ED TAYLOR CONSTRUCTION SOUTH, INC.

Project Manual

With Job Site Forms

Prepared by:
ED TAYLOR CONSTRUCTION SOUTH, INC.
in association with:
U.S. Compliance Systems, Inc.

PROJECT MANUAL OVERVIEW

It is our policy to provide a work environment that is inherently safe -- free from conditions that are unsanitary, hazardous, or dangerous to the health and safety of our personnel and the subcontractors with whom we work. Prior to performing work, job site personnel will be made aware of our safety and health policies as well as appropriate safety standards to prevent accidents and injuries. Accident prevention demands a commitment from all personnel. That commitment includes an awareness of proper work methods, use of personal protective equipment, and proper use of tools and equipment. Competent persons will, on an on-going basis, review work procedures and adherence to safety standards and immediately address areas in which deficiencies are found. Defective tools and equipment will be immediately taken out of service. Only those qualified by training or experience may operate machinery and equipment.

We want all personnel to become actively involved in our safety program. Suggestions for improved safety procedures are welcome. Safety meetings will be held on a regular basis and they will address safety issues appropriate to the work at hand. During these meetings, employees are encouraged to raise any safety related question or concern. On multi-contractor job sites, safety meetings may, depending on the circumstances, focus on the hazards created by other contractors and how those hazards may impact on our personnel.

Project manuals will be kept at individual job sites to enable the supervisors, competent person(s), employees, and subcontractors to have quick reference to major safety requirements of items of equipment or work procedures. This manual is not a complete safety program; our complete detailed safety program is maintained at our main office located at:

2713 N FALKENBURG RD STE A,
TAMPA, Florida 33619-0920

On the job site, safety concerns should be resolved by your supervisor or the competent person.

All personnel are free to, and encouraged to, review appropriate OSHA safety standards maintained in our safety program.

Immediately following this manual are job site forms appropriate for our work.

PROJECT MANUAL

Contents

JOB SITE FORMS

- Project Emergency Phone Numbers
- Designation of Competent Person(s)
- Job Site Checklist
- Enforcement Documentation
- Hot Work Permit
- Hand Signals for Cranes
- Forklift Checklist
- Documentation for Written Notification to Commence Steel Erection [GC]
- Written Notification to Commence Steel Erection [GC]
- Emergency Action Plan & Fire Prevention Plan
- Accident Investigation Form
- Authorization For Immediate Medical Treatment
- Tilt wall Checklist

NOTE: Job site forms are located at the end of the Project Manual.

GENERAL SAFETY POLICIES AND PROCEDURES

ACCIDENT/INJURY PREVENTION

Our safety program is designed so that neither our employees nor our subcontractors work in conditions that are unsanitary, hazardous, or dangerous to their health or safety.

One lax moment in terms of safety may result in a lifetime of needless pain and suffering. Disregarding safety standards may even be fatal. While an accident may happen in an instant, the consequences may last for years.

Accident prevention requires a commitment from all personnel within our company to actively participate in our safety program. All personnel should be aware of job site hazards and follow procedures to eliminate these hazards by proper work methods, use of personal protective equipment, and proper use of tools and equipment. All persons are encouraged to ask questions and make positive suggestions for safety improvement.

Competent persons will be designated to provide job site expertise as well as regular inspections of equipment, materials, and procedures. Competent persons will have the authority to stop work if a safety hazard is identified and it cannot be corrected immediately.

All machinery, tools, materials and equipment deemed unsafe will be taken out of service by physically removing, tagging, or locking controls to render them inoperable.

Only persons qualified by training or experience will be allowed to operate equipment or machinery.

All tools and items of equipment will be used for the purpose for which they were designed. For example, a wrench is not a hammer; a ladder is not a horizontal plank; a fire extinguisher is not a cooler!

Never take chances or attempt any job without being aware of the proper procedures, the potential safety hazards, and the methods to reduce or eliminate risk.

SAFETY PROGRAM ADMINISTRATOR

Our Safety Director will administer this safety program and has overall responsibility for the implementation of this program. The safety director will ensure each employee has appropriate safety training for the tasks to be performed.

Additionally, duties of this position include:

a. the actual training of personnel.

b. maintenance of training records.

c. random inspections to verify adherence to safety rules and policies.

d. completion of specific tasks identified within our OSHA compliance programs found in Section III of this safety program.

Our Safety Program Administrator is: BRIAN S. JACKSON

The duties of this position may be delegated to other personnel who are competent persons by virtue of training or experience.

The responsibilities of this position may not be further delegated.

EMPLOYEE INVOLVEMENT

All employees are encouraged to participate actively in our safety & health program. Do not hesitate to point out perceived safety deficiencies to your supervisor or the competent person -- you may prevent an injury to yourself or a fellow worker. With the goal of providing a safer worksite for all of us, employee suggestions for improving safety management are welcomed and encouraged. Never perform any task on which you are not confident in your understanding of the safety procedures. If in doubt, ask your immediate supervisor for guidance.

SUBCONTRACTOR INVOLVEMENT

It is our responsibility to review the safety efforts made by subcontractors who may be working with us.

Prior to initiation of work on multi-subcontractor job sites, a meeting will be held to apprise all subcontractors of the protective measures we have determined to be appropriate. Input and suggestions from subcontractors will be solicited. Attention will be given to hazards one subcontractor may create and the measures they will take to prevent other subcontractors from these exposures. One measure that will always be taken is the sharing of appropriate Material Safety Data Sheet information.

HOUSEKEEPING

Housekeeping? On a job site? What's that all about? It's about safety!
Employees are to maintain a neat and orderly work area as far as practical. Housekeeping and general cleanliness have a direct effect on safety and health. Proper housekeeping can prevent slips and falls, allow easy egress in the event of an emergency, prevent falling object injuries, and enhance fire safety. Below listed are general housekeeping rules:

a. walking/working surfaces shall be kept clean and dry.

b. do not allow construction debris to accumulate.

c. stored materials will be neatly stacked at the job site.

d. containers, when not in use, will be sealed.
e. no objects will be left unattended on stairways.
f. entrances and exits will be properly marked and not blocked.
g. tools shall be properly cleaned and put away after use.

EMERGENCY ACTION PLAN

An Emergency Action Plan, if appropriate, will be posted at the job sites along with emergency telephone numbers and an escape route diagram.

After a hazard assessment of a job site, the Safety Director may determine that conditions may develop that could possibly warrant an evacuation. In this case. an emergency action plan will be developed to address the threat. Certainly, if work is being done at a hazardous chemical plant, for example, an emergency action plan is required and coordination will be made with the facility operator.

Events may occur which dictate the evacuation of a job site such as a fire, explosion, power failure, etc... Additionally, events may occur which dictate the need for emergency medical responders. These sets of events fall under our Emergency Action Plan and a multitude of objectives must be met.

The first and foremost objective is the safety of all our personnel. To achieve this level of safety, our plan is designed to get personnel away from danger, treat injury, and provide for a thorough and accurate accounting of all employees.

There may be situations where certain employees, trained in first aid and/or fire fighting procedures, may prevent a small emergency situation from becoming a major disaster. In these types of situations, specifically identified employees will remain to perform the function for which they are trained, provided they may perform these duties in a safe manner. At no time will any employee put himself/herself at risk.

To the extent possible, job sites will have clear, direct, egress.

The actual implementation of this plan must be direct and carried out without confusion. Employees must know how to alert others, how to call for assistance, the location of fire extinguishers and first aid kits, the escape route, and the rendezvous point (being accounted for so that others do not put themselves at risk looking for a person who has already reached safety).

EMERGENCY MEDICAL RESPONSE

Should an injury occur that requires an emergency medical responder, the below listed actions will be taken in order given:

1. Call 911 or the emergency response number posted on the job site.
2. Provide any medical assistance you are trained and certified to do.
   DO NOT provide any medical assistance you are not trained to do.

3. Designate an individual to direct the emergency responders to the injured person and provide Material Safety Data Sheets if applicable.
4. Notify the competent person who, in turn, will notify the office.

FIRE PREVENTION PLAN

Fire Prevention deals not with handling a fire emergency, but rather preventing a fire in the first place.

To reduce the likelihood of a fire, personnel are to adhere to the following rules:

1. Smoking is allowed only in designated areas and smoking materials will be totally extinguished and placed in the appropriate receptacles.
2. All chemical products will be handled and stored in accordance with the procedures noted on their individual MSDS.
3. Heat producing equipment will be properly maintained and operated per the manufacturer's instructions to prevent accidental ignition of combustible materials.
4. Precautions will be taken when working with an open flame (such as welding) and those areas will be made fire safe by removing or protecting combustibles from ignition.
5. Combustible liquids must be stored in approved containers.
6. Chemical spills must be cleaned up immediately. This is particularly important for combustible and reactive liquids. Damaged chemical containers and cleanup materials must be properly disposed.

   [Note: Exercise care! Information on appropriate personal protective equipment; proper disposal; proper cleanup procedures; required ventilation, etc. is found on the product's MSDS.]
7. Combustible liquids and trash must be segregated and kept from ignition sources.
8. Keep clear access to fire hydrants as well as portable fire extinguishers.
9. Personnel will be notified by their Supervisor or the competent person of any unusual fire hazard conditions existing on a job site.
10. Good housekeeping, good housekeeping!

PORTABLE FIRE EXTINGUISHERS

All personnel will receive instruction on the proper use of fire extinguishers.

a. Fire extinguishers will be inspected monthly for general condition and adequate charge. They will be serviced and certified by qualified personnel at least annually.
b. Portable fire extinguisher locations will be clearly identified and easily accessible.

Portable fire extinguishers will be distributed as indicated below:

CLASS	DISTRIBUTION	NOTES
A "A" on a green triangle	75 feet or less travel distance between the yourself and the extinguisher	Use on wood, paper, trash.
B "B" on a red square	50 feet or less travel distance between hazard area and the yourself	Use on flammable liquid, gas.
C "C" on a blue circle	Based on the appropriate pattern for the existing Class A or Class B hazards	Use on electrical fires.
D "D" on a yellow star	75 feet or less travel distance between the combustible metal working area and the extinguisher or other containers of Class D extinguishing agent.	Use on combustible metals.

Appropriate portable fire extinguishers will be used, as noted above. Supervisors will ensure that at least one extinguisher is on each floor of a project near the stairway.

Using the wrong fire extinguisher on some fires can actually spread the fire. Using a Type A extinguisher on an electrical fire, for example, could cause serious injury. When a fire occurs, it is imperative to use the proper extinguisher.

FIRE PROTECTION

The phone number of the local fire department shall be posted with other emergency numbers.

If a fire should occur, all personnel and the local fire department will be notified. As in all emergency situations, per the American Trauma Society, people calling the fire department should:

a. Remain calm.
b. Speak clearly and slowly.
c. Give the exact location.
d. Describe the situation.
e. Give the phone number from where you are calling.
f. Do not hang up until told to do so.

FIRST AID & FIRST AID KITS

Should a medical emergency occur, other than minor scrapes and bruises, and it is serious enough to call for professional medical assistance, you should call the Emergency Response Number posted on the job site bulletin board. Before the first aid providers arrive, to the extent possible, clear the way so they can reach the injured employee in the most direct way possible.

Unless trained and licensed in CPR/first aid and a designated first aid provider as an additional job as part of the company bloodborne pathogen program, employees will not expose themselves to blood or other bodily fluids of other employees at any time.
Per OSHA, first aid is limited to:

a. Using a non-prescription medication, such as aspirin, at non-prescription strength.
b. Cleaning, flushing or soaking wounds on the surface of the skin;
c. Using wound coverings such as bandages, Band-Aids™, gauze pads, etc.; or using butterfly bandages or Steri-Strips™.
d. Using hot or cold therapy.
e. Using any **non-rigid** means of support, such as elastic bandages, wraps, non-rigid back belts, etc...
f. Using temporary immobilization devices while transporting an accident victim (e.g., splints, slings, neck collars, back boards, etc.).
g. Drilling of a fingernail or toenail to relieve pressure, or draining fluid from a blister.
h. Using eye patches.
i. Removing foreign bodies from the eye using only irrigation or a cotton swab.
j. Removing splinters or foreign material from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means.
k. Using finger guards.
l. Using massages.
m. Drinking fluids for relief of heat stress.

If an employee is injured and emergency responders have been called, stay calm and reassure the injured employee that help is coming.

Below is basic first aid for various common job site injuries. Mostly, it is what **not** to do.

MINOR BURNS

(Redness or blisters over a small area)

Flush with cold water; apply a sterile dressing.
Do not use butter on any burn.
Do not break open blisters.

MAJOR BURNS

(White or charred skin; blisters and redness over a large area; burns on face, hands, or genital area)

Cover with sterile dressing and seek medical attention promptly.
Do not apply salves, ointments or anything else.
Do not break blisters.

CHEMICAL BURNS

(Spilled liquid or dry chemical on skin)

Liquid - Flush with large amounts of water immediately (keep water flow gentle).
Dry - Brush as much off as possible before flushing with water.

After flushing at least 5 minutes, cover with sterile dressing.
Seek medical attention promptly.
Do not use anything but water on burned area.
Do not break open blisters.

EYE - FOREIGN OBJECT

(Object visible; feeling of something in the eye)

Have patient pull upper eyelid over lower eyelid.
Run plain water over eye.
If object does not wash out, cover both eyes with a gauze dressing.
Seek medical attention promptly.
Do not rub the eye.

EYE - WOUNDS

(Wound on eyelid or eyeball; pain; history of blow to eye area; discoloration)

Apply loose sterile dressing over both eyes.
Seek medical help immediately.
For bruising, cold compress or ice pack may relieve pain and reduce swelling.
Do not try to remove any embedded object.
Do not apply pressure to eye.

EYE - CHEMICAL BURN

(Chemical splashed or spilled in eye)

Flush immediately with water over open eye for at least 10 minutes (20 minutes if alkali). It may be necessary to hold patient's eyelid open.
Cover both eyes with sterile dressing.
Seek medical help immediately.
Do not put anything but water in eye.

HEAT EXHAUSTION

(Fatigue; weakness; profuse sweating; normal temperature; pale clammy skin; headache; cramps; vomiting; fainting)

Remove from hot area.
Have victim lie down and raise feet.
Apply cool wet cloths.
Loosen or remove clothing.
Allow small sips of water if victim is not vomiting.

HEAT STROKE

(Dizziness; nausea; severe headache; hot dry skin; confusion; collapse; delirium; coma and death)

Call for immediate medical assistance.
Remove victim from hot area.
Remove clothing.
Have victim lay down.
Cool the body (shower, cool wet cloths)
Do not give stimulants.

When dealing with any injury, stay calm and never do anything unless you know what you are doing.

First Aid Kits

First aid kits are worthless if not readily accessible. Therefore, they will not be locked up on job sites.

First aid kits will be replenished as items are used. Sterile items will be wrapped and sealed and used only once. Other items such as tape or scissors can be reused and should be kept clean. In the absence of plentiful amounts of clean water, eye flush will be available.

The number of first aid kits to be found on the job site should be:

Number of Persons Assigned to Job Site	Minimum First Aid Supplies
1 - 5	10 Package Kit
6 - 15	16 Package Kit
16 - 30	24 Package Kit

Depending on the job site, first aid supplies will generally include: adhesive bandages, bandage compresses, scissors and tweezers, triangular bandages, antiseptic soap or pads, eye dressing, and other items that a consulting physician may recommend. The main purpose of a bandage, the most commonly used item in a first aid kit, is not really to stop the bleeding, but to keep the wound clean.

The three most important things dealing with first aid kits are:

1. They must be readily accessible.
2. They must be appropriate for the job site work involved.
3. Personnel must know how to use the contents of the first aid kits.

First aid kits must be replenished as items are used. Those individual items that must be sterile must be wrapped and sealed and used only once. Other items such as tape or scissors can be reused and should be kept clean.

The supplies consumed in first aid kits can actually be used as a safety tool. For example, if a kit constantly needs replacement of bandages which have been used for minor cuts, there is an obvious problem that the cuts are happening in the first place. Actual trends can be established and corrective procedures initiated such as protective gloves or handling practices.

Improper medical treatment can be more dangerous than no treatment at all.

SANITATION

Sanitation. - 1926.51

Potable Water:

From a safety standpoint, you must not neglect your need for potable (drinkable) fluids. Water is not only the most abundant of all compounds found on the earth, it is the most abundant part of you -- actually about 65% of you is water.

On construction sites, exertion and heat dictate the need for plenty of water.

Potable water will be available on job sites. If portable containers are used, they will be clearly marked [Potable Water]; capable of being tightly closed; and equipped with a tap. These containers will be used for no other purpose than supplying drinking water. Non-reusable (single service) cups in a sanitary container will be provided drinking as well as a receptacle for disposing of used cups. Employees are reminded of their need for adequate amounts of water.

Non-Potable Water:

Outlets of non-potable water should be clearly identified as such, through appropriate signage, and non-potable water may never be used for drinking, washing, or cooking.

Toilets:

Toilets will be provided at construction sites according to the below table:

Number of Employees	Minimum Number of Facilities
20 or less	1
20 or more or more	1 toilet seat and 1 urinal per 40 workers
200 or more	1 toilet seat and 1 urinal per 50 workers

Toilet facilities would include, unless prohibited by local law:

a. Privies (where their use will not contaminate ground or surface water)

b. Chemical Toilets

c. Recirculating toilets

d. Combustion toilets

Washing Facilities:

Adequate washing facilities will be provided in near proximity to the worksite if employees are working with contaminants that may be harmful to their health such as paint, coatings, or other chemical products. Paper towels and cleansing agents will be provided.

Showers and change rooms will be dictated by specific standards dealing with specific toxic materials (i.e., lead; asbestos).

Eating and Drinking Areas:

No employee will be allowed to consume food or beverages in any area exposed to toxic material.

LIFTING, PUSHING & PULLING

Back injuries are often caused by the obvious -- putting excessive strain on the lower back by lifting an object that is too heavy or awkward, or by bending and/or twisting while lifting.

However, lifting injuries are also caused by less obvious reasons:

a. poor physical condition

b. poor posture

c. poor judgment (lifting, pulling, pushing an object that is obviously too heavy or awkward without seeking assistance or a mechanical lifting device.)

d. lack of exercise

e. excessive body weight

Proper lifting techniques are important for employee safety. Below are lifting techniques that will reduce the likelihood of injury:

a. lift objects comfortably, not necessarily the quickest or easiest way.

b. lift, push, and pull with your legs, not your arms or back.
c. when changing direction while moving an object, turn with your feet, not by twisting at the waist.
d. avoid lifting higher than your shoulder height.
e. when standing while working, stand straight.
f. when walking, maintain an erect posture; wear slip-resistant, supportive shoes.
g. when carrying heavy objects, carry them close to the body and avoid carrying them in one hand.
h. when heavy or bulky objects need to be moved, obtain help or use a mechanical aid such as a dolly, hand truck, forklift, etc..
i. when stepping down from a height of more than eight inches, step down backwards, not forward.
j. handle heavy objects close to the body -- avoid reaching out.
k. lift gradually and smoothly. Avoid jerky motions.
l. maintain a clear line of vision.

SLIPS, TRIPS & FALLS

Slips, trips, and falls are among the most common job site accidents and they are easily preventable. Below are some of the causes of slips, trips, and falls:

a. running on the job site.
b. engaging in horseplay.
c. working off a ladder that is not firmly positioned.
d. carrying an object that blocks line of vision.
e. work boots not laced or buckled.
f. working off a scaffold without safety rails.
g. using ladders that have oil and grease on the rungs.
h. not using a handrail on steps.
i. messy work areas with debris strewn about.
j. not paying attention to what one is doing.

This list can go on and on, but all the above are easily preventable by adherence to common safety procedures, common sense, and awareness of potential hazards on the job site.

DRUGS AND ALCOHOL

With the exception of over the counter drugs such as aspirin or drugs prescribed by a physician, there shall be no drugs or alcohol on any job site. Alcohol and drug abuse cause an unacceptable level of safety hazard not only for the offending employee, but for others in the vicinity. Those found to be under the influence of drugs and/or alcohol will be immediately removed from the job site by the competent person and further disciplinary action will be taken by the Safety Director.

Employees taking prescription medication that reduces motor skills should report this to their supervisor for appropriate work assignment.

Chemical dependency is a devastating problem for not only the employee, but also the employee's family and co-workers. For obvious safety reasons, it cannot be tolerated in the workplace. Those with such a problem should seek professional help. The Safety Director will assist any employee in finding appropriate treatment should they voluntarily come forward.

SMOKING

There shall be no smoking except in designated smoking areas. Under no circumstances will there be smoking during refueling of vehicles or within 50 feet of flammable materials.

ACCIDENT INVESTIGATION

The purpose of Accident Investigation is to prevent the same type of accident from reoccurring. An accident investigation will begin immediately after the medical crisis is resolved. The competent person/supervisor on the job site will complete an Accident Investigation Form as soon as feasible. The five questions that must be answered are: Who? What? When? Where? and most importantly, Why did the accident happen?

Apparently simple accidents may actually be caused by many complex reasons. Example: a worker is using a claw hammer on a working surface more than six feet above the ground. The hammer head breaks off and strikes a worker below who is not wearing a hard hat. Why did this accident happen? How can it be prevented? With just the facts presented, the fault would seem to rest with the worker who was struck by the falling object. Accident investigation may reveal other contributing factors by answering questions like:

a. Were hard hats required on the project, were they available, and was this policy enforced by the supervisors?

b. Were precautions taken to prevent objects from falling from above, such as a controlled access zone (CAZ)?

c. Did the worker inspect his hammer before use? Was he driving nails -- the job for which a claw hammer is designed -- or pounding metal beams?

After determining the cause of the accident, steps can be taken to prevent a reoccurrence. Near-miss mishaps, events which result in no injury or damage, should be investigated because even though the outcomes are different, the causes are the same.

POSTINGS

On every job site there will be a prominently displayed bulletin board or area for postings. Every employee must be aware of this policy. Certain postings are required as a matter of law in all cases and other postings are required depending on circumstances and types of work being done.

In all cases, the following must be posted to meet OSHA requirements:

a. OSHA Form 3165, *It's the law!*

b. During the period from 1 February through to April 30, OSHA Form 300A, Summary of Work-Related Injuries and Illnesses, must be posted for work-related injuries and illnesses which have occurred during the previous year.

c. Emergency phone numbers and site address for emergency response.

If appropriate, the following must be posted:

a. OSHA citations.

b. Notice of informal hearing conference.

c. Names and location of assigned first aid providers.

d. Air or wipe sampling results.

e. Emergency action plan.

RECORDKEEPING: INJURIES & ILLNESSES

- **OSHA Forms 300; 300A & 301**

As a matter of law, all employers with 11 or more employees **at any one time** in the previous year must maintain OSHA Form 300, Log of Work-Related Injuries and Illnesses, OSHA Form 301, Injury and Illness Incident Report, and OSHA Form 300A, Summary of Work-Related Injuries and Illnesses.

OSHA Forms 300 and 301 are used to record and classify occupational injuries and illnesses. The information on the OSHA Form 300 related to employee health and must be used in a manner that protects the confidentiality of the employees to the extent possible. Recordable injuries and illnesses must be entered on OSHA Forms 300 and 301 within seven (7) days of receiving information that a recordable injury or illness has occurred.

Retention of Forms:

Old OSHA Forms 101 and 200 as well as OSHA Forms 300 and 301 will be retained for five years following the year to which they relate.

Items to be recorded on OSHA Forms 300, 300A and 301:

Work related injuries and illnesses and fatalities are to be recorded using the criteria found in Part 1904, *Recording and Reporting Occupational Injuries and Illnesses*.

Injuries and illnesses must be recorded if they result in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, loss of consciousness, or if the injury or illness involves a significant injury diagnosed by a physician or licensed health care professional even if it does not meet the forgoing conditions.
NOTE: First aid (which is not reportable) is defined in 1904.7(b) (5) ii.

Employee Involvement:

As a matter of policy, all work-related accidents and injuries are to be immediately reported to the competent person/supervisor on a job site who will complete an accident investigation form. This will be forwarded to the Safety Director who will extrapolate appropriate information for completion of the OSHA Form 300.

Catastrophic Reporting Requirements:

Within eight (8) hours after the death of any employee from a work-related incident or the in-patient hospitalization of three (3) or more employees as a result of a work-related incident, either in person or by telephone, the OSHA Area Office nearest to the site of the incident will be notified. OSHA may be contracted for this purpose using a toll free telephone number: 1-800-321-6742.

Location of OSHA Forms 300 and 301:

As a general rule, the OSHA Forms 300 and 301 will be maintained in our main office. However, in the event that a project is to last more than one year, that job site will be considered a fixed establishment and maintain its own OSHA Forms 300 and 301.

INCIDENCE RATE

One indication of the success of our safety effort is our “incidence rate”. When bidding a job, our incidence rate could be a determining factor in a successful bid. The incidence rate is determined by the following formula:

N/EH X 200,000 where:

N = number of injuries and/or illnesses

EH = total hours worked by all employees during the calendar year.

200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

To find the “Lost Workday Injury Rate” (LWDI), the following formula is used:

LWDI Rate = (# LWDI’s X 200,000)/# employee hours worked

LWDI = sum of LWDI’s in reference years

employee hours worked = sum of employee hours in reference years

200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

When accidents and injuries occur, the have an immediate detrimental impact on those employees involved. Additionally, they have a potential lingering negative impact on our company and our ability to get work.

SAFETY MEETINGS

Scheduled safety meetings provide an opportunity for reinforcing the importance of general safety as well as specific work related procedures applicable to the work at hand. Properly prepared safety meetings will focus on one or two topics and be direct and to the point. All safety questions will be addressed and interactive participation is encouraged.

SUBCONTRACTOR RESPONSIBILITIES

The below four major elements of safety management that apply to our operations also apply to our subcontractors:

a. management commitment and employee involvement.

b. worksite analysis.

c. hazard prevention and control.

d. safety & health training.

It is expected that our contractors work within the framework of OSHA standards.

ENFORCEMENT

It is expected that all employees will abide by our safety rules and guidelines not only to protect themselves, but also to protect their fellow workers from harm. Should a safety violation occur, the following steps will be taken by the employee's immediate supervisor:

a. **Minor Safety Violations:** Violations which would not reasonably be expected to result in serious injury.

   1. The hazardous situation will be corrected.
   2. The employee will be informed of the correct procedures to follow and the supervisor will ensure that these procedures are understood.
   3. The supervisor will make a written report of the occurrence using our Enforcement Documentation Form and inform the employee that this documentation will be forwarded to the Safety Director for a retention period of one year.
   4. A repeat occurrence of the same minor safety violation is considered substantially more serious than the first.

b. **Major Safety Violations:** Violations which would reasonably be expected to result in serious injury or death.

   1. The hazardous situation will be corrected.

2. The employee will be informed of the correct procedures to follow and will impress upon the individual the severity of the violation and the likely consequences should this type of violation be repeated. The supervisor will ensure that the individual understands the correct procedures and will be cautioned that a reoccurrence could result in disciplinary action up to and including discharge.
3. The supervisor will make a written report of the occurrence using our Enforcement Documentation Form and inform the employee that this documentation will be forwarded to the Safety Director for a retention period of one year.

c. Willful Major Safety Violations: Intentional violation of a safety rule which would reasonably be expected to result in serious injury to the employee or a fellow worker.

1. The hazardous situation will be corrected.
2. The employee will be removed from the job site, the event will be documented and forwarded to the Safety Director, and the employee will be discharged.

Employees are to understand that the primary purpose of documenting safety violations is to ensure that the important business of employee safety is taken seriously and that the potential for injury is reduced to the lowest possible level.

Schedule of Enforcement Actions for Violations within a 1 Year Period

Minor Violation

Offense	Action	Repeat of Same Offense	Action
1st	Written Notice	1st	1 Day Off
2nd	Written Notice	2nd	3 Days Off
3rd	1 Day Off	3rd	Dismissal
4th	2 Days Off		
5th	3 Days Off		
6th	Dismissal		

Major Violation

Offense	Action	Repeat of Same Offense	Action
1st	Written Notice	1st	4 Days Off
2nd	2 Days Off	2nd	Dismissal
3rd	4 Days Off		
4th	Dismissal		

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JOB SPECIFIC - EQUIPMENT SPECIFIC SAFETY PROCEDURES

ABRASIVE WHEELS

- **Abrasive wheels and tools. - 1926.303**

An abrasive wheel is defined as a cutting tool consisting of abrasive grains held together by organic (resin, rubber, shellac or similar bonding gent) or inorganic bonds. Hazards that present themselves during abrasive wheel operations include physical contact with the rotating wheel; destruction of the wheel, itself; inhalation of the bonding particles; being struck by flying fragments. All these hazards can be eliminated through adherence to appropriate machine guarding principles, appropriate PPE, and/or respiratory protection.

Immediately before mounting, wheels must be inspected and sounded (ring test) to ensure they have not been damaged. Ensure the spindle speed does not exceed the maximum operating speed noted on the wheel.

Ring Test: Wheel to be tested must be dry and free from sawdust. Wheels should be tapped gently with a light nonmetallic implement, such as the handle of a screwdriver, or a wooden mallet for heavier wheels. If they sound cracked (dead), they may not be used. It should be noted that organic bonded wheels do not emit the same clear metallic ring as do vitrified and silicate wheels. Tap the wheels about 45° each side of the vertical centerline and about one or two inches from the periphery. Rotate the wheel about 45° and repeat the test. A sound, undamaged, wheel will give a clear metallic tone.

Guarding: Abrasive Blades in Portable Circular Saws:

It is important to distinguish between a saw and an abrasive blade because they have different guarding requirements. An abrasive wheel, as defined by CFR §1910.211(b)(14) and American National Standards Institute (ANSI) B7.1-1970, as "a cutting tool consisting of abrasive grains held together by organic or inorganic bonds."

If a wheel is, for example, constructed with bonded, steel fragments arranged in intermittent clusters around the periphery of a steel disc, the steel fragments are too large and sharp to be considered abrasive grains. If these fragments remove material primarily by severing rather than by abrasion, then this would be considered a saw blade and the guarding requirements would be found in 29 CFR 1926.300, *General Requirements.*

If, in fact, cutting is done by the abrasive action of the abrasive grains, guarding requirements are found in 29 CFR 1926.303(b), *Abrasive Wheels and Tools*.

Additionally, (ANSI) B7.1 only requires the upper half (180°) of the abrasive blade to be guarded when abrasive wheels are installed on portable power driven circular saws.

AERIAL LIFTS

- **Aerial lifts. - 1926.453**

Aerial lifts include the following types of vehicle-mounted aerial devices to elevate personnel to job-sites above the ground:

a. extensible boom platforms.

b. aerial ladders.

c. articulating boom platforms.

d. vertical towers.

e. a combination of any of the above.

Only authorized persons may operate an aerial lift.

Lift controls must be tested each day prior to use to determine they are in a safe working condition.

When working from an aerial lift, you must stand firmly on the floor of the basket or cage and be attached by lanyard and safety harness to the boom or basket. You may not sit or climb on the edge; use planks, ladders, or other devices for a work position; or tie off to any adjacent pole, structure, or other equipment.

Load limits set by the manufacturer must never be exceeded.

The brakes must be set and when outriggers are used, they shall be positioned on pads or a solid surface.

Aerial lifts must not be moved with personnel in the basket unless it is designed for this type of operation. Aerial lifts designed as personnel movers must have controls that are clearly marked as to their use and the lower controls must be able to override the upper controls. Except in an emergency, the lower controls shall not be used unless permission has been granted by the persons in the lift.

Extreme care must be exercised to avoid contact with electrical energy.

COMBUSTIBLE & FLAMMABLE LIQUID HANDLING

- **Flammable and combustible liquids. - 1926.152**

Only approved containers and portable tanks will be used for storage and handling of flammable and combustible liquids. Approved safety cans or Department of Transportation approved containers will be used for handling and use of flammable liquids in quantities of 5 gallons or less.

Note 1: The above does not apply to flammable liquid materials which are highly viscid (extremely hard to pour) which may be used and handled in their original shipping containers.

Note 2: For quantities of one gallon or less, the original container may be used for storage, use and handling.

Flammable or combustible liquids may not be stored in areas used for exits, stairways, or normally used for the safe passage of people.

Inside a facility, no more than 25 gallons of flammable or combustible liquids may be stored in a room outside of an approved storage cabinet.

GASOLINE: General Information

Because most persons use or indirectly handle gasoline on a regular basis -- from filling up automobiles to lawn mowers -- the hazards presented by this product may have become obscure. Just because you are familiar with gasoline, like electricity, never lose sight of the lethal hazards that it may contain.

Gasoline is a flammable liquid which means it has a flash point of less than 100ºF. The actual flash point -- lowest temperature at which a liquid gives off enough vapor to form a flammable mixture with air -- of gasoline is -45ºF. The auto ignition temperature -- the temperature at which, with sufficient oxygen, gasoline will ignite on its own and burn -- is 536ºF.

Gasoline has a specific gravity -- the weight of the gasoline compared to the weight of an equal volume of water -- of 0.73. Further, gasoline has a negligible solubility in water. Basically, what the above means is that if water is used to extinguish a gasoline fire, it will only spread it because the gasoline will float on the water and continue to give off a vapor and form a flammable mixture with air. Gasoline fires must be fought with an extinguisher that is rated for Class B Fires such as carbon dioxide, dry chemical, or foam. It should be noted that water spray may be used to cool containers that may be exposed to the heat of the fire to prevent an explosion.

Conditions to avoid: heat, flame, & sources of ignition. Materials to avoid: strong oxidizers.

Health hazard information: routes of entry: inhalation, skin, ingestion.

Signs & symptoms of overexposure: headache, nausea, drowsiness, breathlessness, fatigue, convulsions, loss of conscience, dermatitis.

If there is a spill, notify emergency response personnel, evacuate area, remove ignition sources, and build a dike to contain flow, do not flush to sewer or open water. Pick up with inert absorbent and place in closed container for disposal.

Gasoline is a carcinogen -- a cancer causing agent.

General rules: Post “No Smoking” signs around gasoline storage and ensure that it is enforced. Use only approved plastic or metal containers for portable gasoline carriers. They must not contain more than 5 gallons.

Double check with local ordinances for storage requirements.

COMBUSTIBLE GAS INDICATORS

The below information is extracted from OSHA Hazard Information Bulletin, dated, January 18, 1990, subject: The Use of Combination Oxygen and Combustible Gas Detectors.

In tank removal operations, it is common practice to purge a tank containing flammable vapors with either carbon dioxide or an inert gas, such as nitrogen. When the oxygen content falls to about 10% or below, a false combustible gas indicator reading can occur.

The combination oxygen and combustible gas meter is used to test atmospheres for sufficient oxygen content for life support and/or the presence of combustible gases or vapors posing a potential flammability/ explosion hazard. Common examples of locations where this instrument is used include storage tanks, confined spaces, manholes, tank cars, ships and shipyards, tunneling, pumping stations and hazardous waste sites.

The combustible gas indicator is designed to measure combustible gas or vapor content in air. This instrument is capable of detecting the presence of any gas or vapor which, when combined with oxygen in free air, presents a potential hazard due to flammability/explosion. The combustible gas indicator will not indicate the combustible gas content in atmospheres containing less than 10% oxygen.

Each instrument has its own set of operating procedures and instructions, however:

a. The instrument should not be used where the oxygen concentration exceeds that of fresh air (oxygen enriched atmosphere) when sampling for gases like acetylene and hydrogen.

b. Certain materials such as silicon, silicates (such as in certain hydraulic fluids) and organic lead (such as in leaded gasoline) will poison the combustible gas sensor thereby giving erroneously low readings.

c. Combustible gas readings, either negative or greater than 100% LEL, may indicate an explosive concentration of gas beyond the accurate response range of the combustible gas sensor.

d. Pressurized or low pressure samples will give erroneous oxygen percent readings.

e. Acid gases, such as carbon dioxide, will shorten the service life of the oxygen sensor.

f. The instrument will not indicate the presence of combustible airborne mists or dusts such as lubricating oils, coal dust or grain dust.

The safe and effective performance of any oxygen/combustible gas detector requires that the operator know the correct use of the instrument to detect explosive concentrations of combustibles. It is important that the instrument response be appraised in light of the limitations and guidelines given in the instrument manual. The instrument should be operated only after the instructions, labels, cautions and warnings, and any other literature accompanying the instrument are carefully read and understood.

COMPRESSED GAS CYLINDERS

- **Gas welding and cutting. - 1926.350**

Compressed gas cylinders are used on many job sites -- the most common being oxygen and acetylene for welding and propane for heat and forklifts.

Failure to follow basic safety procedures could result in serious injuries such as:

a. flash burn - due to explosion.
b. fragment impalement - due to explosion.
c. compression of the foot - due to mishandling of tanks.
d. inhalation of hazardous gases - due to leakage.

Basic safety procedures for gas cylinder use:

a. Cylinders must remain upright and chained to a substantial support or cart when in use.
b. Wear appropriate personal protective equipment for the job -- such as steel toed shoes, apron, goggles, gloves, helmet, etc...
c. Read and understand the MSDS for the gas being used and know the location of the MSDS in case of an emergency.
d. Have appropriate fire extinguisher readily available.
e. To release the gas, open the cylinder valve slowly -- standing away from the face and back of the gage -- and leave the opening tools in place (on the valve stem) for quick shut-off in the event of an emergency.
f. Ensure cylinder valves, regulators, couplings, and hoses are free of oil and grease and ensure all connections are tight.
g. When using oxygen-fuel systems, use flashback arrestors and reverse-flow check valves to prevent flashback.
h. Keep cylinders away from open flames and sources of heat.
i. **Cylinders are never allowed in confined spaces.**
j. Do not alter or attempt to repair safety devices or valves.
k. Remove the regulators when: a) moving cylinders; b) work is completed, and/or c) cylinders are empty.

CONCRETE AND MASONRY CONSTRUCTION

- **General requirements - 1926.701**
- **Requirements for equipment and tools. - 1926.702**
- **Requirements for cast-in-place Concrete. - 1926.703**
- **Requirements for precast concrete. - 1926.704**
- **Requirements for lift-slab operations. - 1926.705**
- **Lift Slab Operations - 1926.705 App**
- **Requirements for masonry construction. - 1926.706**

Concrete and masonry construction, more so than most trades, are highly skilled activities that require numerous specialized abilities including, but not limited to, an understanding of chemistry, building techniques, specialized tools, and a unique language. The definitions below are extracted from OSHA standards, however they barely scratch the surface. Words and phrases such as: Adiabatic Curing, Hand Float, and Water-Cement Ratio are peculiar to these trades.

DEFINITIONS

Listed below are terms, with accompanying OSHA notes, which must be understood when dealing with concrete and masonry construction:

Bull float: a tool used to spread out and smooth concrete.

[Note: Bull float handles that might contact energized electrical conductors must be constructed of nonconductive materials or insulated with a nonconductive sheath.]

Formwork: the total system of support for freshly placed or partially cured concrete, including the mold or sheeting (form) that is in contact with the concrete as well as all supporting members including shores, reshores, hardware, braces, and related hardware.

[Note: 1 Formwork must be designed, fabricated, supported, braced and maintained so that it will be capable of supporting without failure all vertical and lateral loads that may reasonably anticipate to be applied to the formwork.]

[Note: 2 Drawings with all revisions for the jack layout, formwork (including shoring equipment), working decks, and scaffolds must be available at the job site.]

Lift slab: a method of concrete construction in which floor and roof slabs are cast on or at ground level and, using jacks, lifted into position.

Limited access zone: an area alongside a masonry wall, which is under construction, and which is clearly demarcated to limit access by employees.

Precast concrete: concrete members (such as walls, panels, slabs, columns, and beams) which have been formed, cast, and cured prior to final placement in a structure.

Reshoring: the construction operation in which shoring equipment (also called reshores or reshoring equipment) is placed, as the original forms and shores are removed, in order to support partially cured concrete and construction loads.

[Note: 1 All Shoring equipment must be inspected prior to erection to determine that the equipment meets the requirements specified in the formwork drawings.]

[Note: 2 Shoring equipment found to be damaged such that it is not capable of supporting without failure all vertical and lateral loads that may reasonably anticipated to be applied to them must not be used.]

[Note: 3 Erected shoring equipment shall be inspected immediately prior to, during, and immediately after concrete placement.]

[Note: 4 Shoring equipment that is found to be damaged or weakened after erection, such that its strength is reduced to the point where it is not capable of supporting without failure all vertical and lateral loads that may reasonably

anticipated to be applied to them will be immediately reinforced.

[Note: 5 The sills for shoring must be sound, rigid, and capable of carrying the maximum intended load.]

[Note: 6 All base plates, shore heads, extension devices, and adjustment screws must be in firm contact, and secured when necessary, with the foundation and the form.]

[Note: 7 Eccentric loads on shore heads and similar members shall be prohibited unless these members have been designed for such loading.]

[Note: 8 Whenever single post shores are used one on top of another (tiered), the below will apply:

a. The design of the shoring shall be prepared by a qualified designer and the erected shoring shall be inspected by an engineer qualified in structural design.

b. The single post shores shall be vertically aligned.

c. The single post shores shall be spliced to prevent misalignment.

d. The single post shores shall be an adequately braced in two mutually perpendicular directions at the splice level. Each tier shall also be diagonally braced in the same two directions.]

[Note: 9 Adjustment of single post shores to raise formwork will not be made after the placement of concrete.

[Note: 10 Reshoring shall be erected, as the original forms and shores are removed, whenever the concrete is required to support loads in excess of its capacity.

Shore: a supporting member that resists a compressive force imposed by a load.

Tremie: a pipe through which concrete may be deposited under water.

[Note: Sections of tremies and similar concrete conveyances must be secured with wire rope (or equivalent materials) in addition to the regular couplings or connections.]

Vertical slip forms: forms which are jacked vertically during the placement of concrete.

Jacking operation: the task of lifting a slab (or group of slabs) vertically from one location to another (e.g., from the casting location to a temporary location, or to its final location in the structure), during the construction of a building/ structure where the lift-slab process is being used.

MAJOR HAZARDS

Both concrete and masonry construction require skilled, trained personnel to produce quality work performed in a safe manner. Serious accidents, including wall collapse, can happen in an instant due to premature removal or actual failure of the formwork.

Additionally, failure to brace masonry walls, failure to support precast panels, overloading, etc., can cause serious mishaps.

No construction loads will be placed on a concrete structure unless our competent person determines, based on information received from a person who is qualified in structural design, that the structure or portion of the structure is capable of supporting the loads.

Prior to construction of a masonry wall, a limited access zone will be established as follows:

a. it must be equal to the height of the wall to be constructed plus 4 feet and it must run the entire length of the wall.

b. on the side of the wall that will be unscaffolded, the limited access zone must be:

    1. restricted to entry only by employees actively engaged in constructing the wall, and,

    2. if the wall is 8 feet or less, the limited access zone will be kept in place until the wall is adequately supported to prevent overturning and collapse, or

    3. if the height of the wall is more than 8 feet and unsupported, the wall must be braced. The bracing must remain in place until permanent supporting elements of the structure are in place.

Concrete and masonry work are performed in such a variety of circumstances and conditions -- under ground, over ground, on sides of structures, on top of structures, inside confined spaces, precast and cast in-place concrete, etc.. Each circumstance presents specific hazards which must be addressed. The competent person on site will point out unusual, specific hazards and means to deal with them.

SAFETY PROCEDURES

The competent person will ensure that all equipment is inspected as required and defective equipment is removed from service.
The competent person will ensure the drawing or plans, with revisions, for all equipment and procedures to be used in concrete or masonry construction are available at the job site.

For the safety of all employees, the following safety rules are established:

a. Limited or controlled access zones will be restricted to employees who have actual job responsibilities within the established zones.

b. Employees will not work under concrete buckets while they are being elevated or lowered into position.

c. Employees, except those required for the job, are not allowed under precast concrete members while they are being lifted or tilted into position.

d. Personal protective equipment, determined by the competent person on the job site, will be used without fail. It should be noted that when cement is mixed with water, a highly alkaline solution is produced by the dissolution of calcium, sodium, and potassium hydroxides. Gloves should be worn to protect the skin.

Hands should be washed after contact. OSHA requires head and face equipment for employees applying a cement, sand, and water mixture through a pneumatic hose.

e. Employees will not be allowed to perform maintenance on any equipment where the unexpected activation of that equipment could cause harm without following the procedures in our Control of Hazardous Energy Program.

f. When fastening other materials to a concrete surface (such as a wooden 2" X 4"), only a fastener of 7/32-inch shank diameter or less will be driven in and it may be no closer than 2 inches from the unsupported edge or corner of the work surface.

g. Fasteners will not be driven directly into brick or concrete closer than 3" from the unsupported edge of corner unless a special guard, fixture, or jig is used.

NOTE: Exception to the above: Low-velocity tools may drive no closer than 2" from an edge in concrete.

h. Concrete mixers with one cubic yard or larger loading skips will be equipped with a:

   a. mechanical device to clear the skip of materials.

   b. guardrail installed on each side of the skip.

Note: Regardless of the size of the skip, point of operation guarding must be utilized.

REBAR PROTECTION

All protruding reinforcing steel onto and into which employees could fall will be guarded to eliminate the hazard of impalement. Protection from impalement on protruding rebar is primarily a function of fall protection when employees are working above rebar or other impalement hazards.

When working at the same grade as rebar protruding 4 to 6 feet, there is not, for all practical purposes, an impalement hazard. In these instances, acceptable rebar caps are appropriate to prevent cuts, abrasions or other minor injuries.

At grade, the lower the rebar sticks up, the greater the impalement hazard due to tripping. If there is any chance for impalement, acceptable rebar caps are mandatory.

CONCRETE CUTTING

Only trained and authorized personnel will operate concrete tile cutting equipment. The following guidelines will be used during all concrete cutting operations.

a. follow the manufacturer's recommendations for the safe use of the equipment.

b. use the correct blade (size, type, speed) for the job, properly tightened. Inspect the blade and all equipment before use.

c. ensure all safety guards are functioning properly.

d. never operated a hand held saw above shoulder height.

e. wear proper safety equipment including eye, hand and skin protection. Depending on the job, respiratory protection or dust masks may be required.

f. establish a control zone and keep others out who are not directly involved with the work at hand.

g. ensure there is adequate coolant/water when appropriate.

h. never operate an internal combustion saw in a confined space.

CRANES

- **Cranes and derricks. - 1926.550**

Cranes, like all pieces of heavy equipment, if not properly operated, inspected and maintained have a potential for causing major bodily injury or property damage. Care must be taken in all facets of crane operation.

Not only do cranes require a thorough annual inspection (a record of the dates and results of these inspections must be maintained), they require inspection prior to each use and even during use by a competent person.

All rated load capacities, recommended operating speeds, special hazard warnings or instructions must be readily visible to the operator of the crane.

While cranes easily have the lifting ability to hoist employees on a personnel platform, this is absolutely prohibited except in cases when the erection, use, and dismantling of conventional means of reaching the worksite would be more hazardous or is not possible because of structural design or worksite conditions. A conventional means would include: a personnel hoist, ladder, stairway, aerial lift, elevating work platform or scaffold.

It is absolutely imperative that the possibility of electrocution be totally eliminated. This can be accomplished by adhering to the safe distances from various currents noted in *Heavy Equipment and Electrical Power Lines*, below.

Dangers associated with cranes include numerous moving parts. These dangers can be minimized or eliminated by ensuring that all guards are in place and not tampered with.

Care must be taken to ensure that areas within the swing radius of the rear of the rotating superstructure of the crane are barricaded to prevent a person from being struck or crushed.

All employees must keep clear of loads that are about to be lifted as well as suspended loads.

When using slings made from alloy steel chain, wire rope, metal mesh, natural or synthetic fiber rope (conventional three strand construction), and synthetic web (nylon, polyester, and polypropylene), the following safe operating practices will be observed:

a. Slings shall not be shortened with knots or bolts or other makeshift devices.
b. Sling legs shall not be kinked.
c. Slings used in a basket hitch shall have the loads balanced to prevent slippage.
d. Slings shall be padded or protected from the sharp edges of their loads.
e. Hands or fingers shall not be placed between the sling and its load while the sling is being tightened around the load.

Hand signals used to guide the crane operator will be consistent with the ANSI standard for the type of crane in use and an illustration of the signals must be posted at the job site.

Care must be taken while actually operating the crane in hoisting applications as well as when relocating the crane superstructure.

The competent person on site will ensure that the flooring on which equipment may be placed is substantial enough to safely hold the weight of the load. If the strength of the floor is unknown and/or cannot be determined, a professional engineer will determine the pounds per square foot required and, if necessary, the appropriate shoring to be installed to sustain the weight.

RIGGING EQUIPMENT

Rigging equipment for material handling must be inspected prior to use on each shift and as necessary to ensure that it is safe. Defective rigging equipment will be removed from service. Further, rigging equipment not in use will be removed from the immediate work area to eliminate the hazards it may create for other employees.

Within 29 CFR 1926.251, *Rigging Equipment for Material Handling*, are Tables H-1 to H-20 which indicate rated capacities for various types of slings and grommets, safe working loads for shackles, number and spacing of U-Bolt Wire Rope Clips, and maximum allowable wear at any point of link.

Specific requirements for use and inspection of alloy steel chains; wire rope; natural rope and synthetic fiber; synthetic webbing; and shackles are found in this standard.

DEMOLITION

- **Preparatory operations. - 1926.850**
- **Stairs, passageways, and ladders. - 1926.851**
- **Chutes. - 1926.852**
- **Removal of materials through floor openings. - 1926.853**
- **Removal of walls, masonry sections, and chimneys. - 1926.854**
- **Manual removal of floors. - 1926.855**
- **Removal of walls, floors, and material with equipment. - 1926.856**
- **Storage. - 1926.857**
- **Removal of steel construction. - 1926.858**
- **Mechanical demolition. - 1926.859**
- **Selective demolition by explosives. - 1926.860**

Demolition work presents specific hazards that are not normally found on typical job sites. These hazards include, but are not limited to:

a. the actual collapse of the structure being demolished. Prior to demolition operations, a competent person must determine, and document in writing, the condition of the framing, floors, and walls, and assess the possibility of an unplanned collapse of any portion of the structure. If appropriate, adjacent structures where employees may be exposed to danger must checked by a competent person.

   1. wall and floors must be braced or shored if employees must work in a structure to be demolished that has been damaged by fire, flood, or explosion.

b. explosion, electrocution, hazardous atmospheres. Prior to demolition work all electric, gas, water, steam, sewer, and other service lines must be shut off, capped, or otherwise controlled, outside the building line before demolition work is started. In each case, any utility company which is involved shall be notified in advance.

   1. additionally, the competent person must determine if hazardous chemicals, gases, explosives, flammable materials, etc. are in pipes, tanks, or other equipment on the property. If apparent or suspected, testing and purging must be performed and the hazard eliminated before demolition is started. It is not uncommon during the demolition of older structures to have potential asbestos and/or lead exposure.

NOTE: If an abatement contractor has abated materials from a building that we are to demolish, we will obtain written certification from the abatement contractor certifying that all the materials in question have been properly removed and appropriate air and/or wipe clearance testing has been completed.

c. shattered glass.

d. falling debris.

e. falling through holes or wall openings.

Specific procedures to eliminate employee hazard exposure during demolition operations are found in the standards noted above. Areas that are addressed include: stairs, passageways, and ladders; chutes; removal of materials through floor openings;

removal of walls, masonry sections, and chimneys; manual removal of floors; removal of walls, floors, and material with equipment; storage of waste material; removal of steel construction; and mechanical demolition.

DISPOSABLE RESPIRATORS

OSHA requires that employees who voluntarily use disposable respirators in situations where respiratory protection is not specifically required by OSHA standard (in atmospheres where exposures are below the permissible exposure limit) essentially for personal comfort or additional, though not required, respiratory protection be informed of 29 CFR 1910.134 Appendix D, printed below.

By insisting that these employees sign the tear-off employee handbook acknowledgement form, you can protect your company from OSHA citation for violating this requirement.

All disposable respirators, such as Moldex, 3M, Wilson, North Safety, etc. must be marked with the manufacturer's name, the part number, the protection provided by the filter, and "NIOSH".

Disposable filters are particulate respirators. They are also known as "air-purifying respirators" because they protect by filtering particles out of the air you breathe.

The below outlines the types of approved disposable respirators and their description.

N95	Filters at least 95% of airborne particles.	Not resistant to oil.
N99	Filters at least 99% of airborne particles.	Not resistant to oil.
N100	Filters at least 99.7% of airborne particles.	Not resistant to oil.
R95	Filters at least 95% of airborne particles.	Somewhat resistant to oil.
P95	Filters at least 95% of airborne particles.	Strongly resistant to oil.
P100	Filters at least 99.7% of airborne particles.	Strongly resistant to oil.

Though disposable filters cannot be fit-tested in the traditional sense, they must be fit-tested in accordance with the manufacturer's instructions.

Under no circumstances may any respirator other than the above disposable respirators be used without compliance with a respiratory protection program.

Standard Number: 1910.134 App D

Standard Title: (Mandatory) Information for Employees Using Respirators When not Required Under Standard.

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, of if you provide your own respirator, you need to take certain precautions to be sure that

the respirator itself does not present a hazard. You should do the following: 1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations. 2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you. 3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke. 4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

[63 FR 1152, Jan. 8, 1998; 63 FR 20098, April 23, 1998]

EARTH MOVING EQUIPMENT

- **Equipment. - 1926.600**

All heavy equipment must be inspected prior to use and operated only by authorized personnel.

Bi-directional machines such as front-end loaders and bulldozers will have an audible alarm, distinguishable from the surround noise level which will be used if the operator does not have a clear, unobstructed view or a ground guide indicating that the line of travel is safe.

Scissors points on all front-end loaders which may harm the operator will be guarded as well as all parts exposed to employees such as belts, gears, pulleys, sprockets, spindles, drums, flywheels, chains and other moving parts.

Equipment that is operated from the seated position and has roll over protection will have seat belts and their use is required. If there is no roll over protection, seat belts will not be used.

All trucks into which earth is dumped will have protection for the driver of that vehicle or the driver must exit the vehicle before loading.

Vehicle operators will not operate heavy equipment on any access roadway or grade that is not suitable for the vehicle.

Bulldozer blades, loader buckets, dump bodies and similar equipment will be fully lowered or blocked to prevent movement during maintenance or when not in use.

When equipment is parked, the parking brake will be set. Additionally, on inclines, wheeled vehicles will be chocked. Equipment left unattended at night, adjacent to either a highway or construction area in use, will be clearly visible with reflectors, lights, or illuminated (with reflectors or lights) barricades.

ELECTRICAL WORK - WORKPLACE SAFETY

- **Applicability. - 1926.402**
- **General requirements. - 1926.403**
- **Wiring design and protection. - 1926.404**
- **Special systems. - 1926.408**
- **General requirements. - 1926.416**
- **Definitions applicable to this subpart. - 1926.449**

If one were to wire a facility with 16 gauge aluminum wire, and, a week after the job was completed, the facility burnt to the ground, this would not be an OSHA problem -- it would be a serious, possibly criminal, professional problem. If one were standing in water operating an electrical power tool connected to a bare spliced extension cord laying in that water, this would be an OSHA problem. These extreme examples are presented to point out that this safety program applies to employee safety while performing work. OSHA standards do not provide any guidance in any profession, they merely provide guidance in doing your professional work safely.

All electrical work will be done according to the latest adopted National Electrical Code as well as established local codes.

ELECTRICAL SAFETY MEASURES

a. Daily, prior to use, all electrical equipment -- including extension cords -- will be inspected and defective items will be tagged out of service and not used.

b. With the exception of double insulated tools (with UL approval), all electrical tools and equipment will be grounded.

c. Tools will not be hoisted by their flexible electrical cords.

d. Except in an emergency, load rated switches and circuit breakers will be used for the opening and closing of circuits under load conditions as opposed to fuses and splice connections.

e. While working on electrical equipment, unauthorized persons will be kept clear by barriers or other means of guarding.

f. Temporary wiring and extension cords will be kept off of walking working surfaces and vehicle traffic areas or covered to prevent tripping and vehicle damage.

    1. Electrical cords will not be suspended with staples, hung from nails, or suspended by wire.

    2. Worn or frayed electric cords or cables will not be used.

g. Hands will be dry when working on electrical equipment including plugging in extension cords.

h. Areas in which electrical work is to be done must be adequately illuminated and temporary lighting must:

    1. have guards in place.

    2. not be suspended by its cords unless specifically designed for such installation.

i. A competent person, before work commences, will inform all employees in the work area of both exposed and concealed electrical hazards. If appropriate, warning tags will be used to prevent accidental contact with electrical energy.

j. When working around any electrical power circuit, employees will:

1. protect themselves by de-energizing the circuit and grounding it or by establishing insulation between themselves and the current.

2. ensure that any conductive materials and equipment that are in contact with any part of their body will be handled in a manner that will preclude contact with exposed energized conductors or circuit parts.

3. use portable ladders that have non-conductive side rails.

4. remove or insulate conductive articles of jewelry and clothing that might contact exposed energized parts.

k. All 15, 20, or 30 amp receptacle outlets that are not part of the permanent wiring of the building or structure and that are used by personnel shall have ground-fault circuit interrupter protection for personnel. GFCI pigtails may be used to meet this requirement if properly sized. Remember, extension cords are considered temporary wiring.

1. Ground fault circuit interrupters will be tested before use.

l. Only qualified persons may perform testing work on electric circuits or equipment.

m. Sufficient access and working space must be maintained about all electric equipment to permit ready and safe operation and maintenance. This space must be kept clear, i.e., it can not be used for storage.

n. The dimension of the working space in the direction of access to live parts likely to required examination, adjustment, service, or maintenance must not be less that noted below:

Working Clearances

Minimum clear distance for conditions[1]

Nominal voltage to ground	(a) Feet[2]	(b) Feet[2]	(c) Feet[2]
0 - 150	3	3	3
151 - 600	3	3 ½	4

Footnote[1] Conditions (a), (b), and (c) are as follows:

{a} Exposed live parts on one side and no live or grounded parts on the other side of the working space, or exposed live parts on both sides effectively guarded by insulating material. Insulated wire or insulated busbars operating at not over 300 volts are not considered live parts.

{b} Exposed live parts on one side and grounded parts on the other side.

{c} Exposed live parts on both sides of the workplace [not guarded as provided in Condition (a)] with the operator between.

Minimum Depth of Clear Working Space in Front of Electric Equipment

	Conditions[1]		
Nominal voltage to ground	(a) Feet[2]	(b) Feet[2]	(c) Feet[2]
601 to 2,500	3	4	5
2,501 to 9,000	4	5	6
9,001 to 25,000	5	6	9
25,001 to 75 kV	6	8	10
Above 75kV	8	10	12

Footnote[1] Conditions (a), (b), and (c) are as follows:

{a} Exposed live parts on one side and no live or grounded parts on the other side of the working space, or exposed live parts on both sides effectively guarded by insulating materials. Insulated wire or insulated busbars operating at not over 300 volts are not considered live parts.

{b} Exposed live parts on one side and grounded parts on the other side. Walls constructed of concrete, brick, or tile are considered to be grounded surfaces.

{c} Exposed live parts on both sides of the workspace [not guarded as provided in Condition (a)] with the operator between.

1. The importance of working clearances cannot be overstated. At any time, when working with live electrical systems, there is the possibility of an arcing fault causing an arc flash where the current explosively flows through ionized air at 35,000°F causing incurable burns, hearing loss, collapsed lungs, or even death from the electricity of flying metal shrapnel.
2. As a contractor working in an area where the possibility of arc flash exists, check to see if an arc flash assessment has been performed on electrical equipment on which you will be working. If it has, follow that specific guidance. If it has not, perform (or have a qualified vendor perform) the arc flash assessment. Refer to NFPA 70E for specific guidance appropriate to the facility's specific electrical equipment.

Note: NFPA 70E is a National Consensus Standard which is incorporated by reference within the OSHA standards; specifically, Appendix A to Subpart S, 29 CFR 1910. Failure to comply with NFPA 70E is citable under the general duty clause.

The above electrical safety measures are not all inclusive, however they cover many normal job site events. A complete list is found in the cited references and they are incorporated into this safety manual. If in doubt about any safety procedure, contact your supervisor or the competent person for clarification.

EXCAVATING, TRENCHING & SHORING

- **Scope, application, and definitions applicable to this subpart. - 1926.650**
- **Specific Excavation Requirements. - 1926.651**
- **Requirements for protective systems. - 1926.652**
- **Soil Classification - 1926 Subpart P App A**
- **Sloping and Benching - 1926 Subpart P App B**
- **Timber Shoring for Trenches - 1926 Subpart P App C**
- **Aluminum Hydraulic Shoring for Trenches - 1926 Subpart P App D**
- **Alternatives to Timber Shoring - 1926 Subpart P App E**
- **Selection of Protective Systems - 1926 Subpart P App F**

Excavating involves any earth removal which creates a cut, cavity, trench, or depression in the earth's surface. A trench is a narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet. If forms or other structures are installed or constructed in an excavation so as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet or less (measured at the bottom of the excavation), the excavation is also considered to be a trench.

Prior to excavating, obstructions that may create a hazard to employees will be removed or supported and utility companies will be contacted, advised of the proposed work, and asked to establish the location of underground installations.

If the utility company cannot respond to this request within 24 hours and/or the exact location of the underground installations cannot be determined, actual work may begin provided that:

a. extreme caution is observed.

b. detection equipment or other acceptable means are used to locate the approximate location of the utility installation.

c. as the approximate location is approached, the exact location will be determined by safe and acceptable means before proceeding.

In open excavations, underground installations will be protected, supported or removed as necessary to protect employees.

To ensure employee safety, the competent person will ensure that during excavating work in trenches there is:

a. appropriate access and egress for personnel and/or equipment such as stairs, ramps and ladders so as to require no more than 25 feet of lateral travel for employees in trenches four (4) feet or more deep.

b. employee protection for head injury. All employees must wear hard hats.

c. no spoil pile or equipment within two (2) feet of the edge of the excavation.

d. employee protection from vehicular traffic such as barricades, ground guides for operators of equipment with a limited view, away sloping grades, etc...

e. no exposure to falling loads.

f. no danger to employees from water accumulation.

g. no danger from cave-in. Shoring, a structure such as a metal hydraulic, mechanical or timber shoring system that supports the sides of an excavation, will prevent cave-ins.

   1. Shoring is not required for trenches less than five (5) feet deep if an examination by a competent person determines the soil has no potential for a cave-in. In this situation, vertical sides are allowed.

   2. Once a trench is over 20 feet deep, protective systems, which may include shoring, must be designed by a registered professional engineer.

   3. There are other methods of protection from cave-ins such as sloping or benching the adjacent ground according to specific criteria dependent on the soil conditions, weather, and adjacent structures.

   4. The total number of cave-in accidents is relatively small, however, the accidents which do occur are generally very serious and are much more likely to be fatal than other types of accidents in the construction industry.

h. a method to prevent mobile equipment from falling into the excavation such as barricades. Ground guides will be used if the equipment operator does not have a clear view of the edge. If possible, the grade should slope away from the excavation.

If the atmosphere is dangerous or likely to be dangerous, testing will be done as often as needed and emergency rescue equipment -- such as breathing apparatus, safety harness and line, or a basket stretcher -- must be available.

When a hazardous atmosphere does exist, appropriate respiratory protection will be used and a rescue plan developed which includes having an attendant outside the hazardous area with appropriate equipment and training.

PROTECTIVE SYSTEMS

Except when an excavation is made entirely in stable rock or it is less than 5 feet in depth and a competent person finds no indication of potential cave-in, employees in an excavation will be protected from cave-in by protective systems designed in accordance with paragraphs (b) or (c) of 26 CFR 1926.652.

All employees involved with excavating are to review these standards and understand, in general terms:

a. The extensive degree of basic data, design, and knowledge that goes into employee protection during excavating projects.

b. The types of soils and how to identify them on the job site.

c. The soil condition -- specifically moisture content -- and how that impacts on stability during excavations.

d. The absolute need for a competent person to be on site at all times during excavating work to visually and manually test soil conditions as work progresses and to maintain a safe site.

DAILY INSPECTIONS

Prior to work and as needed throughout the shift, a competent person will conduct daily inspections of excavations, adjacent areas and protective systems to find evidence of a developing cave-in situation; failure of protective systems; hazardous atmosphere; or other hazardous conditions.

After every rainstorm or event which would affect the safety of employees within an excavation, an inspection will be made by a competent person.

FALL PROTECTION

Walkways must be provided where employees or equipment are required or permitted to cross over excavations. If these walkways are 6 feet or more above a lower level, guardrails must be used. Specific criteria for guardrails is found in 29 CFR 1926.502(b), a copy of which is found in Section III of this safety program behind the Fall Protection tab.

EXTENSION CORDS

- **Wiring methods, components, and equipment for general use. - 1926.405**
- **General requirements. - 1926.416**

Extension cords shall not replace permanent wiring and the following safety precautions will be adhered to:

a. Inspect the cord for cracks and cuts.

b. Cord must have a three prong plug for grounding.

c. Use the shortest continuous length of cord possible. Cords may not be spliced together.

d. Make certain the cord does not lay in water.

e. Ensure cord is properly rated for the job.

f. Secure and route cords out of the traffic flow to prevent tripping.

g. Defective cords will be tagged and removed from service.

h. Most importantly, an extension cord used on a job site MUST be used with a ground fault circuit interrupter (GFCI).

GROUND FAULT CIRCUIT INTERRUPTERS

- **Wiring design and protection. - 1926.404**

A ground fault circuit interrupter (GFCI) provides protection for all 120-volt, 15-, 20-, and 30-ampere receptacle outlets that are not a part of the permanent wiring by detecting lost current resulting from a short, overheating, and/or ground fault. It should be noted that an extension cord into which electrical devices are plugged are not part of the permanent wiring; therefore, GFCI's are required.

A GFCI will "trip" when the amount of current amperes going to an electrical device in the hot conductor and the amount of current returning from an electrical device differs by approximately 5 milliamps. The GFCI can interrupt the current within as little as 1/40th of a second.

The current that is missing is being lost through a ground fault, whether it is in the actual grounding, a short in the equipment or electricity going through the employee to the ground.

A GFCI will not protect an employee who comes in contact with two hot wires or a hot wire and a neutral wire. A GFCI will provide protection against fires, overheating, damage to insulation, and, the most common form of electrical shock hazard -- the ground fault. GFCI’s must be tested before use.

HEAVY EQUIPMENT AND ELECTRICAL POWER LINES

- **Cranes and derricks. - 1926.550**

Except where electrical distribution and transmissions lines have been de-energized and visibly grounded at point of work or where insulating barriers (not attached to the vehicle) have been erected to prevent physical contact with the lines, the following clearance -- between any part of the vehicle and the line -- will be observed:

Line Rating	Minimum Clearance
50 kV. or below	10 feet
Over 50 kV.	10 feet plus .04 inch for each 1 kV. Over 50 kV or twice the length of the line insulator, but never less than 10 feet.

In transit, equipment clearance must be a minimum of:

Line Rating	Minimum Clearance
50 kV. or below	4 feet
Over 50 kV. to 345 kV.	10 feet
Over 345 kV. to 750 kV.	16 feet

A ground guide will be designated to observe clearance of the equipment and give warning to the equipment operator in situations where it is difficult for the equipment operator to maintain the desired clearances by visual means.

An overhead wire will be considered energized unless the owner of the line or the electrical utility authorities indicate that it is not energized and it has been visibly grounded.

HOISTS

- **Material hoists, personnel hoists, and elevators. - 1926.552**

A hoist is a useful mechanical device which gives one the ability to lift and move heavy objects -- not people. No person is to ride on a hoist. As with all mechanical devices, improper use may lead to injury. You must know what you are doing and you must be careful.

Before use, hoists must be inspected for bent or damaged components. Particular attention should be paid to guarding. Fingers and loose clothing could be snagged in exposed mechanisms. Chains, cables, or rope slings must not be kinked, twisted, or frayed.

Loads must be properly rigged with hooks or slings and they must never exceed the hoist's rated capacity.

Ensure that the area around the hoist is free from debris and, most importantly, people. Do not allow yourself or others to be under a hoisted load.

KETTLE OPERATIONS

Only trained and authorized persons will be involved with kettle operations. All operations will be performed within a control zone that precludes entrance by unauthorized persons.

During kettle operations, employees will wear appropriate PPE including hand protection: gloves; skin protection: long sleeves and long pants; foot protection: steel toed work boots; eye protection: safety goggles; and head protection: hard hat, as necessary.

While our work generally has material within the kettle at 450°F, at no time shall the material within the kettle exceed 500°F.

The kettle lids will not be opened except for loading the kettle with solid roofing material or unless the material in the roofing kettle is less than 150°F.

LIGHTING

- **Illumination. - 1926.56**

A competent person will ensure that all work areas have adequate lighting. Adequate lighting serves a two-fold purpose -- allowing tasks to be more readily performed as well as providing the additional safety factor of being seen by persons not involved with the work -- especially vehicular traffic.

If generators are used for auxiliary lighting, they will be operated and maintained by authorized persons who are competent by training or experience.

LP-GAS STORAGE

- **Liquefied petroleum gas (LP-Gas). - 1926.153**

Liquefied petroleum gas (LP-Gas) is sometimes used on job sites to provide fuel for temporary heating devices.

LP-Gas systems must have containers, valves, connectors, manifold valve assemblies, and regulators of an approved type. All cylinders must be DOT approved.

Rules for inside storage (under construction standards) are simple -- **it is not allowed!**

NOTE: Under industry standards, up to 300 pounds of LP-Gas may be stored, with adherence to specific safety procedures, is allowed

Rules for outside storage require that containers be in a suitable ventilated enclosure or otherwise protected against tampering. At least one approved portable fire extinguisher having a rating of not less than 20-B: C must be readily available.

The distance from buildings or groups of buildings that containers must be stored are as follows:

Quantity of LP-Gas Stored	Distance in Feet
500 lbs or less	0
501 to 6,000 lbs	10
6,001 to 10,000 lbs	20
over 10,000 lbs	25

Storage must not be near building openings or vehicular traffic.

LP-GAS TEMPORARY HEATING

- **Liquefied petroleum gas (LP-Gas). - 1926.153**

When LP-Gas is used for temporary heating on units that provide over 7,500 BTU per hour or use containers greater than 2.5 pounds maximum water capacity [nominal 1 pound LP-Gas capacity], the following will apply:

a. Container valves, connectors, regulators, manifolds, piping and tubing must not be used as structural supports for the heaters.

b. The LP-Gas containers and all associated equipment including hoses must be located so as to minimize exposure to high temperatures or physical damage.

c. The maximum water capacity of individual containers must be 245 pounds [nominal 100 pound LP-Gas capacity].

Heaters that are not integral heater-container units, which connected by hose to the LP-Gas, must be at least 6’ from the container. Blower and radiation type heaters must not be directed toward the container or any other unit within 20 feet. Heaters specifically

designed for attachment to the container are permitted as long as the heat is not directed to the LP-Gas container.

MACHINE GUARDING

- **Mechanical power-transmission apparatus. - 1926.307**

Most injuries that occur when operating a machine happen at the point of operation -- the point on a machine where the actual work (cutting, bending, and spinning) occurs. This is also the point where guards can protect fingers and hands exposed to that danger. Machine guarding also protects employees from other dangers such as flying pieces of metal, sparks, gears, belts, and rotating parts.

The most common types of machines on job sites are power tools which often have guards to prevent injury.

Accident prevention in this area is a function of machine design -- engineering controls -- and operator training. Types of machine guarding are almost as numerous as types of machines -- the most common being a physical barrier to prevent accidental insertion of body parts. Guards are vital for safety reasons and machine guards designed into a machine should never be altered or removed. The speed and tremendous forces involved in modern machines are such that severe injury or even death could occur without warning and without even slowing the machine down.

Training and proper work methods go a long way toward reducing machine accidents. Like all safeguards, there is generally a way to bypass safety features that are engineered into machines. This is sometimes done to increase speed or just to make one's job easier. This could result in a tragic, avoidable accident. The few seconds saved could cause a lifetime of grief. Do not bypass safety systems.

Operate all machines according to the instructor's manual and follow all safety procedures.

MACHINERY

Spinning, pounding, moving -- gears, pulleys, levers -- electricity, fuel, hydraulics -- action, reaction, force: danger! Machinery takes energy and performs a task or a multitude of tasks. Machinery, from a safety standpoint, is a collection of individual simple machines (pulleys, gears, etc.) combined to work in harmony to accomplish a specific job.

The danger is obvious: the power, speed, movement, and momentum of machinery is not going to be altered by something as insignificant as an employee’s finger, hand, or even body.

How does one deal with the dangers of machinery? First, never operate any machinery until you have received proper training and you thoroughly understand safety procedures as well as procedures to follow for adjustments, power interruption, jamming, lubrication, and inspection.

Secondly, ensure the guarding systems are in place, functioning properly, and have not been altered or removed.
Thirdly, if a hazard assessment of the machinery operation dictates specific personal protective equipment (PPE), wear it!

Lastly, again from purely a safety standpoint, think of any power operated item with moving parts as machinery. This would include items as diverse as a small electric drill to an 80,000 pound tractor-trailer.

PIPE TIE-INS

Prior to pipe tie-in, the flow of gas, steam, vapor, and liquid must be halted. It is absolutely vital to know the ramifications of halting the flow within the pipe particularly in hazardous facilities such as chemical plants, refineries, and other facilities which have a higher degree of hazard than normal work sites. In these types of facilities, prior to any blocking of flow through pipes, permission will be obtained from the facility operator. Failure to follow this specific rule could result in a major catastrophe.

Before actual tie-in is attempted, the original pipe that has been taken out of service (by positive means such as valve, block, and tag) will be purged of contaminants, and gas tested, if appropriate.

At the completion of the tie-in, the facility operator will be notified before flow is restored to the pipe.

It is vital to know the chemical and physical properties of the material within the pipe so an appropriate fire extinguisher can be selected and available. This information will also allow for hazard assessment and PPE selection.

SCISSOR-LIFT FALL PROTECTION

What type of fall protection is required for scissor-lifts? This apparently simple question has a relatively simple answer. However, how it is derived is somewhat complicated because OSHA does not have a standard to deal with this issue.

Clearly, there is a hazard -- falling from height -- however, fall protection while using a scissor-lift is not covered in the fall protection, scaffold and ladder fall protection, or aerial lift fall protection standards.

Section 5(a) (1) of the Occupational Safety and Health Act, commonly referred to as the General Duty Clause is a “catch all clause” which states: "Each employer shall furnish to each of its employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees."

In the absence of a specific standard relating to a safety or health risk, the above is the reference OSHA will cite.

When assessing compliance efforts, OSHA considers the requirements of pertinent national consensus standards. In the case of scissor-lifts, ANSI/SIA A92.6-1990, Self-propelled Elevated Work Platforms, and ANSI/SIA A92.3, Manually Propelled Elevating Aerial Platforms, are used.

Fall protection is provided by employees maintaining firm footing on the lift and using guardrails. Under no circumstances are employees to place ladders or other items on the lift to extend their reach. Per ANSI/SIA standards, with which OSHA concurs, "Use of planks, ladders, or any other device on the aerial platform for achieving additional height or reach shall be prohibited." Use of these items negates the value of the guardrail system and may possibly exceed the scissor-lift's design limits for stability.

Further, personnel are not to tie off to items adjacent to the lift -- the most obvious reasons are: the anchorage point may not be sufficient and movement of the lift would pull the employee out of and off of the lift.

If, for some reason, guardrails are not being provided for a specific operational reason, then a personal fall protection system may be used which would include an anchorage point, lanyard and safety harness. However, this option is severely limited because its design would have to be approved by a registered engineer or the scissor-lift manufacturer would have to approve the use of the lift as an anchorage.

Under ideal conditions, rarely found on a construction site, scissor-lifts may be moved with the lift extended. However, should obstacles, debris, drop-offs, holes, depressions, ramps or other hazards be present, the lift must be lowered prior to movement.

Finally, if the employee leaves the safety of the scissor-lift platform while working at height, some sort of approved fall protection system must be employed.

SIGNS & TAGS

- **Accident prevention signs and tags. - 1926.200**

When appropriate, signs and tags will be used to warn of specific hazards. Types of signs are classified according to their use, and their design is regulated by OSHA standard. All personnel will be instructed in the meaning of the various types of signs. Sign usage includes:

a. Danger Signs (Red, Black & White): indicates immediate danger and denotes that special precautions are necessary.

b. Caution Signs (Yellow Background): warns of a potential hazard or cautions against an unsafe practice.

c. Safety Instruction Signs (White Background): used to provide general instructions and suggestions relative to safety measures.

The wording on signs must be positive, clear, concise, and easy to understand or the sign loses its value.

Accident prevention tags are to warn of hazardous or potentially hazardous conditions that are out of the ordinary, unexpected, or not readily apparent. They are not used where signs, guarding or other positive means of protection are used.

All tags must have:

a. a signal word: Danger"; "Caution"; "Warning"; BIOHAZARD (or its symbol) and a major message, and

b. a major message such as: "High Voltage" or "Do not start". [Major messages indicate the specific hazardous condition.]

The color scheme is basically the same as for signs:

red	=	danger
yellow	=	caution
orange	=	warning
fluorescent orange	=	biological hazard.

a. Danger Tags:	indicate an immediate hazard that presents a threat of death or serious injury.
b. Caution Tags:	indicate a non-immediate hazard or unsafe practice that presents a lesser threat of injury.
c. Warning Tags:	indicate a hazard between "Danger" and "Caution".
d. BIOHAZARD Tags:	indicate the actual or potential presence of a biological hazard and identify equipment, rooms, containers, etc., which may be contaminated.

Pay attention to signs and tags and realize that they are in place for only one reason -- your safety.

SLINGS

- **Rigging equipment for material handling. - 1926.251**

A sling is the assembly which connects a load to the material handling equipment. There are many types of slings including, but not limited to:

a. bridle wire rope sling

b. cable laid endless sling-mechanical joint sling

c. cable laid grommet-hand tucked sling

d. cable laid rope sling-mechanical joint sling

e. strand laid endless sling-mechanical joint sling

f. strand laid grommet-hand-tucked sling

Additionally, slings are made of various materials such as alloy steel chain; wire rope; and natural and synthetic fiber rope. Each of these materials have their own operating limits which include not only capacity, but temperature, kinks, cuts, and specific conditions.

Refer to 29 CFR 1926.251, *Rigging Equipment for Material Handling*, for detailed instructions on the use of each type of sling.

All slings, regardless of type, must be inspected each day before use and all fastenings and attachments must be inspected for damage or defects by a competent person. Depending on work conditions, additional inspections may be required. Damaged or defective slings will be immediately removed from service. Below are safe operating practices which must be followed:

a. slings may not be shortened with knots or bolts or other makeshift devices.

b. sling legs may not be kinked.

c. slings may not be loaded in excess of their rated capacities.

d. slings used in a basket hitch must have the load balanced to prevent slippage.

e. slings must be securely attached to their loads.

f. slings must be padded or protected from the sharp edges of their loads.

g. suspended loads must be kept clear of all obstructions.

h. all employees must be kept clear of loads about to lift and of suspended loads.

i. hands or fingers may not be placed between the sling and its load while the sling is being tightened around the load.

j shock loading is prohibited.

k. a sling may not be pulled from under a load when the load is resting on it.

SOLDERING & BRAZING

Only authorized and trained personnel are permitted to use soldering and brazing equipment. Appropriate PPE, specifically eye protection, must be worn.

An appropriate fire extinguisher will be readily available for immediate use.

Compressed gas cylinders will:

a. have valve protectors in place when not in use or connected for use.

b. be legibly marked to identify the gas contained therein.

c. have the valves closed before the cylinder is moved, when the cylinder is empty, and at the completion of each job.

d. be stored in areas away from intense heat, electric arcs, and high temperature lines.

e. be secured (chained in portable dolly), in storage or transportation, from tipping, falling, rolling, and damage from passing or falling objects.

f. be marked "EMPTY" when appropriate.

g. be removed from service if the regulators or gauges are defective.

h. be used only for the purpose for which they are designed -- for example, cylinders will not be used as rollers or supports.

i. be kept away from stairs.

Regulators and gauges will be inspected daily.

All cylinders, cylinder valves, couplings, regulators, hoses and apparatus will be kept free of oily or greasy substances.

The competent person will ensure that ventilation within a confined space is adequate to negate the possibility of a respiratory or explosion hazard.

A fire watch will be assigned when there is potential a fire might develop. When brazing near a fire hazard and the fire hazard cannot be isolated, shields will be used to confine the heat.

When performing brazing operations capable of producing heat at chemical plants, refineries, or other facilities which have a higher degree of hazard than normal work sites, a hot work permit is generally required.

On the back of the Hot Work Permit is found fire safety instructions which must be read and understood by the persons identified on the permit.

From a safety standpoint, the primary safety hazards associated with soldering and brazing are heat and hazardous fumes.

Soldering and brazing is molecularly bonding components below their melting points. In brazing, a non-ferrous filler material (copper, brass, bronze, and silver alloys) is drawn into closely fitted joints by capillary action and they bond and solidity without melting the components.

In soldering, there may be alloys containing lead, cadmium, beryllium, and zinc. Fumes produced by heating these materials can cause serious health problems.

Other trace metals present in base and filler metals which can give off toxic fumes include arsenic, chromium, bismuth, cobalt, nickel, selenium, thallium, and vanadium.

Soldering and brazing should be conducted in well-ventilated areas assure that hazardous concentrations do not exist. Compounds of these metals may also be present.

Solder alloys melt below 800°F and brazing alloys melt above 800°F.

STAIRS

Stairways. - 1926.1052

Stairways that are not a permanent part of the structure on which construction work is being performed must have landings of at least 30 inches in the direction of travel and extend at least 22 inches in width at every 12 feet or less of vertical rise. Additionally,

a. riser height and tread depth must be uniform within each flight of stairs.

b. where doors or gates open directly on a stairway, a platform will be provided, and the swing of the door must not reduce the effective width of the platform to less than 20 inches.

c. metal pan landings and metal pan treads, when used, must be secured in place before filling with concrete or other material.

d. all parts of stairways will be free of hazardous projections, such as protruding nails.

e. slippery conditions on stairways will be eliminated before use.

f. except during stairway construction:

    1. foot traffic is prohibited on stairways with pan stairs where the treads and/or landings are to be filled at a later date, unless the stairs are temporarily fitted with solid material at least to the top edge of each pan. Temporary treads and landings will be replaced when worn below the level of the top edge of the pan.

    2. foot traffic is prohibited on skeleton metal stairs where permanent treads and/or landings are to be installed at a later date unless the stairs are fitted with secured temporary treads and landings long enough to cover the entire tread and/or landing area.

Treads for temporary service will be made of wood or other solid material and installed the full width and depth of the stair.

Stairways having four or more risers or rising more than 30 inches will be equipped with:

a. at least one handrail; and

b. one stair rail system along each unprotected side or edge.

STEEL ERECTION ACTIVITIES

Effective January 18, 2002, new standards that address the hazards faced by workers involved in steel erection activities went into effect. All affected personnel will have access to these standards and be provided training as appropriate.

Specific hazards that are identified include, but are not limited to: working under loads; hoisting; landing and placing decking; column stability; double connections; loading and placing steel joints; and falls to lower levels.

Additionally, 29 CFR 1926.752, *Site layout, site-specific erection plan and construction sequence,* require the controlling contractor to provide the steel erector with the following notifications:

a. Approval to begin steel erection. Before authorizing the commencement of steel erection, the controlling contractor shall ensure that the steel erector is provided with the following written notifications:

   1. The concrete in the footings, piers and walls and the mortar in the masonry piers and walls has attained, on the basis of an appropriate ASTM standard test method of field-cured samples, either 75 percent of the intended minimum compressive design strength or sufficient strength to support the loads imposed during steel erection.

   2. Any repairs, replacements and modifications to the anchor bolts were conducted in accordance with 29 CFR 1926.755(b).

b. Commencement of steel erection. A steel erection contractor shall not erect steel unless it has received written notification that the concrete in the footings, piers and walls or the mortar in the masonry piers and walls has attained, on the basis of an appropriate ASTM standard test method of field-cured samples,

either 75 percent of the intended minimum compressive design strength or sufficient strength to support the loads imposed during steel erection.

c. Site layout. The controlling contractor shall ensure that the following is provided and maintained:

   1. Adequate access roads into and through the site for the safe delivery and movement of derricks, cranes, trucks, other necessary equipment, and the material to be erected and means and methods for pedestrian and vehicular control. Exception: this requirement does not apply to roads outside of the construction site.

   2. A firm, properly graded, drained area, readily accessible to the work with adequate space for the safe storage of materials and the safe operation of the erector's equipment.

d. Pre-planning of overhead hoisting operations. All hoisting operations in steel erection shall be pre-planned to ensure that the requirements of 29 CFR 1926.753(d) are met.

e. Site-specific erection plan. When we elect, due to conditions specific to a site, to develop alternate means and methods that provide employee protection in accordance with 29 CFR 1926.753(c)(5); .757(a)(4); or .757(e)(4), a site-specific erection plan will be developed by a qualified person and be available at the work site. Guidelines for establishing a site-specific erection plan are contained in Appendix A to subpart R, Steel Erection.

TRAINING

All training required by the steel erection standards will be provided by qualified person(s).

Fall hazard training may be accomplished using our Fall Protection Program with the exception:

a. each employee engaged in a steel erection activity who is on a walking/working surface with an unprotected side or edge more than 15 feet above a lower level must be protected from fall hazards by guardrail systems, safety net systems, personal fall arrest systems, positioning device systems or fall restraint systems.

b. perimeter safety cables. On multi-story structures, perimeter safety cables shall be installed at the final interior and exterior perimeters of the floors as soon as the metal decking has been installed.

c. each connector will:

   1. be protected from fall hazards of **more than two stories or 30 feet above a lower level, whichever is less;**

   2. have completed connector training in accordance with §1926.761.

   3. be provided, at heights over **15 and up to 30 feet above a lower level**, with a personal fall arrest system, positioning device system or fall restraint system and wear the equipment necessary to be able to be tied off.

d. A controlled decking zone (CDZ) may be established in that area of the structure **over 15 and up to 30 feet above a lower level where metal decking is initially being installed and forms the leading edge of a work area.**

1. each employee working at the leading edge in a CDZ shall be protected from fall hazards of more than **two stories or 30 feet, whichever is less.**
2. access to a CDZ shall be limited to only those employees engaged in leading edge work.
3. the boundaries of a CDZ shall be designated and clearly marked. The CDZ shall not be more than 90 feet wide and 90 feet deep from any leading edge. The CDZ shall be marked by the use of control lines or the equivalent.
4. each employee working in a CDZ shall have completed CDZ training in accordance with §1926.761.
5. unsecured decking in a CDZ shall not exceed 3,000 square feet.
6. safety deck attachments shall be performed in the CDZ from the leading edge back to the control line and shall have at least two attachments for each metal decking panel.
7. final deck attachments and installation of shear connectors shall not be performed in the CDZ.

Special training programs:

In addition to the above, training will be provided to address the following issues:

1. multiple lift rigging procedure: each employee who performs multiple lift rigging must be provided training in:
   a) the nature of the hazards associated with multiple lifts; and
   b) the proper procedures and equipment to perform multiple lifts required by 29 CFR 1926.753(e), printed below:

(e) Multiple lift rigging procedure.

(1) A multiple lift shall only be performed if the following criteria are met:

(i) A multiple lift rigging assembly is used;

(ii) A maximum of five members are hoisted per lift;

(iii) Only beams and similar structural members are lifted; and

(iv) All employees engaged in the multiple lift have been trained in these procedures in accordance with §1926.761(c) (1).

(v) No crane is permitted to be used for a multiple lift where such use is contrary to the manufacturer's specifications and limitations.

(2) Components of the multiple lift rigging assembly shall be specifically designed and assembled with a maximum capacity for total assembly and for each individual attachment point. This capacity, certified by the manufacturer or a qualified rigger, shall be based on the manufacturer's specifications with a 5 to 1 safety factor for all components.

3) The total load shall not exceed:

(i) The rated capacity of the hoisting equipment specified in the hoisting equipment load charts;

(ii) The rigging capacity specified in the rigging rating chart.
to copy for internal use.

(4) The multiple lift rigging assembly shall be rigged with members:

(i) Attached at their center of gravity and maintained reasonably level;

(ii) Rigged from top down; and

(iii) Rigged at least 7 feet apart.

(5) The members on the multiple lift rigging assembly shall be set from the bottom up.

(6) Controlled load lowering shall be used whenever the load is over the connectors.

2. connector procedures: each connector must be provided training in the following areas:

   a) the nature of the hazards associated with connecting; and

   b) the establishment, access, proper connecting techniques and work practices required by 29 CFR 1926.756(c) and 29 CFR 1926.760(b), printed below:

29 CFR 1926.756(c)

(1) Double connections at columns and/or at beam webs over a column. When two structural members on opposite sides of a column web, or a beam web over a column, are connected sharing common connection holes, at least one bolt with its wrench-tight nut shall remain connected to the first member unless a shop-attached or field-attached seat or equivalent connection device is supplied with the member to secure the first member and prevent the column from being displaced (See Appendix H to this subpart for examples of equivalent connection devices).

(2) If a seat or equivalent device is used, the seat (or device) shall be designed to support the load during the double connection process. It shall be adequately bolted or welded to both a supporting member and the first member before the nuts on the shared bolts are removed to make the double connection.

29 CFR 1926.760(b)

Connectors. Each connector shall:

(1) Be protected in accordance with paragraph (a)(1) of this section from fall hazards of more than two stories or 30 feet (9.1 m) above a lower level, whichever is less;

(2) Have completed connector training in accordance with §1926.761; and

(3) Be provided, at heights over 15 and up to 30 feet above a lower level, with a personal fall arrest system, positioning device system or fall restraint system and wear the equipment necessary to be able to be tied off; or be provided with other means of protection from fall hazards in accordance with paragraph (a) (1) of this section.

3. When controlled decking zone procedures (CDZs) are used, each affected employee will be training in the following areas:

   a) the nature of the hazards associated with work within a controlled decking zone; and

b) the establishment, access, proper installation techniques and work practices required by §1926.760(c) and §1926.754(e), printed below:

29 CFR 1926.760(c):

Controlled Decking Zone (CDZ). A controlled decking zone may be established in that area of the structure over 15 and up to 30 feet above a lower level where metal decking is initially being installed and forms the leading edge of a work area. In each CDZ, the following shall apply:

(1) Each employee working at the leading edge in a CDZ shall be protected from fall hazards of more than two stories or 30 feet (9.1 m), whichever is less.

(2) Access to a CDZ shall be limited to only those employees engaged in leading edge work.

(3) The boundaries of a CDZ shall be designated and clearly marked. The CDZ shall not be more than 90 feet (27.4 m) wide and 90 (27.4 m) feet deep from any leading edge. The CDZ shall be marked by the use of control lines or the equivalent. Examples of acceptable procedures for demarcating CDZ's can be found in Appendix D to this subpart.

(4) Each employee working in a CDZ shall have completed CDZ training in accordance with §1926.761.

(5) Unsecured decking in a CDZ shall not exceed 3,000 square feet (914.4 m^2).

(6) Safety deck attachments shall be performed in the CDZ from the leading edge back to the control line and shall have at least two attachments for each metal decking panel.

(7) Final deck attachments and installation of shear connectors shall not be performed in the CDZ.

29 CFR 1926.754(e):

Metal decking.

(1) Hoisting, landing and placing of metal decking bundles.

(i) Bundle packaging and strapping shall not be used for hoisting unless specifically designed for that purpose.

(ii) If loose items such as dunnage, flashing, or other materials are placed on the top of metal decking bundles to be hoisted, such items shall be secured to the bundles.

(iii) Bundles of metal decking on joists shall be landed in accordance with §1926.757(e)(4).

(iv) Metal decking bundles shall be landed on framing members so that enough support is provided to allow the bundles to be unbanded without dislodging the bundles from the supports.

(v) At the end of the shift or when environmental or jobsite conditions require, metal decking shall be secured against displacement.

(2) Roof and floor holes and openings. Metal decking at roof and floor holes and openings shall be installed as follows:

(i) Framed metal deck openings shall have structural members turned down to allow continuous deck installation except where not allowed by structural design constraints or constructability.

(ii) Roof and floor holes and openings shall be decked over. Where large size, configuration or other structural design does not allow openings to be decked over (such as elevator shafts, stair wells, etc.) employees shall be protected in accordance with §1926.760(a) (1).

(iii) Metal decking holes and openings shall not be cut until immediately prior to being permanently filled with the equipment or structure needed or intended to fulfill its specific use and which meets the strength requirements of paragraph (e)(3) of this section, or shall be immediately covered.

(3) Covering roof and floor openings. (i) Covers for roof and floor openings shall be capable of supporting, without failure, twice the weight of the employees, equipment and materials that may be imposed on the cover at any one time.

(ii) All covers shall be secured when installed to prevent accidental displacement by the wind, equipment or employees.

(iii) All covers shall be painted with high-visibility paint or shall be marked with the word "HOLE" or "COVER" to provide warning of the hazard.

(iv) Smoke dome or skylight fixtures that have been installed, are not considered covers for the purpose of this section unless they meet the strength requirements of paragraph (e) (3) (i) of this section.

(4) Decking gaps around columns. Wire mesh, exterior plywood, or equivalent, shall be installed around columns where planks or metal decking do not fit tightly. The materials used must be of sufficient strength to provide fall protection for personnel and prevent objects from falling through.

(5) Installation of metal decking.

(i) Except as provided in §1926.760(c), metal decking shall be laid tightly and immediately secured upon placement to prevent accidental movement or displacement.

(ii) During initial placement, metal decking panels shall be placed to ensure full support by structural members.

(6) Derrick Floors.

(i) A derrick floor shall be fully decked and/or planked and the steel member connections completed to support the intended floor loading.

(ii) Temporary loads placed on a derrick floor shall be distributed over the underlying support members so as to prevent local overloading of the deck material.

Note: Per Appendix E to Subpart R -- *Training: Non-mandatory Guidelines for Complying with* §1926.761, the training requirements for steel erection activities will be deemed to have been met if employees have completed a training course on steel erection, including instruction in the provisions of the steel erection standards, that has been approved by the U.S. Department of Labor Bureau of Apprenticeship.

WORKING UNDER LOADS

a. All loads shall be rigged by a qualified rigger

b. Routes for suspended loads will be pre-planned to ensure that no employee is required to work directly below a suspended load except for those engaged in the initial connection of the steel or those necessary for the hooking or unhooking of the load.

c. When working under suspended loads:

   1. the materials being hoisted must be rigged to prevent unintentional displacement.

   2. hooks with self-closing safety latches or their equivalent must be used.

HOISTING

a. all the provisions of 29 CFR 1926.550, *Cranes and Derricks*, apply to hoisting and rigging with the **exception** that cranes or derricks may **be used** to hoist employees on a personnel platform **when performing steel erection activities.**

b. a pre-shift visual inspection of cranes must be accomplished by a competent person and the competent person must also observe cranes in operation. Remember, a competent person has the authority to stop work if an unsafe work practice is observed. Furthermore, a crane operator has the authority to stop work if an unsafe condition exists.

c. cranes being used in steel erection activities must be visually inspected prior to each shift by a competent person; the inspection shall include observation for deficiencies during operation. At a minimum this inspection shall include the following:

   1. all control mechanisms for maladjustments.

   2. control and drive mechanism for excessive wear of components and contamination.

   3. crane safety devices.

   4. air, hydraulic, and other pressurized lines and systems for condition.

   5. hooks and latches for deformation, chemical damage, cracks, or wear.

   6. wire rope travel and attachment.

   7. electrical apparatus for malfunctioning, signs of excessive deterioration, dirt, or moisture accumulation.

   8. ground conditions.

   9. leveling.

d. only a qualified person can inspect the rigging.

TILE CUTTING

Only trained and authorized personnel will operate tile cutting equipment. The following guidelines will be used during all tile cutting operations.

a. follow the manufacturer's recommendations for the safe use of the equipment.
b. use the correct blade (size, type, speed) for the job properly tightened. Inspect the blade and all equipment before use.
c. ensure all safety guards are functioning properly.
d. never operated a hand held saw above shoulder height.
e. wear proper safety equipment including eye, hand and skin protection. Depending on the job, respiratory protection or dust masks may be required.
f. establish a control zone and keep others out who are not directly involved with the work at hand.
g. ensure there is adequate coolant/water when appropriate.
h. never operate an internal combustion saw in a confined space.

TOOLS: HAND

- **General requirements. - 1926.300**
- **Hand tools. - 1926.301**

Hand tools shall be used only for the purpose for which they are designed.

Hand tools will be kept clean and, where appropriate, oiled.

Hand tools which are damaged will not be used.

Hand held cutting tools will be kept sharp and will be sheathed or retracted when not in use.

When using a striking tool such as a hammer or chisel, safety glasses or safety goggles will be used.

Do not force tools.

If you are unfamiliar with the proper procedure for using a tool, ask your Supervisor for instruction.

Power tools may be operated only by those persons who are qualified by training or experience.

Do not alter guards on power tools; wear appropriate PPE.

Electrical tools must be grounded and, in the absence of permanent wiring, a Ground Fault Circuit Interrupter must be used.

Electric tools will not be lifted by their cords and pneumatic tools will not be lifted by their hoses.

TOOLS: PNEUMATIC POWERED

- **Eye and face protection. - 1926.102**
- **General requirements. - 1926.300**
- **Power-operated hand tools. - 1926.302**

Pneumatic powered tools must be safeguarded whenever there are hazardous employee exposures. This is especially important for point of operation guarding.

Three specific hazards associated with pneumatic powered tools which are unique to their use are noise levels, tool retention, and air hose pressure.

Care must be taken to assure that noise levels are within acceptable limits (noise monitoring may be necessary) and, if required, engineering controls and/or ear protection will be employed.

If there is a possibility of tool ejection during use, a tool retainer must be installed.

Safety will dictate that hose and hose connections be designed for the pressure and service to which they are subjected.

Eye protection will be worn when using pneumatic powered tools in accordance with the owner/operator's manual.

When using a jackhammer, care must be taken to ensure that the employee is not exposed to unsafe levels of respirable dust or crystalline silica.

The PEL for particles not otherwise regulated is 5.0 mg/m^3. The PEL for respirable dust containing crystalline silica is determined by the below formula:

PEL = 10 mg/m^3 ÷ (%SiO2+2), where %SiO2+2 refers to the amount of crystalline silica measured in the sample.

Our operations would not exceed these PEL's and respiratory protection is not required.

TOOLS: POWDER-ACTUATED

- **Eye and face protection. - 1926.102**
- **General requirements. - 1926.300**
- **Power-operated hand tools. - 1926.302**

A powder-actuated fastening tool propels a nail, pin, or fastener through an object to fasten it to another object. These tools, if misused, are extremely dangerous because essentially, they are similar to a pistol or rifle.

The speed of the projectile may range from 300 ft/second to 1290 ft/second.

Only trained and authorized persons may operate a powder actuated tool and, for safety, these tools should be kept secured when not in use.

Prior to use, the tool must be inspected and tested according to the manufacturer's instruction manual which should be kept with the tool.

Defective tools must not be used and they must be taken out of service.

Use of appropriate personal protective equipment - including, at least, eye/face and ear protection -- is required not only for the operator, but also those employees in the vicinity. PPE will be in accordance with the owner/operator's manual.

On the job site, each tool should be accompanied by: 1) its container; 2.) the operator's instruction & service manuals; 3) the tool inspection record; and 4) service tools & accessories.

Tools must not be loaded until just before firing and, under no circumstances, are they to be pointed at any person. Hands must be kept clear of the open barrel end. A powder activated tool must never be left unattended -- loaded or empty -- for safety and security reasons.

Fasteners must not be driven into very hard or brittle materials such as cast iron, glazed tile, surface-hardened steel, glass block, live rock, face brick or hollow tile; easily penetrated materials unless these materials are backed by a substance; nor a damaged area caused by an unsatisfactory fastening.

Of course, these tools must never be used in an explosive or flammable atmosphere.

Before fastening questionable material, the operator can determine its suitability by using a fastener as a center punch. If the fastener point does not easily penetrate, is not blunted, and does not fracture the material, initial test fastenings will be made in accordance with the manufacturer's instructions.

The tool must be held perpendicular to the work surface and in the event of a misfire, the operator must hold the tool firmly against the work surface and follow, exactly, the manufacturer's instructions.

Tools must be used with the correct shield, guard, or attachments recommended by the manufacturer.

Because the case and load are color coded, it is imperative that the operator can distinguish the colors of brass and nickel as well as gray, brown, green, yellow and red and purple.

VEHICLES

Only authorized persons may operate a company vehicle. This authorization will not be granted until operating knowledge and ability has been successfully demonstrated to the Safety Director.

Before operation, a safety check will be made ensuring fluid levels are correct, obvious bolts are tight, lights and horn are functioning, tire pressures are correct, fire extinguisher is present and charged, and damage is noted.

Seat belts will be worn and all traffic laws, including speed limits, will be observed. During fueling, vehicles must be turned off and all fluid levels checked.

Before backing up any vehicle, check behind and blow horn for the safety of others.

When hauling a load, the cargo should be strapped or blocked to prevent shift.

VENTILATION

- **Ventilation. - 1926.57**

There may be times in the course of our work such as grinding, cutting, sawing, sanding, etc. that hazardous dusts are released into the atmosphere that exceed the concentrations specified in the *"Threshold Limit Values of Airborne Contaminants for 1970"* of the American Conference of Governmental Industrial Hygienists, listed below:

MINERAL DUSTS	
Substance	**(a)mppcf**
SILICA Crystalline Quarts Threshold Limited calculated from the formula Cristobalite. Amorphous, including natural diatomaceous earth	 (b)(250) ÷ (%SiO2+5) 20
SILICATES (Less than 1% crystalline silica) Mica Portland Cement Soapstone Talc (non-abestiform) Talc (fibrous), use asbestos limit	 20 20 20 20
GRAPHITE (Natural)	15
INERT OR NUISANCE PARTICULATES Note 1 Covers all organic and inorganic particulates not otherwise regulated. Same as Particulates Not Otherwise Regulated. Note 2 Inert or Nuisance Dusts includes all mineral, inorganic, and organic dusts as indicated by examples in TLV's Appendix D.	50 (or 15 mg/m³ which-ever is the smaller) of total dust <1% SiO Note 1 See Table above

a. Millions of particles per cubic foot or air, based on impinger samples counted by light field techniques.

b. The percentage of crystalline silica in the formula is the amount determined from airborne samples, except in those instances in which other methods have been shown to be applicable.

Below the above threshold limits, no action is required; however, employees may wear dust masks for personal comfort.

As always, engineering controls are preferred to personal protective equipment to deal with job site hazards. Therefore, local exhaust ventilation is a preferred method of maintaining atmospheres that have dust levels below the concentrations noted in the Dust Table, above.

Local exhaust ventilation must be designed so that they prevent dispersions of dust in concentrations causing harmful exposure and that dusts are not drawn through the work area of employees.

The dust collected by an exhaust or ventilating system will be discharged to the outside atmosphere.

If concentrations are so great that a dust separator is used, the dust and refuse will be disposed of in such a manner as to not harm employees. The exhaust will still be discharged to the outside atmosphere.

Of course, if the above ventilation procedures do not reduce the dust levels to acceptable limits, respirators will be used.

WELDING, CUTTING AND BRAZING

- **Gas welding and cutting. - 1926.350**
- **Arc welding and cutting. - 1926.351**
- **Fire prevention. - 1926.352**
- **Ventilation and protection in welding, cutting, and heating. - 1926.353**
- **Welding, cutting, and heating in way of preservative coatings. - 1926.354**

Only authorized and trained personnel are permitted to use welding, cutting, and/or brazing equipment. Appropriate PPE must be worn by all welders.

An appropriate fire extinguisher will be readily available for immediate use.

Compressed gas cylinders will:

a. have valve protectors in place when not in use or connected for use.

b. be legibly marked to identify the gas contained therein.

c. have the valves closed before the cylinder is moved, when the cylinder is empty, and at the completion of each job.

d. be stored in areas away from intense heat, electric arcs, and high temperature lines.

e. be secured (chained in portable dolly), in storage or transportation, from tipping, falling, rolling, and damage from passing or falling objects.

f. be marked "EMPTY" when appropriate.

g. be removed from service if the regulators or gauges are defective.

h. be used only for the purpose for which they are designed -- for example, cylinders will not be used as rollers or supports.

i. be kept away from stairs.

Regulators and gauges will be inspected daily.

All cylinders, cylinder valves, couplings, regulators, hoses and apparatus will be kept free of oily or greasy substances.

Electric welders will be inspected daily before use with emphasis on the cables. All splicing of cables must maintain the insulated protection with no exposed metal parts. Cables in need of repair will not be used.

The competent person will ensure that ventilation within a confined space is adequate to negate the possibility of a respiratory or explosion hazard.

A fire watch will be assigned when there is potential a fire might develop. When welding, cutting, or brazing near a fire hazard and the fire hazard cannot be isolated, shields will be used to confine the sparks, heat, and slag.

When performing operations capable of producing heat at chemical plants, refineries, or other facilities which have a higher degree of hazard than normal work sites, a hot work permit is generally required. Included in these types of operations are burning, cutting, heating, and welding.

On the back of the Hot Work Permit is found fire safety instructions which must be read and understood by the persons identified on the permit.

IDENTIFICATION OF HAZARDOUS JOB SITE MATERIALS

The presence of asbestos, crystalline silica, lead, and even mercury is possible on many job sites. Before work begins, the appropriate PPE and respiratory protection requirements will be discussed with employees.

Because of the chronic (long term) nature of these hazards, detrimental health effects due to exposure would not be immediately noticed.

The competent person on site will prevent exposures to these materials.

Areas that contain the below materials will be cordoned off or protected with appropriate warning signs. Do not enter any restricted area unless dictated by job assignment and only after specific training for dealing with these hazards. The training would include PPE, respiratory protection, work procedures, medical surveillance, containment, hygiene, handling, testing, and labeling.

These materials may be “discovered” as work progresses and employees will be protected from these hazards by:

a. identification of these items by the competent person.

b. informing the owner, project designer, or engineer of the hazards.

c. securing the area in question until testing proves samples to be negative.

Subcontractors who deal with these hazards will have specific programs that address the above issues.

ASBESTOS

Substance Technical Information for Asbestos - Non-Mandatory - 1926.1101 App H

Asbestos can be found in pipe, wall, and boiler insulation; exterior sheeting; and flooring. Friable or crumbling asbestos presents the most hazards as it can float in the air and be inhaled into the respiratory system. Without respiratory protection, the microscopic asbestos fibers can enter the deepest portion of the lung, causing scar tissue to develop and stiffen the lung. The net result is a reduction of gas exchange -- a condition called asbestosis. High levels of exposure to asbestos greatly increase one's chance of lung cancer.

CRYSTALLINE SILICA
Silica, Crystalline (Respirable Size), National Institute of Health

Crystalline Silica can be readily found on many job sites in rocks as well as many concrete and masonry products. Crystalline Silica can be released in the air when employees are performing such tasks as:

a. chipping, hammering, drilling, crushing, or hauling rock.
b. abrasive blasting.
c. sawing, hammering, drilling, or sweeping concrete or masonry.

Unprotected respiratory exposure to crystalline silica may cause a lung disease called silicosis as well as cancer and death.

LEAD
Substance Data Sheet for Occupational Exposure to Lead - 1926.62 App A

Lead can be found in water pipes, soldering, and paint. Lead is a heavy, toxic metal which can be absorbed into your body by ingestion and/or inhalation. It is a cumulative poison which can stay in your body for decades.
While massive doses of lead can kill in a matter of days, the more likely scenario on a job site is moderate exposure to asbestos or lead which probably would not create any health problems for years -- if at all.

OSHA COMPLIANCE PROGRAMS

When you are confronted by situations listed below, you must perform your tasks in accordance with our written programs which comply with specific OSHA standards. Below is an overview of each program.

Control of Hazardous Energy

Control of hazardous energy (lockout/tagout) procedures apply when there is a possibility of injury due to the unexpected energization, start up or release of stored energy while constructing, installing, setting up, adjusting, inspecting, modifying, maintaining or servicing fixed machinery. Lockout/Tagout is not required for work on cord and plug connected electric equipment for which exposure to hazards can be controlled by unplugging equipment or to hot tap operations.

Failure to follow lockout/tagout procedures may result in being crushed, dismembered, mangled, paralyzed, electrocuted, sliced, or punctured by the sudden release of energy from the following types of sources: capacitor; chemical, counter weight, electrical, engine, flywheel, hydraulic, pneumatic, spring, thermal, or gravity.

Procedures

Preparation for Shutdown:	Using the Energy Source Evaluation, all isolating devices must be located.
Equipment Shutdown:	Inform the affected person and use normal shut down procedures.
Equipment Isolation:	Physically isolate the equipment from its energy source(s) -- there may be more than one.
Device application:	Apply color coded locks and/or tags to hold the isolating devices in a “Neutral” or “Off” position.
Release of Stored Energy:	Dissipate stored energy.
Verification of Isolation:	Prior to work, operate machine controls and ensure the machine will not operate.
Release from Lockout/Tagout:	The person who applied the devices is the one who removes them after ensuring the area is clear and affected employees are informed.

Authorized employees will lockout/tagout the energy isolating devices with assigned individual locks. Locks or other lockout/tagout devices will be used for no other purpose, will be color coded, and will indicate the identity of the authorized employee applying the device. A lock can be used without a tag if only one circuit or piece of equipment is being de-energized, the lockout period does not extend beyond the work shift, and employees are aware that a tag is not being used with the lock.

A tag may be used alone if it provides full employee protection and is used with another safety measure. Other safety measures include the removal of an isolating circuit element, the blocking of a controlling switch, or the opening of an extra disconnecting device. Tags must warn against the hazardous conditions if the machine or equipment is energized and shall include a legend like the following: Do Not Start; Do Not Open; Do Not Close; Do Not Operate; etc...

All stored energy must be isolated. Should there be a possibility of re-accumulation of stored energy; verification of isolation must be continued until servicing is complete. The authorized employee shall operate the normal operating controls to verify that the machine or equipment has been de-energized and that it will not operate. After the above test, the operating controls will be returned to the “Neutral” or “Off” position.

Before the lockout/tagout devices are removed and energy is restored: the work area will be inspected to ensure the nonessential items have been removed and the machine or

equipment components are operationally intact; the work area will be checked to ensure all employees have been positioned safely or removed. A device can only be removed by the one who applied it unless that person is not available. Another competent person may remove the device as long as the employee who applied it is informed.

If service and maintenance require more than one individual, one person will be designated as Group Leader and will maintain overall responsibility for employees working under him/her.

Lockout/tagout procedures extending into a second shift:

a. If the energy isolation device will accept two lockout/tagout devices, the authorized employee coming on duty will put his device in place before the employee going off duty removes his device.

b. If the energy isolation device will not accept two devices, the incoming and outgoing authorized employees will notify affected employees that a lockout/tagout change is taking place; both employees will insure the surrounding area is free of tools and employees; the outgoing employee will remove his device and the incoming employee will install his; finally, the incoming employee will notify affected employees the change is completed.

Exposure Control Plan

(for bloodborne pathogens or other infectious materials)

An exposure control plan is required when emergency medical response is not available within a reasonable time frame and personnel are assigned as first aid providers as an additional duty.

The primary hazard relates to the possibility of infection resulting from exposure to blood-borne pathogens or other infectious materials while providing first aid to a trauma victim or cleaning up bodily fluids after an incident.

As a statement of policy, should an exposure control plan be required, Universal Precautions will be used. Essentially, this means that each trauma victim's blood, bodily fluids, and other potentially infectious materials will be treated as if they are know to be infectious.

First aid providers must understand:

a. the hazards of bloodborne pathogens and other infectious materials.

b. engineering & work practice controls designed to minimize possible exposure such as:

    1. hand washing equipment & procedures.

    2. eating; drinking & smoking prohibitions.

3. the containment of contaminated sharps.
4. the containment of other regulated waste.
5. the disposal of contaminated sharps & regulated waste
6. controlling splashing/spraying of potentially infectious materials.
7. the prohibition of mouth pipetting (the mouth suction of blood through a tube).

c. the need to place an impermeable barrier between potential infectious materials and the provider's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes using:
   1. disposable gloves
   2. utility gloves
   3. eye & respiratory protection
   4. protective body clothing

d. hepatitis B epidemiology and how bloodborne pathogens are transmitted.

e. the importance of hepatitis B vaccination within 24 hours of possible exposure.

f. the procedure for incident report preparation and the importance of completing them, in writing, before the end of the work shift.

Fall Protection

Fall protection is required for employees working six feet or more above walking/working surface, when there is a potential for objects to fall on them, or when they are working around covers.

The obvious hazard is falling or being hit by a falling object.

A fall protection plan is required when conventional fall protection systems are infeasible.

Through training, employees must know where conventional fall protection systems are required such as when working on or around:

1. unprotected sides and edges
2. leading edges
3. hoist areas
4. holes
5. formwork & reinforcing steel
6. ramps, runways & other walkways.
7. excavations
8. dangerous equipment
9. overhand bricklaying & related work

10. roofing work on low-sloped roofs
11. steep roofs
12. precast concrete erection
13. residential construction
14. wall openings

Additionally, employees must understand:

a. the selection, use, and maintenance of fall protection system(s).
b. the types of fall protection systems:
    1. guardrail system
    2. personal fall arrest system
    3. safety net system
    4. warning line system
    5. safety monitoring system
    6. positioning device system
    7. controlled access zone (CAZ)
    8. covers
    9. protection from falling objects.

Forklifts

Forklifts include: fork trucks; tractors; platform lift trucks; motorized hand trucks; and other specialized industrial trucks powered by electric motors or internal combustion engines.

The primary hazards involved in truck operation are:

1. physically hitting a person/object with the truck or load.
2. having a load fall and hit the operator or other person.
3. having the truck tip and crush the operator or other person.
4. fire or explosion during refueling/recharging.

Supervisors should ensure that truck operators are authorized by the Program Administrator. Authority to operate a truck will be revoked if unsafe acts are observed or it is apparent that the operator has not retained the knowledge and job skills necessary to safely perform truck operations.

Supervisors should caution employees not involved with truck operations to stay clear of them due to limited visibility of the operator and the size and weight of the vehicle and load.

Hazard Communication

Practically all chemical products have physical or health hazards if they are inadvertently spilled or improperly used. Our Hazard Communication Plan details the methods used to keep our employees informed of these potential hazards.

The Program Administrator will ensure that all personnel understand:

a. the importance and use of labels; material safety data sheets (MSDS); and the ready accessibility of MSDS.
b. the physical & health hazards of chemicals used in the workplace.
c. the methods used to detect the release of a hazardous chemical.
d. the methods to protect oneself from chemical hazards including PPE; work practices; & emergency procedures.
e. the need to share product information with other contractors.

Hearing Conservation

Supervisors are to ensure that employees are not exposed to occupational noises that exceed the levels listed below. Excessive noise may cause permanent hearing loss. Supervisors should be aware that hearing loss is often painless and unnoticeable.
Permissible Noise Exposures

Duration per day, hours	Sound level dBA slow response
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110
0.25 or less	115

The Program Administrator will ensure that applicable standards are posted, medical surveillance and noise monitoring are instituted, and that all affected personnel understand the process of hearing and the importance of preventing hearing loss.

Permit-Required Confined Space

Permit-required confined spaces may present a very hazardous environment if specific procedures, testing, and training are not implemented prior to entry. As a reminder:

A confined space is a space that:

is large enough and so configured that an employee can bodily enter and perform assigned work; and

has limited or restricted means for entry or exit. These spaces may include: ventilation or exhaust ducts, bins and tanks, boilers, sewers, tunnels and open top spaces more that 4 feet in depth such as pits, tubs, and vessels; and

is not designed for continuous employee occupancy.

A permit-required confined space is:

a confined space that contains any recognized serious safety or health hazards. These hazards may be: engulfment by materials; entrapment by space shape; inhalation of hazardous (possibly fatal) atmospheres.

Supervisors should ensure that employees understand:

1. the need to identify and evaluate permit space hazards before entry.
2. the need to test conditions before entry and monitor conditions during entry.
3. how to prevent unauthorized entry.
4. how to eliminate or control hazards for safe permit-space entry operations.
5. the need to ensure that at least one attendant is stationed outside the permit-required space for the duration of the entry operations.
6. how to coordinate and monitor entry operations when we are working with employees of another contractor or client within a permit-required confined space.
7. our procedures for emergency rescue.
8. the establishment of a written procedure for preparation, issuance, use, and cancellation of entry permits.

Personal Protective Equipment

A hazard assessment will be made on all job sites to determine what types of personal protective equipment (PPE) are appropriate. A major part of this hazard assessment will be determining what PPE needs can be eliminated through feasible engineering controls or work procedures.

Types of hazard categories that are considered are: impact; penetration; compression; chemical; heat; harmful dust; and light radiation.

The focus of PPE is to eliminate eye, hand, foot, limb, and head injury. Visitors exposed to the identified hazards will be loaned appropriate PPE (and given instruction in its use) prior to hazard exposure.

You must understand the limitations of your PPE; the correct procedure for putting on, adjusting, and removing the PPE; and the proper care, maintenance, and useful life of the PPE.

Cleanliness of PPE is of importance particularly when dealing with eye protection where fogging, scratches, or dirt can render the PPE a hazard rather than protection from a hazard.

Unique PPE required for job performance such as hard hats, respirators, ear plugs, safety goggles, etc. will be supplied to the employees. They are responsible for maintenance of the equipment issued to them. Items of PPE that are damaged or non-functioning should be turned in for repair or replacement.

For personal comfort and to eliminate nuisance noises and nuisance respiratory conditions that are not at or above the threshold level for required protection, dust masks and ear plugs may be used at any time.

Respiratory Protection

As a supervisor, it is extremely important that you do not allow employees to be exposed to atmospheres that do not contain clean, breathable air free from contaminants that exceed permissible exposure limits.

Respiratory hazards can range from mildly irritating to fatal.

Because of the serious consequences of improperly using respiratory protection, those for whom it applies, must understand:

1. the importance of medical approval for respiratory use.
2. the respirator selection process.
3. how to determine the service life of particulate filters.
4. fit testing.
5. user seal tests.
6. the importance of work area surveillance.
7. cleaning, inspection & maintenance of respirators.

Of course, job sites often contain nuisance dusts that do not exceed permissible exposure limits. In these cases, employees may wear dust masks for personal comfort. Supervisors should caution those wearing dust masks that they do not offer true respiratory protection.

Scaffolds & Ladders

Scaffold and ladder accidents are often quick and devastating. The primary hazards are: falls, electrical shock, and being hit by falling objects.

On the job site, supervisors must ensure that employees are:

1. following established procedures for dealing with the above hazards.
2. properly using both scaffolds and ladders

3. not exceeding the load and the load-carrying capacities of the scaffolds and ladders.

During routine job site inspections, supervisors should be constantly vigilant for violations of the below ladder safety rules and take immediate corrective action to ensure the safety of our employees:

a. a stairway or a ladder will be provided at all personnel points of access where there is a break in elevation of 19 inches or more.

b. ladders will never be overloaded.

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

d. ladders will not be tied or fastened together unless they are so designed.

e. portable ladders used for gaining access to an upper level will extend at least 3 feet above the upper landing surface or the ladder will be secured at its top.

f. ladders must be free of oil, grease, or other slipping hazards.

g. ladders must be used for the purpose for which they were designed.

h. non-self supporting ladders will be used at an angle that the horizontal distance from the top support to the foot of the ladder is approximately ¼ of the working length of the ladder.

i. ladders will only be used on stable and level surfaces unless secured to prevent displacement.

j. ladders shall not be used on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental displacement.

k. ladders placed in any location where they can be displaced by workplace activities or traffic will be secured to prevent accidental displacement, or a barricade will be used to keep the activities or traffic away from the ladder.

l. the area around the top and bottom of the ladder shall be kept clear.

m. ladders shall not be moved, shifted, or extended while occupied.

n. the top step of a stepladder shall not be used as a step.

o. portable ladders with structural defects will be immediately marked in a manner that readily identifies them as defective and removed from service.

p. when ascending or descending a ladder, one must face the ladder.

q. employees must use at least one hand to grasp the ladder when progressing up and/or down the ladder.

r. employees are not to carry any object or load that could cause loss of balance and a resultant fall.

Jobsite Forms

ED TAYLOR CONSTRUCTION SOUTH, INC.

Project Emergency Phone Numbers

PROJECT NAME: _____

PROJECT ADDRESS: _____

_____

Main Office: **(813) 623-3724**

Police: **911 or** _____
(If no 911 Service Available)

Fire: **911 or** _____
(If no 911 Service Available)

Emergency Responder: **911 or** _____
(If no 911 Service Available)

Hospital:

_____	_____
(Name/Position)	**(Telephone Number)**
_____	_____
(Name/Position)	**(Telephone Number)**
_____	_____
(Name/Position)	**(Telephone Number)**
_____	_____
(Name/Position)	**(Telephone Number)**
_____	_____
(Name/Position)	**(Telephone Number)**
_____	_____
(Name/Position)	**(Telephone Number)**

The telephone number of this facility is: _____

THE ADDRESS OF THIS FACILITY IS:
(To be given to emergency responders)

_____

_____

ED TAYLOR CONSTRUCTION SOUTH, INC.

Designation of Competent Person(s)

Each individual listed below, by virtue of training and/or experience, is designated a "Competent Person" as that designation relates to the area of expertise noted.

A competent person is one who is capable of identifying existing and predictable hazards in the surrounding or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

(Name)	(Area of Expertise)
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

_____
BRIAN S. JACKSON
Safety Director

Job Site Checklist

- Excavating
- General
- Scaffolds
- Standard
- Steel Erection

JOB SITE CHECKLIST

[Excavating]

Job Site Identification: _____ Date: _____

_____
(Signature of Competent Person)

Check appropriate box:	Yes	No	NA
Postings			
a. OSHA Form 3165	☐	☐	☐
b. OSHA Form 300A (February 1 to April 30)	☐	☐	☐
c. Emergency Phone Numbers (Hospital - Emergency Response - Main Office)	☐	☐	☐
Excavating			
a. Designated competent person on site (Must have authority to stop work)	☐	☐	☐
b. Underground utilities located, marked, utilities notified	☐	☐	☐
c. Daily inspection by competent person for hazards	☐	☐	☐
d. Excavation: Depth less than 5 feet			
1. Inspection by competent person to ensure no indication of potential cave-in	☐	☐	☐
e. Excavation: Depth greater than 5 feet			
1. Sloping	☐	☐	☐
2. Benching	☐	☐	☐
3. Working within a protective device	☐	☐	☐
a. Excavation of earth material may be dug 2 feet below the bottom of the shield if there are no indications while the trench is open of possible loss of soil from behind or below the shield.	☐	☐	☐
f. Excavation: Depth greater than 20 feet			
1. Protective systems designed by professional engineer	☐	☐	☐
2. Engineering documentation on-site; readily available	☐	☐	☐
g. Egress (Depth 4 feet or greater)	☐	☐	☐
1. Ladder accessible within 25’ of lateral movement	☐	☐	☐
2. Ladder extends 3’ above edge of excavation	☐	☐	☐
3. Ladder inspected for defects	☐	☐	☐
	Yes	No	NA
h. Spoil pile maintained a minimum of 2’ from excavation	☐	☐	☐
i. Water accumulation	☐	☐	☐
j. Loads are not suspended above employees	☐	☐	☐

k. Defective cables; chains; slings removed from service ☐ ☐ ☐
l. Traffic control ☐ ☐ ☐
1. Warning signs and barricades in place ☐ ☐ ☐
2. Flagmen ☐ ☐ ☐
3. Vests ☐ ☐ ☐

Equipment

a. Inspected before use ☐ ☐ ☐
b. Defective items tagged and removed from service ☐ ☐ ☐

Powered Equipment

a. Inspected before use ☐ ☐ ☐
b. Protected from overhead electrical hazards ☐ ☐ ☐

General Job Site

a. First aid kits available and stocked ☐ ☐ ☐
b. Adequate restrooms facilities ☐ ☐ ☐
c. Potable water available ☐ ☐ ☐

Temporary Electrical Wiring

a. Extension cords inspected & free of defects ☐ ☐ ☐
b. Ground fault circuit interrupters (GFCI) in use ☐ ☐ ☐
c. All equipment properly grounded ☐ ☐ ☐
d. Temporary wiring clear of employee & vehicular traffic ☐ ☐ ☐

Personal Protective Equipment (PPE) Required
(Note: Serviceable equipment available & training received)

a. Hard Hats ☐ ☐ ☐
b. Eye protection ☐ ☐ ☐
c. Appropriate, approved, work shoes ☐ ☐ ☐
d. Gloves ☐ ☐ ☐

Items specific to this job site

a. _____ ☐ ☐ ☐
b. _____ ☐ ☐ ☐
c. _____ ☐ ☐ ☐

JOB SITE CHECKLIST
[General]

Job Site Identification: _____ Date: _____

_____
(Signature of Competent Person)

Check appropriate box:	Yes	No	NA
Postings			
a. OSHA Form 3165	☐	☐	☐
b. OSHA Form 300A (February 1 to April 30)	☐	☐	☐
c. Emergency Phone Numbers (Hospital - Emergency Response - Main Office)	☐	☐	☐
Administrative			
a. MSDS readily accessible	☐	☐	☐
b. Hazard communication information “shared”	☐	☐	☐
c. Fire extinguishers accessible and inspected	☐	☐	☐
d. Employees appropriately trained	☐	☐	☐
Job Site			
a. First aid kits available and stocked	☐	☐	☐
b. General housekeeping	☐	☐	☐
c. Adequate restrooms facilities	☐	☐	☐
d. Potable water available	☐	☐	☐
e. Warning signs, tags, barricade tape in place	☐	☐	☐
Temporary Electrical Wiring			
a. Extension cords inspected & free of defects	☐	☐	☐
b. Ground fault circuit interrupters (GFCI) in use	☐	☐	☐
c. All equipment properly grounded	☐	☐	☐
d. Temporary wiring clear of employee & vehicular traffic	☐	☐	☐
Personal Protective Equipment (PPE) Required (Note: Serviceable equipment available & training received)			
a. Hard Hats	☐	☐	☐
b. Eye protection	☐	☐	☐
c. Appropriate, approved, work shoes	☐	☐	☐
d. Hearing protection	☐	☐	☐
	Yes	No	NA
e. Gloves	☐	☐	☐
Equipment including PPE, Ladders & Scaffolds & Tools			

a. Inspected before use ☐ ☐ ☐
b. Defective items tagged and removed from service ☐ ☐ ☐
c. Powered Equipment operators trained and authorized ☐ ☐ ☐

Ladders

a. Side rails extend at least 3' above upper landing surface ☐ ☐ ☐
b. Ladders tied-off to prevent displacement ☐ ☐ ☐

Scaffolds

a. Guard rails, full planking, bracing & ladder access ☐ ☐ ☐

Fall Protection

a. Personnel trained in fall protection ☐ ☐ ☐
b. Residential Construction Interim Standards used ☐ ☐ ☐
c. Conventional Fall Protection System Used ☐ ☐ ☐
    1. Guardrail System ☐ ☐ ☐
    2. Personal Fall Arrest System ☐ ☐ ☐
    3. Warning Line System ☐ ☐ ☐
    4. Controlled Access Zone System ☐ ☐ ☐
    5. Safety Monitoring System: Monitor must be a competent to recognize fall hazards & know the responsibilities of the position.
d. Fall Protection Plan used: 29 CFR 1926.502(k); is on site. ☐ ☐ ☐

Other

a. _____ ☐ ☐ ☐
b. _____ ☐ ☐ ☐
c. _____ ☐ ☐ ☐

Safety Enforcement

Unsafe work practices will be corrected immediately upon discovery and if total job site safety cannot be restored, job will be shut down until corrections are made. The below listed persons were working in an unsafe manner & enforcement documentation is or will be prepared at the earliest opportunity consistent with safety.

_____ _____
(Name) (Unsafe Act & Corrective Measure)
_____

_____ _____
(Name) (Unsafe Act & Corrective Measure)
_____

JOB SITE CHECKLIST
[Scaffolds]

Job Site Identification: _____ Date: _____

_____
(Signature of Competent Person)

Check appropriate box:	Yes	No	NA
Erection & Dismantling			
1. Only trained, competent persons involved	☐	☐	
2. *Daily assessment: need for & feasibility of fall protection *** During the complete time frame of scaffold erection and/or dismantling, this daily assessment must be made and this checklist signed and dated.**	☐	☐	
a. fall protection feasible	☐	☐	
3. Hard hats always worn	☐	☐	
4. Other PPE as appropriate, i.e., steel toed boots, gloves, eye protection	☐	☐	
5. Supported scaffold poles, legs, posts, frames, and uprights resting on base plates **and** mud sills or other adequate firm foundation	☐	☐	
6. Frames, legs, braces: plumb, level and secure	☐	☐	
7. Locking pins: in place and secure	☐	☐	
8. Cleated planks used or planks extend at least 6 inches and not more than 12 inches over support	☐	☐	
9. Planks over 10 feet in length will not extend more than 18 inches over support	☐	☐	
10. No more than one (1) inch space between platforms units as well as uprights	☐	☐	
11. Supported scaffolds with height to base width greater than 4:1 restrained by guying, tying, bracing or equivalent means	☐	☐	
12. Safe distance from power lines:	☐	☐	☐
Insulated lines a. Less than 300 Volts 3 feet b. 300 Volts to 50 kv: 10 feet c. More than 50 kv: 10 feet plus 0.4 inches for each 1 kv over 50 kv **Uninsulated lines** a. Less than 50 kv: 10 Feet b. More than 50 kv: 10 feet plus 0.4 inches for each 1 kv over 50 kv			
13. Above ten (10) feet, installation of guard rails, mid rails toe boards	☐	☐	☐

Check appropriate box:	Yes	No	NA
14. Guardrail systems [on all *open sides and ends] installed before scaffold released for employee use ***An open side is greater than 14 inches from the face of the work except:**	☐	☐	

1) For plastering and lathing it is greater than 18 inches from the face of the work.
2) For outrigger scaffolding it is 3 inches from the face of the work.

15. Above two (2) feet, access provided (stairs, ladder, ramp) ☐ ☐
16. Components inspected; defective items removed from site ☐ ☐
17. If appropriate, warning signs, barricade tape in place ☐ ☐
18. Temporary wiring clear of employee & vehicular traffic ☐ ☐

Scaffold Use

1. Daily inspection by competent person ☐ ☐
2. Only trained employees allowed on scaffold ☐ ☐
3. Hard hats always worn ☐ ☐
4. Other PPE as appropriate, i.e., steel toed boots, gloves, eye protection ☐ ☐
5. Employees will not stand on guardrails or midrails or cross rails ☐ ☐
6. Employees will not stand on boxes or step ladders to gain height ☐ ☐
7. Potential falling objects, too large to be contained by toe-boards, mess, etc. will be placed away from edge ☐ ☐ ☐
7. Scaffolds will not be loaded above their capacity. Under no circumstances will platforms deflect more than 1/60 the span when loaded. ☐ ☐

Other

a. _____ ☐ ☐ ☐
b. _____ ☐ ☐ ☐
c. _____ ☐ ☐ ☐

Safety Enforcement

Unsafe work practices will be corrected immediately upon discovery and if total job site safety cannot be restored, job will be shut down until corrections are made. The below listed person was working in an unsafe manner & enforcement documentation is or will be prepared at the earliest opportunity consistent with safety.

_____ _____
(Name) (Unsafe Act & Corrective Measure)

_____

_____ _____
(Date) (Signature of Supervisor/Competent Person)

JOB SITE CHECKLIST
[Standard]

Job Site Identification: _____ Date: _____

_____
(Signature of Competent Person)

Check appropriate box:	Yes	No	NA
Postings			
a. OSHA Form 3165	☐	☐	☐
b. OSHA Form 300A (February 1 to April 30)	☐	☐	☐
c. Emergency Phone Numbers (Hospital - Emergency Response - Main Office)	☐	☐	☐
d. Emergency Action Plan	☐	☐	☐
Administrative			
a. Clear lines of authority (Coordination between general and subcontractors)	☐	☐	☐
b. MSDS readily accessible	☐	☐	☐
c. Hazard communication information “shared”	☐	☐	☐
d. Underground utilities located, marked, utilities notified (Excavating, trenching)	☐	☐	☐
e. Fire extinguishers accessible and inspected	☐	☐	☐
f. Employees appropriately trained (Including subcontractors)	☐	☐	☐
General Job Site			
a. First aid kits available and stocked	☐	☐	☐
b. General housekeeping	☐	☐	☐
c. Adequate restrooms facilities	☐	☐	☐
d. Potable water available	☐	☐	☐
e. Equipment, materials, & chemicals storage	☐	☐	☐
f. Adequate lighting	☐	☐	☐
g. Warning signs, tags, barricade tape in place	☐	☐	☐
Temporary Electrical Wiring			
a. Extension cords inspected & free of defects	☐	☐	☐
b. Ground fault circuit interrupters (GFCI) in use	☐	☐	☐
c. All equipment properly grounded	☐	☐	☐

	Yes	No	NA
d. Temporary wiring clear of employee & vehicular traffic	☐	☐	☐

Personal Protective Equipment (PPE) Required
(Note: Serviceable equipment available & training received)

a. Hard Hats	☐	☐	☐
b. Eye protection	☐	☐	☐
c. Appropriate, approved, work shoes	☐	☐	☐
d. Hearing protection	☐	☐	☐
e. Gloves	☐	☐	☐
f. Respirators	☐	☐	☐

Equipment

a. Inspected before use	☐	☐	☐
b. Defective items tagged and removed from service	☐	☐	☐

Powered Equipment

a. Operators trained and authorized	☐	☐	☐
b. Inspected before use	☐	☐	☐

Items specific to this job site

a. _____	☐	☐	☐
b. _____	☐	☐	☐
c. _____	☐	☐	☐

Subcontractor safety deficiencies		Corrected	
_____ (Subcontractor)	_____ (Deficiency)	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐
_____	_____	☐	☐

JOB SITE CHECKLIST
[Steel Erection]

Job Site Identification: _____ Date: _____

_____
(Signature of Competent Person)

Check appropriate box:	Yes	No	NA
Postings			
a. OSHA Form 3165	☐	☐	☐
b. OSHA Form 300A (February 1 to April 30)	☐	☐	☐
c. Emergency Phone Numbers (Hospital - Emergency Response - Main Office)	☐	☐	☐
Steel Erection Activities			
a. Approvals			
1. The concrete in the footings, piers and wall and the mortar in the masonry piers and walls has attained either 75% of the intended minimum design strength or sufficient strength to support the loads to be imposed during steel erection.	☐	☐	☐
2. Repairs, replacements and modifications to anchor bolts were conducted in accordance with 29 CFR 1926.755(b).	☐	☐	☐
b. Site Layout			
1. Adequate access roads within the construction site.	☐	☐	☐
2. Methods for pedestrian and vehicle control.	☐	☐	☐
3. Firm graded drained area for safe storage of equipment.	☐	☐	☐
c. Overhead Hoisting Operations			
1. Hoisting operations pre-planned per 29 CFR 1926.753(d).	☐	☐	☐
d. Site-Specific Erection Plan			
1. A site-specific erection plan, developed by a qualified person, is available at the work site if alternate means and methods are used to provide employee protection.	☐	☐	☐
e. Fall Protection **[Note: Standard Fall Protection applies except:]**			
1. Employees engaged in steel erection are provided fall protection when more than 15 feet above a lower level.	☐	☐	☐
2. On multi-story structures, perimeter safety cable installed.	☐	☐	☐
3. Connectors are protected from fall hazards of more than two stories or 30 feet, which ever is less.	☐	☐	☐

	Yes	No	NA
4. Connectors, at heights over 15 and up to 30 feet above a			

	Yes	No	NA
lower level are provided a personal fall arrest system, positioning device system or fall restraint system and wear the equipment necessary to be tied-off.	☐	☐	☐
f. Controlled Decking Zone [Installed in area of structure over 15 and up to 30 feet above a lower level where metal decking is initially being installed and forms the leading edge.]			
1. Employees working at leading edge in a CDZ protected from fall hazards of more than two stories or 30 feet, whichever is less.	☐	☐	☐
2. Access limited to employees engaged in leading edge work.	☐	☐	☐
3. Boundaries of CDZ clearly marked and less than 90 ft wide and 90 feet deep from leading edge.	☐	☐	☐
g. Working under loads			
1. Loads rigged by a qualified rigger. Self-closing latches used.	☐	☐	☐
2. Routes of suspended loads are pre-planned.	☐	☐	☐
h. Cranes			
1. Pre-shift visual inspection by competent person.	☐	☐	☐
Equipment			
a. Inspected before use	☐	☐	☐
b. Defective items tagged and removed from service	☐	☐	☐
Powered Equipment			
a. Inspected before use	☐	☐	☐
b. Protected from overhead electrical hazards	☐	☐	☐
General Job Site			
a. First aid kits available and stocked	☐	☐	☐
b. Adequate restrooms facilities	☐	☐	☐
c. Potable water available	☐	☐	☐
d. Warning signs, tags, barricade tape in place	☐	☐	☐
Temporary Electrical Wiring			
a. Extension cords inspected & free of defects	☐	☐	☐
b. Ground fault circuit interrupters (GFCI) in use	☐	☐	☐
c. All equipment properly grounded	☐	☐	☐

d. Temporary wiring clear of employee & vehicular traffic □ □ □

Personal Protective Equipment (PPE) Required
(Note: Serviceable equipment available & training received)

a. Hard Hats □ □ □
b. Eye protection □ □ □
c. Appropriate, approved, work shoes □ □ □
d. Gloves □ □ □

Items specific to this job site

a. _____ □ □ □
b. _____ □ □ □
c. _____ □ □ □

Subcontractor safety deficiencies		Corrected	
_____ (Subcontractor)	_____ (Deficiency)	□	□
_____	_____	□	□
_____	_____	□	□
_____	_____	□	□

ENFORCEMENT DOCUMENTATION

Date: _____ Check One: □ Minor □ Major □ Willful

Employee Name: _____

Supervisor: _____

Description of violation: _____
_____
_____
_____

Possible Adverse Consequences: _____
_____
_____
_____

Corrective Action: _____
_____
_____
_____

Employee Acknowledgment:

_____ _____
(Employee Signature) (Date)

Employee statement/rebuttal (optional): _____
_____
_____
_____
_____

Witnesses: (if appropriate & available. An effort should be made to obtain witnesses for willful safety violations)

_____ _____
(Print name) (Signature)

_____ _____
(Print name) (Signature)

Note: With the exception of willful violations, this form will be destroyed after a 12 month period.

Hot Work Permit

This form provides written authorization for the below listed individual(s) to perform operations capable of providing a source of ignition.

Object on which hot work is to be performed: _____

Date(s) hot work is to be performed: _____ (From) _____ (To)

Hot work is applicable to the below listed type of operation:
(Check appropriate box)

- ☐ Burning
- ☐ Cutting
- ☐ Heating
- ☐ Riveting
- ☐ Welding
- ☐ Other: _____

Persons performing hot work operations:

(Name)	(SSN or Employee ID No.)
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

The above persons have been provided with a copy of **29 CFR 1910.252(a)** and will ensure that its provisions are complied with.

A copy of this Hot Work Permit will remain on file until the completion of the hot work operation listed above.

_____ (Facility) _____ (Date)

_____ (Signature of Person Authorized to Issue Hot Work Permit) _____ (Title)

Hand Signals for Cranes

U.S. Department of Labor
Mine Safety and Health Administration
Hand Signals for Lifting Equipment.

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.

Issued:
Tag # **AP2003-M061**

FORKLIFT CHECK LIST

VEHICLE TYPE: _____ **DATE:** _____

VEHICLE NUMBER: _____ **OPERATOR NAME:** _____

VISUAL INSPECTION	Mon	Tues	Wed	Thurs	Fri	Sat.	Sun
Overall vehicle condition							
Operators manual							
Fire extinguisher							
Head lights							
Tail lights							
Signal lights							
Warning lights							
Seat							
Seat belt							
Tires, wheels, rims							
Overhead cage protection							
Forks							
Mast							
Mast chains							
Mast tilt							
Hydraulic lines							
Wires							
Cosmetic Damage: Explain: _____							
FLUIDS (check leakage &)							
Brake fluid							
Engine oil							
Fuel							
Hydraulic fluid							
Coolant							
VEHICLE OPERATIONS							
Starter							
Gauges: Battery							
Oil pressure							
Temperature							
Hour meter							
Seat safety switch							
Backup warning device							
Warning light							
Parking brake							
Service brake							
Steering							
Transmission							
Mast lift up/down							
Mast tilt							
Mast side/squeeze							
Other:							
Other:							

Code: ✓ = OK X = Deficiency NA = Not Applicable

Documentation for Written Notification to Commence Steel Erection

NOTE: This must be completed by the Masonry/Concrete Contractor prior to issuance of Written Notification to Commence Steel Erection.

To: _____ Date: _____
(Masonry/Concrete Contractor)

As the general contractor, per 29 CFR 1926.752, the below written notification to commence steel erection to the steel erection contractor using the information provided below.

Please check appropriate boxes below, sign & date this notification, and return to:

The below notification(s) are provided to:

The concrete in the

- ☐ footings
- ☐ piers
- ☐ walls

has attained, on the basis of an appropriate ASTM standard test method of field-cured samples, either 75 percent of the intended minimum compressive design strength or sufficient strength to support the loads imposed during steel erection.

The mortar in the

- ☐ masonry piers
- ☐ masonry walls

has attained, on the basis of an appropriate ASTM standard test method of field-cured samples, either 75 percent of the intended minimum compressive design strength or sufficient strength to support the loads imposed during steel erection.

Any repairs, replacements and modifications to the anchor bolts were conducted in accordance with 29 CFR 1926.755(b).

_____
(Name of Concrete/Masonry Contractor)

_____
(Signature/Title)

_____
(Date)

WRITTEN NOTIFICATION TO COMMENCE STEEL ERECTION

Project Number/Name: _____ Date: _____

As the general contractor on the above project, per 29 CFR 1926.752, the below written notifications to commence steel erection is given to the below steel erection company by

_____
(Name of steel erection contractor)

The concrete in the

- ☐ footings
- ☐ piers
- ☐ walls

has attained, on the basis of an appropriate ASTM standard test method of field-cured samples, either 75 percent of the intended minimum compressive design strength or sufficient strength to support the loads imposed during steel erection.

The mortar in the

- ☐ masonry piers
- ☐ masonry walls

has attained, on the basis of an appropriate ASTM standard test method of field-cured samples, either 75 percent of the intended minimum compressive design strength or sufficient strength to support the loads imposed during steel erection.

Any repairs, replacements and modifications to the anchor bolts were conducted in accordance with 29 CFR 1926.755(b).

_____
(Signature/Title))

_____
(Signature/Title)

_____
(Date)

EMERGENCY ACTION PLAN

Events may occur which dictate the evacuation of the facility such as fire, severe inclement weather, power failure, etc... Additionally events may occur which dictate the need for emergency medical responders. These sets of events fall under our Emergency Action Plan and a multitude of objectives must be met.

The first and foremost objective is the safety of all our personnel. To achieve this level of safety, our plan is designed to get personnel away from danger, treat injury, and provide for a thorough and accurate accounting of all employees.
T
here may well be situations where certain employees, trained in first aid and/or fire fighting procedures, may prevent a small emergency situation from becoming a major disaster. In these types of situations, these employees, identified in this plan, will remain on the job site to perform the function for which they are trained provided they may perform these duties, in their judgment, in a safe manner. At no time will any employee put himself/herself at risk.

All personnel will receive training on our emergency action plan during initial safety training as well as when our plan changes or the employee's responsibilities change.

If appropriate, on a job site, this emergency action plan will posted with our emergency escape route diagram and emergency telephone numbers.

When working at a client's facility, our personnel will fall under the provisions of their emergency action plan.

All exits will be identified with a sign having the word "EXIT" plainly legible. Exit signs will be suitably illuminated. Doors, passageways, stairs, etc., which appear to be an exit but are not shall be identified by a sign that reads, for example: "Not an Exit".

Aisles and passageways shall be kept clear to provide a direct, easy egress from our facility.

It is important that the actual implementation of this plan be simple, direct, and carried out without confusion. Each employee must know how to alert others, how to call for assistance, the location of fire extinguishers, the escape route, the rendezvous point (and being accounted for so that others do not put themselves at risk looking for a person who has already reached safety), and specific tasks that may be required of specific personnel during emergency procedures.

A copy of 29 CFR 1926.35, Employee Emergency Action Plans is readily available for review in our Safety Program.

The following are standard operating procedures:

EMERGENCY MEDICAL RESPONSE

Should an injury occur that requires an emergency medical responder, the below listed actions will be taken in order given:

1. Call the emergency response number posted adjacent to this plan.
2. Call the Administrative Office at: _____.
    a. Help will immediately be sent and a person will be designated to direct the emergency responders to the injured person.
    b. If appropriate, Material Safety Data Sheets will be provided the emergency responders.
3. Provide any medical assistance you are trained and certified to do. Do not provide any medical assistance you are not trained to do.

ASSIGNED FIRST AID PROVIDERS

NAME

_____
_____
_____
_____
[Note: If none, enter "None".]

FACILITY EVACUATION PLAN

(FIRE/EXPLOSION/SEVERE WEATHER/MECHANICAL FAILURE, ETC.)

THE ORDER TO EVACUATE IS GIVEN BY:

_____
(Example: Fire Bell; Three (3) Blasts of an Air Horn; Public Announcement, etc.)

TO ALERT OTHERS:

_____
(Example: Activate alarm; notify main office, Ext No: etc.)

LOCATION OF FIRE EXTINGUISHERS, NEAREST LISTED FIRST:

_____ _____
(Type) (Location)

_____ _____
(Type) (Location)

_____ _____
(Type) (Location)

RENDEZVOUS POINT:

_____
(Example: Parking lot; by dumpster, etc.)

SPECIFIC HAZARDS TO BE AWARE OF:

_____
(Example: List nearby hazardous chemicals. If none, enter "none")

ROSTER OF PERSONNEL WITH SPECIFIC DUTIES DURING AN EVACUATION

NAME	TITLE	DUTIES
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

NOTE: Examples of specific duties: De-energizing certain equipment or machinery; accounting for personnel at rendezvous point; manning fire extinguishers; directing emergency responders; on alert for First Aid delivery; rescue team member; etc. If none, enter: "None".

FIRE PREVENTION PLAN

Reference the Fire Protection and Fire Prevention portions of our Safety Program. This referenced sections deal with procedures to prevent a fire, and, in the event of a fire, the various limitations of fire extinguishers. Further reference our Emergency Action Plan which deals with actions to take in the event of a fire and/or evacuation. This Fire Prevention Plan deals not with handling a fire emergency, but rather preventing a fire in the first place.

HOUSEKEEPING

One of the first rules of fire prevention is good housekeeping. Good housekeeping can prevent a fire from starting (improper storage of combustibles, for example) and should there be a fire, good housekeeping can: 1) help prevent the spread of the fire, and 2) make fighting the fire an easier task. Some specific housekeeping rules that impact directly on fire prevention are:

a. Combustible liquids must be stored and covered in approved containers.

b. All chemical spills including, of course, combustible liquids, must be cleaned up immediately.

NOTE: Care must be taken when cleaning up chemical spills. Information on appropriate personal protective equipment; proper disposal; proper cleanup procedures; required ventilation, etc. is found on the products Material Safety Data Sheet.

c. Cleanup materials and damaged containers must be properly disposed.

d. Combustible liquids and trash must be segregated and stored away from ignition sources.

e. Aisle ways will be kept free of clutter and trash.

f. Fire exits will never be blocked.

FIRE FIGHTING EQUIPMENT

One often thinks of fire fighting equipment as it relates to the workplace as fire extinguishers. This is true, yet there are other, often more important, pieces of equipment such as sprinkler systems and outside hydrants. While portable fire extinguishers may prevent a small fire from becoming a major disaster, they are not designed to handle large fires. Below listed are items included in our Fire Prevention Plan:

a. Approved fire extinguishers will be checked on at least an annual basis and they shall always be charged and ready for use.

b. Portable fire extinguishers will be mounted, located, and identified for easy accessibility.

c. Fire hydrants will be kept clear and, during the winter months, not be buried by snow.

ELIMINATION OF MAJOR WORKPLACE FIRE HAZARDS

1. Smoking is allowed only in designated areas and smoking materials will be totally extinguished and placed in the appropriate receptacles.

2. All chemical and chemical products will be handled and stored in accordance with the procedures noted on their individual MSDS.

3. Debris will not be allowed to accumulate on the Job Site.

4. Special precautions will be taken when working with an open flame (such as welding) and those areas will be made fire safe by removing or protecting combustibles from ignition.

5. Equipment installed on heat producing equipment will be regularly and properly maintained to prevent accidental ignition of combustible materials in accordance with manufactures instructions. These instructions are incorporated, by reference, in this Plan

TRAINING

Training in fire protection will be accomplished upon initial assignment and annually thereafter as part of our overall safety program. This training shall include items that deal with employee protection in the event of an emergency. All employees will be apprised of the fire hazards of the materials and processes to which they are exposed.

ACCIDENT INVESTIGATION FORM

Injured Employee: _____ Date: _____

Age: _____ Job Title: _____ Project/Job: _____

Date & Time of Accident/Injury: _____ (Date) _____ (Time) Injury: _____ (Yes/No)

Nature of Injury or Property Damage: _____
_____

Statement of employee involved in the injury or accident (what happened): _____
_____
_____
_____
_____

Witness 1 statement: _____
_____
_____
_____
_____

Witness 1 Name & Job Title: _____

Witness 2 statement _____
_____
_____
_____
_____

Witness 2 Name & Job Title: _____

Supervisor/competent person statement _____
_____
_____
_____

Was there an injury? _____ Was medical treatment required? _____ Possible lost time accident? _____

Signature of Supervisor/competent person: _____

Report Investigated by: _____ Date: _____

Report review by: _____ Date: _____

Findings:

Cause of incident: _____
_____
_____

Means of preventing a reoccurrence: _____
_____
_____
_____

This record will be maintained in the Safety Program Administrator's office for a period of 2 years from the date of accident/injury unless a longer retention is required by law.

If more than 10 employees at any one time in the previous calendar year, this information will be used to complete OSHA Forms 300 and 301 which are used to record and classify occupational injuries and illnesses. Recordable injuries and illnesses must be entered on OSHA Forms 300 and 301 within seven (7) days of receiving information that a recordable injury or illness has occurred.

TILT WALL CHECKLIST

Project Start Up List

Project Name: _____

Project Supt: _____ Start Date:_____

Location: _____

Scope of Project

	✓	N/A	COMMENTS
Require Subcontractors to provide:			
List of Competent Persons			
Certified Rigger			
Emergency Contact Information			
Pre-lift Meeting			
Crane Inspection- Annual and Daily- Must be on site.			
Rigging Inspection-			
Capacity tags/information			
Wire rope damaged			
Hooks			
Shackles			
Other connection fittings			
Nylon slings			
Lift points on panels			
Designated signal person			
Panel Support			
Proper size anchors			
Braces Inspected			
Braces properly positioned on panels			
Slab anchors placed and inspected			
Work Area Barricaded			
Panel height plus 20 feet			
Minimum 3 panels both directions			
Monitor in place to keep other trades away			
Crane swing radius or travel area			

	✓	N/A	COMMENTS
Construction Power			
Location of Main Panel			
Generator			
Extension cords inspected for damage			
Tools inspected			
PPE Required			
Fire extinguisher present			
Material storage			
Lay down area			
Security			
Access to site			
Equipment on site			
Keys removed nightly			
Authorized operators			
Training certification			
Documented inspection			
Access to the site			
Neighborhood			
Off site parking			
Security			
Safety Policy Onsite			
Ed Taylor Construction policy			
Project rules			
Subcontractor documentation of training of employees			
Poster Package			
Emergency Action Plan			
Fire			
Rescue			
Assembly area			
Severe weather			