used when work begins.

When a Hazard Assessment is performed, it must be recorded in writing and turned into your State Safety Coordinator.

WORK TRAINING

Before an employee is allowed on a construction site requiring any PPE, the contractor is required by OSHA to train the worker in the following:

- When PPE is to be used
- What type of PPE is necessary
- How the PPE is to be worn/used
- What the PPE's limitations are
- What care is required for the PPE
- What choices of PPE are available

The training is required by OSHA to be recorded in writing. This training certification must include as a minimum:

- The names of the employee
- The date(s) of training
- The type of PPE being trained on

The type of PPE used in construction can be grouped into the following categories:

- Head protection (hard hats)
- Eye and face protection
- Ear protection
- Respiratory protection
- Torso protection
- Arm and hand protection
- Foot and leg protection

These types of PPE are further explained below. Knowledge of the types, styles and capabilities of all PPE is necessary for its effective use.

HEAD PROTECTION

Statistics show that most head injuries occur when performing ordinary day-to-day work activities. Also, most head injuries occurred when no head protection was required, or even discussed between the work and management.

Approved hard hats are required for all Belair Excavating employees 100% of the time when on Belair Excavating job sites. Hard hats need to comply with ANSI standards Z89.2-1971 (electrical) if purchased before July 5, 1994. All other hard hats need to comply with ANSI Z89.1-1986, or later. These standards are stamped on the hard hat along with the manufacturer's name and one of the following classifications.

- Class A – General Service

  Hard hats under this classification are the typical type seen on construction sites. Used primarily for impacts, the plastic styles have some limited electrical protection.

- Class B – Utility Service

  Hard hats under this classification are used for impacts. However, they also offer protection against high voltage shock and burns.

In a typical construction situation (as opposed to welding, steel erection, or other specialized activity), the hard hat should not be worn backwards, unless specifically rated for this use by the manufacturer.

Also avoid cleaning with thinners, or other solvents since a reaction could occur that could reduce the overall strength. For the same reason, hard hats should not be stored under a vehicle's window glass since damage can occur from sunlight or extreme heat.

SCRUBBER POLICY

Any and all machines, used by Belair or its affiliates, in buildings or confined spaces, shall be equipped with a scrubber. These will be designed to meet OSHA and NIOSH standards. Machines without approved scrubbers can only be used in open and non-confined spaces, or areas that are monitored and documented to meet OSHA and NIOSH guidelines. Enforcement will be handled through the Belair Citation Program.

SHOP AND FACILITY SAFETY

Good housekeeping at all Belair facilities and shops helps to eliminate accidents and upholds our long standing neatness and cleanliness image to our stakeholders. When our facilities are clean, they cannot harbor hazards. Maintaining our high neatness and cleanliness standards in the shop and at all Belair facilities is a requirement and the responsibility of everyone, not just the shop workers.

1. **Work Zones**
   There are two zones set up in the shop, the public area and the private mechanics area The private area is a restricted area and cannot be entered without permission and safety glasses. They should be marked in yellow on the shop floor.

2. **Housekeeping**
   Trash containers are provided for all to use. Please assist our shop personnel with waste disposal. It is very important for everyone to use these containers and not expect others to pick up after you. This will also help to keep hazards to a minimum.
   Loose items on the floor, such as brooms, chains and debris, are considered hazards. It is your duty to assist and remove hazards from the floor in order to prevent accidents. This includes but is not limited to: Oil on the floor, chords in a heap, and other tripping hazards on the floor. Do not wait for others to remove these.
   Hazard removal and/or cleaning needs TO BE DONE RIGHT TO PREVENT INJURY. Safety is everyone's responsibility. If something "feels wrong", it usually is. Our main emphasis should always be to locate and eliminate hazards before they turn in to an accident.

3. **Lockout / Tag-out**
   This must be done at all times. This means that cabinets, fuel stations and electrical boxes must be locked or tagged out when not in use. Mark "Do Not Use", when there is a possibility that it could harm others, if accidentally activated or used.

4. **PPE (Personal Protective Equipment)**
   Must be worn at all times. This includes earplugs, safety glasses, body protection, splash shields, welding masks, gloves, and back lifting devises, etc. When cutting, welding, or grinding, always use face and clothing protection. *This is your responsibility, not your supervisors.*

5. **Machine Guards**
   All machine guards must be factory correct and secured with proper tolerances as recommended by the manufacturer.

6. **Fire Control**
   Whenever you are "working hot" such as welding or grinding, a properly rated fire extinguisher needs to be placed within 25 feet of the work area. Oxygen tanks must be secure and stored a minimum of 10 feet from heat sources, grinders, and electrical panels.

7. **Material Safety Data Sheets**
   These forms are maintained in the shop area near our "Right to Know Station". They are available for all to review before working with certain chemicals, glues, oils, anti-freezes, and other known toxics, acids or chemicals.

8. **Labels and Placards**
   All shop and field combustibles, acids and toxics shall be properly identified with a label or placard.

9. **Barricades, Caution tape, Signage**
   These devices shall be used around all hazards that cannot immediately be removed from service.

10. **Discipline Process**
    Breach of these rules will be handled through our standard citation program.

SCAFFOLD SAFETY

Why Is Scaffold Safety Important?

When OSHA revised its Scaffolds standard in 1996, Bureau of Labor Statistics studies showed that 25 percent of workers injured in scaffold accidents had received no scaffold safety training, and 77 percent of scaffolds were not equipped with guardrails.

OSHA estimates that informed employers and workers, in compliance with correct safety standards, can save as many as 50 lives and prevent 4,500 accidents every year.

What Is a Scaffold?

A scaffold is defined as an elevated, temporary work platform. There are three basic types of scaffolds:
Supported scaffolds, which consist of one or more platforms supported by rigid, load- bearing members, such as poles, legs, frames, outriggers, etc.
Suspended scaffolds, which are one or more platforms suspended by ropes or other non-rigid, overhead support.
Other scaffolds, principally manlifts, personnel hoists, etc., which are sometimes thought of as vehicles or machinery, but can be regarded as another type of supported scaffold.

Common Hazards Associated with All Scaffolds
Falls from elevation, due to lack of fall protection;
Collapse of the scaffold, caused by instability or overloading;
Being struck by falling tools, work materials, or debris; and
Electrocution, principally due to proximity of the scaffold to overhead power lines.
(These hazards will be addressed within the two specific groups below.)

Who Uses Scaffolds

Workers on scaffolds can be divided into two groups:
Erectors/Dismantlers
Users

SMALL TOOL AND EQUIPMENT SAFETY

Tool and Equipment Use

- Keep all tools and materials away from the edge of scaffolds, platforms, shaft openings, etc.
- Do not use tools with split, broken or loose handles.
- Have tools with burred or mushroomed heads dressed. Keep tools sharp and carry in a container, not in your pocket.
- Know the correct use of hand and power tools before using the tool for the job. Make sure the right tool for the right job is used.
- Only qualified personnel should operate and service power tools, vehicles and other machinery.
- Before starting machinery, open valves, switches, etc. and check the safety of workmen in the surrounding area. Have all safety guards attached.
- Never adjust or repair machinery while it is in motion. "Lock out" when maintenance is required.
- Operate machinery and vehicles within rate capacity and at safe speeds.
- Report defective tools or machinery to the supervisor immediately.
- Never point an air hose at anyone or use it to clean clothing.
- Be sure you have a clear area behind you before swinging a sledgehammer or other tools and materials.
- Have electrical power tools or equipment properly grounded.
- Do not use electrical power tools or equipment while standing in water.
- All electric power tools and extension cords should have rubber insulation. Damaged cords should be replaced, not repaired.
- Do not refuel running engines. Clean up spills before starting.

- Do not ride on vehicles or mobile equipment unless specifically authorized.
- Always remain seated when riding in authorized vehicles, unless the vehicle is designed for standing.
- Make sure engines in buildings are away from combustibles and that exhaust is properly ventilated.
- Open compressed gas cylinders slowly to avoid damage.
- Never use an air hose with pressure to empty gasoline drums.
- Never use circular saws with guard springs that are broken.
- Never wedge the guard open on a circular saw in order to maintain an open guard while making stakes.

Equipment Inspection and Maintenance

Proper inspection and maintenance of equipment is essential in order to reduce the potential of accidence occurrence. The following procedures should be followed:

- Planned preventive maintenance equipment must be performed in accordance with designated procedures and at scheduled intervals.
- Equipment found to have defects in any critical area that could affect the safe operation of the equipment should be tagged until proper repairs have been made.
- Required safety equipment and components must be maintained in an operative condition. Equipment system safety devices will not be bypassed or blocked off.
- Operator complaints on equipment condition are to be investigated and necessary corrective action taken prior to further use.

STAIRWAYS AND LADDERS

INTRODUCTION

A stairway or ladders must be provided at all worker points of access where there is a break in elevation of 19 inches or more and no ramp, runway, embankment or personnel hoist is provided.

When there is only one point of access between levels, it must be kept clear to permit free passage by workers. If free passage becomes restricted, a second point of access must be provided and used.

When there are more than two points of access between levels, at least one point of access must be kept clear.

When there are more than two points of access between levels, at least one point of access must be kept clear.

All stairway and ladder fall protection systems required by these rules must be installed and all duties required by the stairway and ladders rules must be performed before employees begin work that requires them to use stairways or ladders and their respective fall protection systems.

STAIRWAYS

Stairways that will not be a permanent part of a structure on which construction work is performed must have landings at least 30 inches deep and 22 inches wide at every 12 feet or less of vertical rise. Stairways must be installed at 30 degrees and no more than 50 degrees, from the horizontal.

Variations in riser heights or stair tread depth must not exceed ¼ in any stairway system, including any foundation structure used as one or more treads of the stairs. Where doors or gates open directly onto a stairway, a platform must be provided that extends at least 20 inches beyond the swing of the door. Metal pan landings and metal pan treads must be secured in place before filling.

All stairway parts must be free of dangerous projections such as protruding nails. Slippery conditions on stairways must be corrected before the stairs are used to reach other levels. Workers may not use spiral stairways that will not be a permanent part of the structure.

Except during construction of the actual stairway, stairways with metal pan landings and treads must not be used where the tread and/or landings have not been filled in with concrete or other material, unless the pans of the stairs and/or landings are temporarily

filled in with wood or other material. All treads and landings must be replaced when worn below the top edge of the pan.

Except during construction of the actual stairway, skeleton metal frame structures and steps must not be used (where treads and/or landings are to be installed at a later date), unless the stairs are fitted with secure temporary treads and landings. Temporary treads must be made of wood or other solid material and installed the full width and depth of the stair.

STAIR RAILS AND HANDRAILS

Stairways having four or more risers or rising more than 30 inches in height, whichever is less must have at least one handrail. A stair rail also must be installed along each unprotected side or edge. When the top edge of a stair rail system also serves as a handrail, the height of the top edge must be more than 3 inches nor less than 36 inches from the upper surface of the stair rail to the surface of the tread.

Winding or spiral stairways must be equipped with a handrail to prevent using areas where the tread width is less than 6 inches.

A stair rail installed after March 15, 191, must not be less than 36 inches in height.

Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members must be provided between the top rail and stairway steps of the stair rail system. Midrails, when used, must be located midway between the top of the stair rail system and the stairway steps.

Screens or mesh, when used, must extend from the top rail to the stairway step and along the opening between top rail supports. Intermediate vertical members, such as baluster, when used, must not be more than 19 inches (48 cm) apart. Other intermediate structural members, when used, must be installed so that there are no openings of more than 19 inches wide.

Handrails and the top rails of the stair rail systems must be capable of withstanding, without failure, at least 200 pounds of weight applied within 2 inches of the top edge in any downward or outward directions, at any point along the top edge. The height on handrails must not be more than 37 inches or less than 30 inches from the upper surface of the handrail to the surface of the tread.

The height of the top edge of a stair rail system used as a handrail must not be more than 37 inches or less than 36 inches from the upper surface of the stair rail system to the surface of the tread.

Stair rail systems and handrails must be surfaced to prevent injuries from punctures or lacerations and to keep clothing from snagging.

Handrails must provide an adequate handhold for employees to grasp to prevent falls.

The end of stair rail systems and handrails must be constructed to prevent dangerous projections, such as rails protruding beyond the end post of the system.

Temporary handrails must have a minimum clearance of 3 inches between the handrail and walls, stair rail systems, and other objects.

Unprotected sides and edges of stairway landings must be provided with standard 42-inch guardrail systems.

LADDERS

A double-cleated ladders or two or more ladders must be provided when ladders are the only way to enter or exit a work area for 25 or more employees or when a ladder serves simultaneous two-way traffic.

Ladder rungs, cleats and steps must be parallel, level and uniformly spaced when the ladder is in position for use.

Rungs, cleats and step stools must not be less than 8 inches apart, nor more than 12 inches apart, between center lines of the rungs, cleats and steps.

Rungs, cleats, and steps at the base section of extension trestle ladders must not be less than 8 inches or more than 18 inches apart, between center lines of the rungs, cleats and steps. The rung spacing on the extension section must not be less than 6 inches nor more than 12 inches.

Ladders must not be tied or fastened together to create longer sections unless they are specifically designed for such use. A metal spreader or locking device must be provided on each stepladder to hold the front and back sections in an open position when the ladder is being used.

When splicing side rails, the resulting side rail must be equivalent in strength to a one-piece side rail made of the same material. Two or more separate ladders used to reach an elevated work area must be offset with a platform or landing between the ladders, except when portable ladders are used to gain access to fixed ladders.

Ladder component must be surfaced to prevent injury from punctures or lacerations, and prevent snagging of clothing. Wood ladders must not be coated with any opaque covering, except for identification or warning labels, which may be placed only on one face of a side rail.

PORTABLE LADDERS

Non self-supporting and self-supporting portable ladders must support at least four times the maximum intended load; extra-heavy-duty type 1A metal or plastic ladders must sustain 3.3 times the maximum intended load. The ability of a self-supporting ladder to sustain loads must be determined by applying the load to the ladder in a downward vertical direction. The ability of a non-self-supporting ladder to sustain loads must be determined by applying the load to the ladder in a downward vertical direction when the ladder is placed at a horizontal angle of 75 ½ degrees.

The minimum clear distance between side rails for all portable ladders must be 11 ½ inches.

The rungs and steps of portable metal ladders must be corrugated, knurled, dimpled, coated with skid-resistant material, or treated to minimize slipping.

LADDER USAGE

When portable ladders are used for access to an upper landing surface, the side rails must extend at least 3 feet above the upper landing surface. The ladders must be secured and a grasping device, such as a guardrail, must be provided to assist workers in mounting and dismounting the ladder. A ladder extension must not deflect under a load that would cause the ladder to slip off its support.

Ladders must be maintained free of oil, grease and other slipping hazards.

Ladders must not be loaded beyond the maximum intended load for which they were built or beyond their manufacturer's rated capacity.

Ladders must be used only for the purpose for which they were designed.

Non-self supporting ladders must be used at an angle where the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length or the ladder. Wood job made ladders with spliced side rails must be used at an angle where the horizontal distance in one-eighth the working length of the ladder.

Fixed ladders must be used at a pitch no greater than 90 degrees from the horizontal, measured from the back of the side of the ladder.

Ladders must be used only on stable and level surfaces unless secured to prevent accidental movement.

Ladders must not be used on slipper surfaces unless secured or provided with slip-resistant feet to prevent accidental movement. Slip-resistant feet must not be used as a substitute for the care in placing, lashing or holding a ladder upon slipper surfaces.

Ladders placed in areas such as passageways, doorways, driveways or where they can be displaced by workplace activities or traffic must be secured to prevent accidental movement or a barricade must be used to keep traffic or activities away from the ladder.

The area around the top and bottom of the ladders must be kept clear.

The top of a non-self-supporting ladder must be placed with two rails supported equally unless it is equipped with a single support attachment.

Ladders must not be moved, shifted or extended while in use.

Ladders must have non-conductive side rails if they are used where the worker or the ladder could contact exposed energized electrical equipment.

The top and the top step of a stepladder must not be used as a step.

Cross-bracing on the red section of stepladders must not be used for climbing unless the ladders are designed and provided with steps for climbing on both front and rear sections.

Ladders must be inspected by a competent person for visible defects on a periodic basis and after any incident that could affect their safe use.

Single-rail ladders must not be used.

When ascending or descending a ladder the work must face the ladder.

Each worker must use at least one hand to grasp the ladder when moving up or down the ladder.

A worker on a ladder must not carry any object or load that could cause the worker to lose balance and fall.

TRAINING

Under the provisions of the standard employers must provide a training program for each employee using ladders and stairways. The program must enable each employee to recognize hazards related to ladders and stairways and to use proper procedures to minimize these hazards. For example, employers must ensure that a competent person in the following areas, as applicable trains each employee in:

- The nature of fall hazards in the work place.
- The correct procedures for erecting, maintaining and disassembling the fall protection system to be used.
- The proper construction, use placement and care in handling of all stairways and ladders.
- The maximum intended load carrying of ladders used.

UTILITIES

Before beginning work on a site or in/around facilities, buildings, or other structures that could be serve by or connected to utilities, a search must be initiated by placing a call to an official locating service. The utility search should ideally be conducted in association with someone familiar with the facility. The search is intended to identify any overhead, underground, above ground, or other potential safety hazards such as:

- Electrical lines and appliances
- Gas lines
- Pipelines
- Steam lines
- Water lines
- Sewer lines
- Pressured air lines
- Communication lines
- Fiber-optic lines
- Irrigation lines

The location of any utility that could pose a risk to workers must be communicated to all workers during site safety indoctrination. Utilities should be marked, or access otherwise restricted, to avoid the chance of accidental contact.

Utilities shall be considered "live" or active until a reliable source has documented them to be otherwise.

Underground Utilities

No excavating, drilling, or boring will be done until a thorough underground utility survey, conducted by knowledgeable persons or agencies, has been made, and the determination has been made that it is safe to begin.

Even when a search has been completed, drilling, boring, and excavation should commence carefully until past the depth at which such utilities are usually located.

Pot holing is required by law and it is Belair Company Policy that all known underground facilities are hand dug at 10 feet on center before machine digging.

It is BELAIR policy that hand digging be done within four (4) feet on either side of a marked line.

The Utility Location Coordinator is responsible for ensuring underground utility searches are performed and procedures are adhered to. Walking the site may be necessary by the coordinator or his delegate.

The following procedures should be followed by site foremen when dealing with underground utilities:

- Utilities must be marked on site plans. Use proper colors.
- Ensure the Utility Location Coordinator is aware of the need for an underground locate or update.
- If there are privately owned utilities on-site, ensure the Utility Location Coordinator is informed so that a private locate can be arranged.
- Locates are only valid for 48 hours if BELAIR leaves the site. If BELAIR leaves the site, ensure a request for a new locate is placed and received before work is resumed on the site.
- Use the marked plan only if you have confirmation that the locates are accurate. If not sure, have the locates re-called.
- Ensure all crew are aware of underground locates, particularly new operators or laborers. Excessive potholing and hand digging may require that additional labor is needed.
- Take photographs of all marked locates before digging starts.
- Mark construction limits at site in white.
- Private locators must be utilized when questionable markings appear at site. Belair form must be signed by owner.

Overhead Utilities

For operations adjacent to overhead power lines, the following conditions must exist:

- Overhead transmission and distribution lines will be carried on towers and poles, which provide safe clearance over roadways and structures.
- Clearances must be adequate for the movement of vehicles and for the operation of construction equipment.

Elevated work platforms, ladders, scaffolding, man lifts, drills, or vehicle superstructures should be erected a minimum of 20 feet (the actual distance is dependant upon the voltage of the line) from overhead electrical lines until the line is de-energized, grounded, or shielded, and a competent electrician has certified that arcing cannot occur between the workplace or superstructure.

Weather Work Guidelines

Minnesota

Work will not be performed on a particular day if:
WCCO weather station at 6AM States it will be:

- 5 below Zero
- 20 Below Zero wind chill

In dealing with hot weather, applicable toolbox talks will be given at that time.

Illinois

Work will not be performed on a particular day if:
Weather Channel WBBM Radio 780 AM News Radio Chicago
States it will be:

- 5 below zero
- 20 Below Zero wind chill

In dealing with hot weather, applicable toolbox talks will be given at that time.

Colorado

Ed Mooney will check the temp. on KYGO 98.5 (approx 5 AM)
If below 0, he will inform general superintendents.
General supts will make the call if we work or not and inform the field superintendents.

Florida

Heat index over 100 degrees refer to Belair Heat & Stress. Call the program FS.

Training Needs and Requirements

(Training times minimum 1 – hour for each topic)
OSHA Standards 29 CFR Part1926 - Included in Belair's Training Program

Subpart

A. General Requirements
B. Interpretations
C. General Safety and Health
D. Occupational Health and Environmental
E. Personal Protective and Life Saving Equipment
F. Fire Protection and Prevention
G. Signs, Signals and Barricades
H. Materials Handling
I. Tools: Hand and Power
J. Welding and Cutting
K. Electrical/Ground Fault/Chords
L. Scaffolds
M. Fall Protection
N. Cranes, Derricks and Elevators
O. Motor Vehicles, Mechanized Equipment **and Marine Operations*
P. Excavations
Q. **Concrete and Masonry*
R. **Steel Erection*
S. Underground Construction and Caissons
T. Demolition
U. **Blasting*
V. **Power Transmission*
W. Rollover Protective Structures:
X. Stairways and Ladders
Y. **Commercial Diving*
Z. Toxic and Hazardous Substances

**Not Needed in Belair's Operations*

Other Training Identified By
Belair's Safety Committee Using Job Hazard Analysis

1. High Visibility Clothing
2. Confined Space
3. Gopher State One Call and Updates
4. Crisis Management
5. Rigging and harnessing
6. Asbestos/Lead Awareness
7. Advanced Soils Failure Mechanics
8. Safety Attitudes and Stress
9. Silica

10. Reasonable Suspicion; Drugs and Alcohols
11. Hazard Communication/Right to Know/AWAIR
12. Back Injuries and Care
13. Defensive Driving
14. Blood Borne Pathogens/Biological Hazards
15. 1st Aid and CPR Update/Medical Records
16. Hearing Conservation
17. Weather Dangers and Preparation
18. Fuel Station Use
19. Violence in the Workplace
20. OSHA Inspection Procedures
21. Job Site Light Levels
22. Machine Scrubbers
23. Accident/Incident Reporting
24. 40 Hour Haz-Mat/Respiratory Program
25. 8 Hour Haz-Mat Refresher
26. Fork Lift Certification
27. Trench Box Safety
28. PPE Classifications
29. Lockout – Tag Out
30. General Duty Clause
31. Three (3) Point Machine Boarding
32. State Equipment Standards/Earth Moving
33. General Drug and Alcohol Training
34. Adult Teaching Skills for Tool Box Trainers
35. Cell Phone Use
36. Shop Guidelines
37. Sub-Contractor Policy
38. Safety Incentive Program Discipline Program
39. Truck Policy
40. General Rules
41. Job Hazard Analysis
42. Suspended Work Surfaces
43. Handling Compressed Gas
44. Utilities Plan
45. Truck Overloads
46. Landfill Use Plan

Recap of Training Needs:

- **Belair's OSHA Training Requirement:**
  Out of 26 OSHA Standards, 5 do no apply to Belair, leaving a required 21
- **Belair Safety Committee Training:** 47
  Job Hazard Analysis
  Total Training needs throughout 2005-2006 (A Goal) **68**