

CAPITAL DEMOLITION & CONSTRUCTION, INC.

SAFETY PROGRAM

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Introduction

1. Policy Statement

It is the policy of Capital Demolition & Construction, Inc. in order to maintain safe work practices at all times to protect its employees and provide public safety. Safety shall take precedence over all other work procedures. Any person employed by Capital Demolition & Construction found to be uncooperative or careless in carrying out safety procedures shall be terminated.

2. Purpose

Capital Demolition & Construction has compiled this manual in order to provide a reference for training supervisors, and employees as well as a guideline for on-site work practices for demolition and construction projects. This manual is to be used also in conjunction with OSHA, EPA, state and local codes as well as equipment and manufacturer specifications and instructions for equipment in use.

3. Responsibility

The implementation, supervision and maintenance of this program shall ultimately be the responsibility of management and supervisors. Management shall assist the Project Supervisor in determining maximum safety for employees on a particular site.

Section 1: Site Preparation

1.1 Survey

Prior to the commencement of any work, a visual survey will be made by the site supervisor to determine any hazards present. The purpose of this survey is to determine the condition of the framing, floors, walls and to determine possible unplanned collapse of any part of the structure.

1.2 Employee Briefing

Prior to the start of work, the site supervisor shall review with all employees any potential hazards such as fire, electrical, nature of slip/fall hazards, personal protective equipment needed, tools and emergency procedures.

1.3 Utilities

Demolition

All utility service lines (gas, water, electric, steam, sewer, etc) shall be shut off, capped or otherwise controlled outside the building. In each case the utility company involved shall be notified. If it is necessary to maintain such services during demolition work, such lines shall be temporarily relocated and protected. All employees shall be informed of the location of temporary utilities.

For use of heavy machinery, any overhead power source problems should be determined and corrective action taken prior to demolition activities.

1.4 Hazardous Substances

It shall be determined if any type of hazardous chemical, gases, explosives, flammable materials, or similarly dangerous substances are present within the work area. If such are found the Owner will be responsible for removal prior to any demolition or construction activities. If during the work an employee discovers such a substance he/she shall immediately inform the supervisor.

1.5 Fire Prevention

Prior to the start of work, the supervisor shall determine potential sources of fire ignition and implement corrective actions. Firefighting equipment shall be provided and placed in easily visible locations. This equipment shall be properly maintained and kept in working order. Any defects will be immediately corrected. Fire exits shall be established and marked so as to be easily visible. Employees shall be informed of the location of the emergency exits and fire-fighting equipment.

Fire extinguishers shall be provided and rated not less than 2A for each 300 square feet of space. At least one extinguisher shall be provided for each floor. Travel distance to the nearest fire extinguisher shall not exceed 100 feet. One 55 gallon open drum of water with two fire pails may be substituted for a 2A rated fire extinguisher.

At no time shall equipment, supplies and materials block access to the fire extinguishers.

Smoking shall be prohibited in or near the work area.

Heating devices shall be situated so that they are not likely to be knocked over and will not be placed near combustible material or equipment. Installation of temporary heating devices are generally the responsibility of the owner or general contractor. However, should this portion of work fall on Capital Demolition & Construction, Capital will ensure that installation is performed as per manufacturers specification and instruction. Power equipment shall be exhausted away from combustible material.

1.6 Emergencies and Medical Services

An alarm system shall be provided, such as a siren, to notify employees of an emergency. Outside communication will be made available so employees can notify the appropriate emergency service. Telephone numbers and the location of emergency service facilities as well as emergency procedures shall be posted in a designated area for easy access to all employees.

Properly approved and stocked emergency kits will be made available in sufficient number and placed in accessible areas. The container shall be weatherproofed.

Section 2: Protective Clothing & Equipment

2.1 Clothing

Properly fitting clothes are essential to safety in the work place. Loose fitting clothing as well as jewelry are easily caught in machine parts or on protruding objects. Work pants should not have cuffs or patch pockets. Jewelry such as rings, necklaces, wrist watches shall not be worn.

2.2 Bodily Protection

Hand Protection

Whenever possible gloves shall be worn to protect hands from cuts, splinters, or other abrasions. Gloves may be made of leather, cloth or other fabrics depending on the intended use. Gloves shall fit snugly around wrist. For work in wet areas, rubber or vinyl coated gloves will be made available. When necessary gloves that protect the forearm will be used and insulated gloves or glove liners may be used for cold weather.

Foot Protection

Shoes that provide adequate protection shall be worn. This means leather work shoes, not sneakers which are free from split seams, holes and loose laces. In some cases steel reinforced insoles, metatarsal guards or shin guards may be required. Rubber boots may be required when working in or near wet surfaces. Guards may include built-in, strap-on or inserts. Keep work area free from hazardous materials such as nails or other sharp objects. Take care when handling heavy objects and/or working near equipment, which is not stabilized or permanently attached.

Head Protection

Hard hats or safety helmets shall be used to prevent head injuries from falling or flying objects or by bumping your head. Head protection gear also aides in preventing neck and face injury. Head protection may be provided with winter liners, ear muffs, face shields, welding visors or chinstraps. Prior to each use of head protection gear, employees shall check their gear for cracks, dents or other damage due to impact. Any defective headgear will be discarded and replaced.

Eye and Face Protection

Suitable eye protection shall be provided when hazards present may include flying objects, glare, liquids or other conditions which may cause injury. Eye protection shall fit snugly, be capable of being properly cleaned and disinfected, durable and kept in good repair. Types of eye protection include safety glasses, goggles, face shields, welding goggles and welding helmets. Eye protection shall be adequate for the specific operations. Employees shall check their eye protection daily for cracks, pits or other damage. Defective eye protection shall be immediately repaired or replaced. Those whose vision requires corrective lenses shall wear either spectacles whose protective lenses provide optical protection or goggles that can be worn over the spectacles without disturbance; or fitted with corrective goggles.

2.3 Respiratory Protection

Exposure to hazardous atmospheres shall be minimized by engineering controls. Engineering controls include providing proper ventilation, spray down dust or complete removal. Where hazardous substances cannot be completely removed respiratory protection will be provided. Types of respirators include disposable, cartridge

type, powered air purifying, air line and self-contained breathing apparatus. The type of respirator used shall be dependent on the substance present. Employees will be trained on the proper use, care and maintenance of the respiratory protection provided. Proper fit will be assured via appropriate methods. Prior to the use of a respirator the employee will be checked by a physician for ability to don and use such protection.

2.4 Slip and Fall Protection

The prevention of slips and falls begins in maintaining a clean and debris free work area. All equipment/tool surfaces shall be kept clean and dirt free. All work area space shall not become cluttered with tools; equipment and debris shall be cleared and not allowed to accumulate.

Lifeline Systems

Lifeline systems are attached to an anchor. Ropes and cables are hung either in a horizontal or vertical angle depending on the type of system being used. Each lifeline supports one worker who is attached by a lanyard with either a safety belt or harness. A safety belt is attached around the waist and to the lanyard behind the workers back. A harness is similar and distributes the shock load over the shoulders, seat and thighs. A lanyard is a short piece of rope, which connects the body belt or harness to the lifeline by means of a snap hook. Droplines may also be used as retracting lines, which automatically catch the line during a fall.

Lifelines and lanyards will be secured directly above the worker to prevent swinging into structural members or other workers. Nylon material is recommended for belts and harnesses except for involvement in welding and cutting operations in which case polyester is recommended. All belts, harnesses, ropes, and cables should be protected from abrasions and from coming in contact with grease, oils or other chemicals. Lifeline equipment shall be periodically inspected to be sure it is in proper working order.

Safety Nets

Safety nets shall be used when working in areas where scaffold, safety belts, lifelines or other guarded working surfaces are not required or when working over water. Mesh crossing should be anchored to prevent enlargement of the opening. Each net shall have border roping to provide additional strength. Nets will be hung with sufficient clearance to prevent the user from making contact with a surface or object below. Impact load testing shall be conducted to determine amount of clearance needed. It is required that forged steel safety hooks or shackles be used to attach the net to cables, structures or beams.

Catch Platform

Catch platforms are provided to retain falling debris, and shall be cleaned frequently to avoid accumulation. Accumulation of debris decreases the effectiveness of the platform. A catch platform is supported by outriggers extending from the building and secured to prevent turning or displacement and shall be erected in addition to sidewalk sheds. Outriggers should be 3 x 10 planks, set on an edge not more than every 6 feet, the beams shall rest on edge, and the sides shall be plumb and edges horizontal. The support point of the beam shall rest on a secure bearing at least 6 inches in each horizontal dimension. Beams shall be secured in place to avoid tipping or displacement. Planking shall be laid tight and nailed or bolted to outriggers.

Section 3: Protective Barriers

Signs

Signs shall be visible at all times and shall be removed only when a hazard no longer exists. Danger signs shall be used where immediate hazards exist. Caution signs shall be used only to warn against potential hazards or to caution against unsafe practices. Exit signs shall be clearly marked to indicate passageways to safety. Any faulty equipment will be tagged with warning tags appropriate to defective operations. The equipment will not be used until properly repaired. All signs shall comply with OSHA 29 CFR 1926.200.

Ladders

Ladders are made of wood, aluminum and fiberglass and vary in size and type. The type of ladder chosen is dependent on the intended use and type of hazards present. Ladder dimensions shall conform with OSHA 29 CFR 1926.1053 Subpart X. Job made ladders shall be free of cracks, splits and any other deformation which may reduce the ladders ability to withstand stress. A ladder (or stairway) shall be provided at all points of access where there is a break in elevation of 19 inches or more and no other source of hoist is provided. When a structure has only one point of access between floors, that access shall be kept clear to permit free passageway. A second passageway may be provided when one is restricted by equipment or work performance. Ladders shall not be tied or fastened together unless they are intended for such use. Ladder components shall be surfaced to prevent injury and/or snagging of clothing. Ladders shall be maintained of oil, grease, and other slippery hazards. Wood ladders shall not be coated with opaque coatings. Caution shall be taken when using metal ladders as they are not as strong as wood and fiberglass and are conductors of electricity. When the total climb exceeds 24 feet, the ladders shall be equipped with safety devices or self-retracting lifelines and rest platforms not to exceed 150 feet. Ladders shall not be loaded beyond maximum intended load for which they were built or beyond their manufacturer's rated capacity. Non-self supporting ladders shall be angled so that the horizontal distance from the top support to the foot of the ladder is approximately one quarter of the working length of the ladder. Wood job-made ladders with spliced side rails shall be angled so that the horizontal distance is one-eighth the working length. Fixed ladders shall be used at a pitch no greater than 90 degrees from the horizontal as measured to the backside of the ladder. Prior to use, ladders shall be inspected for cracks, splits, and loose components. Any ladder found to be defective will be thrown out and replaced. Before climbing a ladder, the employee shall check that their shoes and ladder rungs are free from grease, oil and other debris. Always face the ladder when climbing and never carry heavy or bulky material/tools when climbing a ladder. Never hang unsecured tools from the ladder or use as a platform, runway or scaffold.

Scaffold

Three major types of scaffolding are rolling scaffold, suspended scaffold and built-up scaffold. The type of scaffold used depends on the individual work situation. Scaffold shall be capable of supporting at least four times the maximum intended load. Scaffold suspended by rope shall be capable of supporting six times the rated load. Scaffold shall be erected by competent persons. Prior to erecting scaffold be sure the footing is sound and capable of carrying the maximum intended load without settling or becoming displaced. Be sure the area is free of litter and debris. Do not use objects such as brick, barrels, or concrete blocks to support scaffold or planks. Damaged sections of scaffold shall be removed or repaired prior to use. Guardrail and toeboards shall be installed on open sides and ends of platforms more than 10 feet above the ground. Guardrail shall be 2x4 inches or the equivalent, approximately 42 inches high with midrail, when required. Supports shall be intervals not to exceed 8 feet. Toeboards shall be a minimum of 4 inches in height. All planking platforms shall be overlapped a minimum of 12 inches or secured from movement. Planks shall not extend over their end support less than six inches nor more than 18 inches and/or shall be secured from movement. The poles, legs or uprights shall be plumb and securely braced to prevent swaying and displacement. Rolling scaffolds shall have lockable wheels to prevent unexpected movement. Scaffold shall be unoccupied prior to movement. Overhead protection shall be provided when exposed to such hazards. Should any type of spillage onto planking occur, immediate clean up shall take place. No welding, burning, riveting or open flame work shall be performed on any scaffold suspended by synthetic or fiber rope. Only treated or protected synthetic or fiber rope may be used near any work involving corrosive substances or chemicals. Regular inspections of the scaffolding will be conducted throughout the project. Should any defects or unsafe conditions be found, immediate corrective action will take place prior to resuming use of scaffold. Fall protection devices shall be used on elevations higher than six feet. Employees shall not work on scaffolds during high winds or during storms; or if scaffold is covered with ice or snow unless it is removed to prevent slipping. Only treated or protected rope shall be used for scaffold and shall be kept clear of abrasions or corrosive chemicals. Scaffolds shall be secured to permanent structures by use of anchor bolts, reveal bolts or other equivalent means. OSHA regulations contain mandatory requirements to the safe use and construction of scaffolding. Prior to use of any type of scaffold the OSHA regulations shall be consulted.

3.2 Public Protection

Every sidewalk or public passageway adjacent to or near the work shall either be closed, relocated, or protected. Passageways which must be used by the public shall be kept clear and unobstructed at all times. Whenever possible, pedestrian and vehicular traffic will be prohibited.

Where pedestrian traffic cannot be relocated and is required, a substantial sidewalk shed shall be constructed the entire length of such public use route and shall be of sufficient width so as not to cause congestion. Sidewalk sheds shall be lighted by natural or artificial means, if needed. All sidewalk sheds shall be adequately braced and connected so as not to cause displacement or potential injury. Where pedestrian traffic is required, other than the use of existing sidewalks, a temporary walkway shall be constructed of a fence on the inner side and a continuous railing at the street side. Walking surfaces shall be free of debris, litter and any other potential hazards. Moveable sections shall be provided if necessary to perform the work. When a building is partially occupied, or public entrance is needed in a building that is being partially demolished, an entrance shall be provided on the street side that is protected by a sidewalk, shed or canopy. When adjacent buildings are lower than the structure being worked on, it's roof shall be protected with barriers and debris catchers. Any doors or gates located on a public passageway shall be constructed to swing toward the site and not toward the pedestrian or vehicular traffic.

Section 4: Equipment

4.1 Hand Tools

Safe carrying of hand tools mandates proper attitude and respect for the tool. Workers should not take for granted that "everyone knows how to use" a hand tool. Many accidents occur due to the carelessness in transporting and use of small hand tools. Precautions against injury shall be taken when carrying hand tools, transporting on ladders and when using scaffoldings. Pointed tools should never be carried point-up but carried with the edge pointed away from the body or in a pouch or tool box. When carrying tools on ladders, the worker shall ensure that he is able to use both hands to climb. Tools with electrical cords shall not be transported by the cord, but in a bucket, tool box or handed from worker to worker. Workers shall be knowledgeable in the safe use, care and storage of hand tools. Hand tools shall be inspected prior to each use to ensure safe working condition. Tools shall be kept in safe places when not in use and shall not be allowed to accumulate unnecessarily in the work area. Any tool found to be defective will be repaired or replaced. Broken tools will be tagged as inoperable until repairs can be made.

Wire and Bolt Cutters

These cutters are used to remove wires, cables, bolts and reinforcing rods. Eye protection must be worn when using such tools. Special care shall be given when working in the vicinity of live electrical wires. Proper selection of type of cutter used will be made for appropriate type of work. Cutters shall not be used as pry bars or nail pullers.

4.2 Axes, Hammers and Sledges

Axes

Before lifting an axe, workers shall ensure that no other worker is in the swing area of the axe or that there are no overhead wires, vines, pipes, etc. Axes shall be carried with their sheaths or guards in place, at your side with handle up and shank in the palm of your hand. Always check to make sure the head is securely attached to the handle and that the handle is free of cracks and splits. The head should be checked for sharpness as a dull or light axe will bounce off the work.

Hammers and Sledges

Hammers and sledges are dangerous when their heads chip or come loose from handles. Always check to make sure heads are securely attached and that hammerhead is not mushrooming. Never use a hammer to pound on another hammer. Always check for cracks and splits.

4.3 Small Hand Tools / Shovels

Small hand tools such as chisels, files, nail pullers, crowbars, screwdrivers, etc. shall be checked for proper working order prior to use. Any defective tool will be replaced. Always store and transport small hand tools in a pouch or tool box. Do not allow to accumulate and become unorganized in the work area.

To avoid back injury use legs rather than arms to lift. To push the shovel use the ball of the foot rather than the arch. This way the shovel will not cut into the ankle.

4.4 Power Tools / Electric Tools / Gasoline Powered Tools

Power Tools

Power tools can present extra hazards such as electrical shock, particles in the eyes, burns and cuts. Most accidents can be prevented by following these rules in regard to handling cords, power lines and hoses:

1. Keep out of passageways where workers might trip and fall over them. Take care not to drop, drag or drive over cords and hoses.
2. Keep clean of oil and other chemical substances. Keep away from heat and sharp edges.
3. Disconnect when not in use and when making repairs or adjustments.
4. Always check for good, safe working order and replace any defective parts or equipment.

Electrical Tools

Electrical tools should be properly grounded or double insulated. Outlets which are not part of a permanent wiring system shall have a ground fault interrupter. Prior to use, check for frayed or broken wires, cracked plugs and proper grounding. Do not use on wet ground or flooring. Take care not to cut through power supply.

Gasoline Tools

Hazards from use of gasoline powered tools include toxic fumes and fire. Gasoline should never be poured on hot surfaces and should be kept away from flame or lit cigarettes. Never fuel an engine while in operation. To avoid build up of toxic fume, ensure proper ventilation when in enclosed spaces.

4.5 Blade Tools / Chainsaws

Blade Tools

Blade tools shall be equipped with a safety guard. The safety guard will be replaced when damaged or worn. Check blades for cracks, scratches and replace if needed. Also check blades for proper mounting, security and proper rotation. Refer to manufacturer's instructions. Proper personal protective equipment is required when working with blade tools. Safety goggles are a must. Be sure no foreign objects or material are in the way of the cut. This will cause jamming, grinding and excessive pressure on the wheel.

Chainsaws

The most common accident with chainsaws is the kickback. Kickback occurs when the nose of the chain comes in contact with a solid object. Some chainsaws are equipped with an anti-kickback device. This reduces the risk but does not eliminate it. The operator shall ensure the teeth are kept sharp and the chain tight. Chains showing excessive wear will be replaced. Always position your body entirely to one side of the saw to avoid being in the way of the kickback. Never reach the saw above chest height and keep a firm grip with both hands. Protection equipment such as goggles, ear plugs and hard hats should be worn at all times.

4.6 Air Compressors

Air compressors not used properly can cause severe injury and even death. At the source of supply a pressure valve is supplied to reduce air pressure in case of hose failure. When attaching hoses, all the couplings have small openings which line up. A safety clip can be inserted to secure the couplings. Pneumatic tools should be secured to the hose by positive means to prevent accidental disconnection. Proper personal protective equipment shall be provided and used by workers involved with this type of equipment. Pointing or touching the compressed air hose to the body can cause severe injury. Employees shall be informed that they are not permitted to blow dust from their clothing with this instrument.

4.7 Heavy Equipment

Inspection

The most effective way to prevent accidental injury is to perform periodical inspections of all equipment. In the case of heavy equipment, owner's manuals will be consulted for care and maintenance prior to use. A person familiar with the machinery will perform inspections. Prior to starting work, the equipment operator shall do a walk around inspection before climbing onto the machine. Missing bolts, pins, loose fittings, frayed cables and hoses, loose tracks and pads are an example of possible defective items that may need to be replaced. The following items will be checked daily – cracked paint, battery fluid levels, hydraulic systems, fuel supply, brake system, cooling system, tire inflation and engine oil. At this time, filter plugs and caps should be secured. Check ground underneath machine for leaking fluids. Be sure all guards, cables, pulleys are operational. The work site area shall be surveyed to assure the ground is sturdy and there is no loose ground or mud where heavy equipment is to be used. For floors, weight load capacity shall be checked in advance to determine their safety for use of heavy machinery. Floor openings will be protected by curbing. Prior to starting up the machine, be sure cab is free of tools, personal items or other material that may obstruct the movement of controls or visibility of the operator. When required, a fire extinguisher shall be supplied and mounted within the cab. After start-up check all gauges, controls, lights, horns, steering and other controls. If unusual noises are heard, inspect and make necessary repairs prior to use. Any faulty equipment will be tagged with warning tags appropriate to defective operations. The equipment will not be used until properly repaired. Parking and vehicle shut down shall adhere to manufacturer instructions. Whenever possible equipment will not be parked on an incline.

Maintenance

Only persons familiar with the heavy equipment shall make repairs. Prior to performing repairs the equipment will be moved to a safe location. Before climbing underneath be sure the wheels are blocked and the machinery is out of traffic passageways. When working on equipment in a closed garage, be sure proper ventilation is provided to prevent poisoning from exhaust fumes. All controls and gears shall be in the neutral position. Motors shall be turned off and the brakes set. Tag starting controls before beginning repair work and remove when complete. Keys should never be left in the ignition when work can be performed with the engine off. Batteries cause the most frequent accidents. When replacing always remove the ground clamp first and replace last. To prevent sparking when charging, the charger should be turned on only after the leads are connected and shut off before leads are removed. Battery acid burns the skin and may cause blindness if splashed into eyes. Safety goggles should be worn. It will also burn holes in clothing. If a worker comes into contact with battery acid immediately flush with large amounts of water and get immediate medical treatment.

Transport of Heavy Equipment

Prior to transport of heavy equipment, whether driven, pull towed or towed on a flat bed truck, clearance of bridges, tunnels or other obstacles shall be anticipated and planned. The height, weight and dimensions of the vehicle shall be considered. Congested areas should be avoided whenever possible. To prevent movement when transporting on flat bed trucks, chock blocks should be placed in front of the wheels. The machinery shall be cleaned of all soil, oil or grease which may cause the machinery to slip. To avoid tipping be sure the ground is level and dry. Keep buckets, booms and blades as low as possible and secured. Cover any exhaust stacks. Position gears in park and apply brake. Secure to truck with chains or cables. Be sure tie downs are not in contact with hoses, hydraulic cylinders, valves, rods or tires. Refer to owner's manual for tie down points. Machinery overhang and slow moving vehicles should have warning flags during transportation on public roads. Lights should be on. Always consult the owner's manual for loading and unloading procedures.

Safe Handling and Use

Take caution when using loaders and the bucket limits visibility. When the loader tips forward, lower the bucket rather than apply brakes. For stability and visibility always carry the load near the ground and never overhead. Dump loads with the wind to the operators back. A canopy should be installed on all loaders. This provides protection from falling debris and injury if equipment accidentally rolls over. Be aware of any debris which can get caught in equipment tracks. Certain types of debris (reinforced steel) can damage the equipment and is

dangerous to nearby workers. The machinery operator is responsible for maintaining the equipment in proper working order. Hook ups, safety chains and braking system shall be inspected before each use. Drivers, if required, shall be properly licensed for the type of machinery used.

Loading Dump Containers

Always use cautions not to spill debris over side of the containers. Be sure no pedestrians or vehicles are near the container prior to dumping. Take caution when dumping large pieces of concrete. This can cause damage to the container or truck. A worker shall assist in directing where to place the load inside the container so debris can be distributed evenly. Do not overload container. Clean off any loose debris prior to removing from site and cover so that debris does not fly out during transportation. The waste hauler shall be licensed/permitted to transport waste as per federal and state guidelines where work is taking place. The driver shall also be properly licensed.

Section 5: Welding & Cutting

5.1 Safety Precautions / Responsibility / Personal Protective Equipment

A permit shall be obtained for welding and cutting procedures where applicable. Prior to welding or cutting, remove all fire hazards present in the work area. If hazards cannot be removed use guards to confine the object. When removing or guarding cannot be done, welding or cutting shall not take place. Whenever cracks, holes or openings are present in floors, walls or ceilings, to adjacent areas, area shall be sealed off and any combustible materials will be removed or guarded. Fire extinguishers shall be ready and maintained for immediate use. This may include pails of water, buckets of sand, hose or portable extinguishers. Type of extinguisher is dependent of the type of combustible material. Fire watchers shall be present at any time welding or cutting is performed. Fire watches shall be trained in the use of fire extinguisher equipment and shall be responsible for immediate availability of such. When using extinguishers they shall meet the capacity of the present fire. Fire watchers shall watch for fire in all exposed areas. A fire watch shall be maintained for at least one half hour after welding/cutting procedures are completed. All work areas shall be kept free of debris such as paper, wood shavings, and textile fibers. Combustible materials on floors that cannot be removed shall be kept wet, covered with damp sand or protected by fire resistant shields. Where floors are wet, welding/cutting equipment will be protected from electric shock. Welding and cutting procedures shall not be performed in sprinkler building where the system is impaired.

Management shall designate a site supervisor who will be authorized and oversee cutting and welding operations. Supervisor shall also implement and ensure practice of safety procedures. Management shall ensure that welding and cutting employees are properly trained in the trade and use of equipment. All employees and contractors on site will be advised of flammable materials or hazardous condition which may affect the welding/cutting work. The supervisor will further be responsible for assuring work area condition are safe from fire hazards, ensure personal protective equipment is available and in use. He/she shall further assign the fire watch.

Helmets or hand shields shall be provided during arc welding/cutting operations. Helpers and attendants will be provided protection as well. Face shields, goggles (with or without side shields) shall be worn and designed appropriately for the work performed. Goggles shall be made to prevent fogging, be free of scratches and other defects which may inhibit visibility. Shading shall be comparable to welding operations and arc. Helmets and hand shields shall be insulated for heat and electricity and be capable of withstanding sterilization. Helmets and hand shields shall be capable of protecting the face, neck and ears from radiant energy from the arc. All parts shall not be constructed or material that will readily corrode or discolor the skin. The welder shall at all times protect himself from electrical contact with his work or other grounding structures. The welder shall take care that live metal parts of an electrode or its holder will not touch bare skin or damp clothing. Cables shall never be wrapped around a workers body as they can transmit dangerous amounts of current.

5.2 Ventilation

This section is based on gas and arc welding in relation to the amount of allowable exposure determined by dimension of space, number of welders, and possible evolution of hazardous fumes, gases, or dust according to the metals involved. When work is performed in an area where it is screened on all sides, screens are preferably mounted so that they are about two feet above the floor unless work is performed at such low level that the screen must be extended nearer to the floor to protect nearby workers. Local exhaust or general ventilation systems will be provided to keep toxic fumes, gases or dust below the maximum allowable limit in accordance with the most recent revision of 29 CFR 1910.1000. Welding materials shall be labeled if hazardous materials capable of release during cutting or welding. All filler materials and fusible granular materials shall carry the following label: "Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. Use adequate Ventilation. See ANSI Z49.1 –1967 Safety in Welding and Cutting." Mechanical ventilation shall be provided when working in spaces less than 10,000 cubic feet per welder; in a room having a ceiling height of less than 16 feet. The minimum rate shall be 2,000 cubic feet per minute per welder. Oxygen shall never be used as ventilation.

5.3 Containers

Containers that have stored combustible material such as gasoline, kerosene or light oils will not be welded or cut unless the container can be completely cleaned and prove safe by a qualified person.

5.4 Torches

Cylinders

Special care will be taken when handling cylinders. They will not be dropped, dragged or struck. Cylinders must be kept in an upright position. Valves will be closed when transported and cylinders secured in place. Valves shall have protective covers when not in use. Cylinders will be stored in an area separate from fuel gas and oxygen cylinders. Storage for cylinders shall be kept clear of combustible materials and "No Smoking" signs posted. They will not be stored near radiators and piping systems that may be used for electrical grounding such as arc welding machines. Empty cylinders will be marked as such, valves closed with protection cap and cylinder secured.

Set & Start Up

Only properly trained workers shall set up torching equipment. Valve protection caps are removed first and the valve quickly opened to remove dust particles from the opening. This will not be done near other workers, cutters or ignition sources. The regulator is then attached in accordance with the manufacturer's instructions. Pressure regulators shall be serviced and tested regularly for accuracy. Regulators shall be used for the gases actually listed on the regulator. Connect hoses and attach torch only after regulators are in place. To bind the hose together use friction tape. Hoses shall be checked prior to each use for signs or wear. Parts such as valves and fittings should not be oiled or greased. A leak test shall be performed to ensure fittings and valves are correctly seated. The test shall take place by applying soapy water on each fitting and valve. Any leak which shows bubbles must be repaired. If a leak on a gas cylinder cannot be repaired, it shall be tagged for non-use and removed from the work site.

Torches shall be lighted with a friction lighter and not with cigarette lighters or matches.

A squealing sound indicates that gasses have flashed back into the torch. If this happens torch valves and cylinder valves shall be immediately closed to remedy the fire flashback that may occur in the hose. Causes of flashbacks are improper pressures, kinked hoses, loose, clogged or overheated tips.

Shut Down

When the shift is over the torch valves should be closed, fuel gas first; cylinder valves closed – fuel gas cylinder first; torch valves opened than closed to relieve pressure; regulators, hoses and torches removed and stored; replace valve protection caps on cylinders. When the worker leaves the work area all equipment shall be shut down and disconnected.

5.5 Arc Welding

Arc welders must wear welding helmets for personal protection. Care must be taken so sparks are kept away from nearby workers and combustibles. When high intensity of light rays are emitted, welding shall be shielded by screens or curtains to protect workers in the vicinity. Mild shock is possible when a person comes into contact with the low voltages used in arc welding. Damp skin or working in wet areas are also a conductor of electrical shock. Safe work practices and personal protective equipment shall be used to ensure safety. Cables shall be inspected for wear and damage. Cables with damaged insulation, conductors or connections shall be repaired or replaced. Cables should always be kept dry from grease and oils. Neatly uncoil cables prior to use to prevent damage to insulation. Cables should be kept away from power supplies and high voltage conductors. When working a distance from the welding unit cables should be hung overhead, if possible. When cable is on the floor it shall be secured as to not cause trips and falls, and kept away from areas that present oils, grease or water.

Two types of grounding welding equipment are described below:

Common Ground

Welding current should be returned to the welding machine by a single work lead from the work to the appropriate connector on the machine. However, in some cases it may be necessary to pass the return current through a conductor on which the piece rests or to which the piece is connected. In this case, it shall be determined that the required contact exists at all joints in the material. Arc, sparks or heat shall cause rejection of that material as a return conduit. Pipelines containing combustibles or electrical wiring will not be used as a ground. Welding currents shall not be transported by means of chains, wire ropes, cranes, hoists or elevators.

Safety Ground

The frame of the welding machine as well as the piece of material being worked on, should be solidly connected to a safety ground. Grounding can be a metal surface, connecting it to a grounded building frame, or grounding the work lead at or near the welding machine. Avoid double grounding where the current returns through the safety ground instead of through the work lead.

Section 6: Fall Protection

6.1 Scope and Application

Employees shall be protected by Fall Protection devices whenever he/she is 6 feet (1.8 meters) or more above a lower level or when there is a hazard of falling into dangerous equipment. Fall protection shall be chosen appropriately with the type of work being performed. Types of protection are described below.

Safety Systems:

Guardrail Systems

To prevent cuts and laceration top rails and midrails of this type of system shall be at least one quarter inch thickness. Wire rope used for top rails shall be flagged at not more than six foot intervals. Material used shall be easily visible. Steel and plastic banding shall not be used. Top rails and midrails shall be inspected periodically for strength and stability. Top edge height of rails must be 42 inches, plus or minus 3 inches above the walking/working level. Where stilts are used the top edge height shall be increased in an amount to equal the height of the stilts. When there are no walls or parapet walls at least 12 inches high, screens, midrails, mesh, intermediate vertical members or equivalent intermediate structural membranes shall be installed between the top edge of the guardrail system and the walking/working surface. When midrails are used, they must be installed at a height midway between the top edge of the guardrail systems and the walking/working level. When screens and mesh are used, they must extend from the top rail to the walking/working level and along the entire opening between two top rail supports. Intermediate members, such as balusters when used between posts, shall not be more than 19 inches apart.

Midrails and architectural panels installed as a structural member shall have openings no more than 19 inches. Guardrail systems shall be capable of withstanding a force of at least 200 pounds applied within 2 inches of the top edge in any outward or downward direction. The top edge of the guardrail must not deflect to a height less than 39 inches above the walking/working level when performing force test. Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members shall be capable of withstanding a force of 150 pounds applied as stated above. The ends of top rails and midrails shall not overhang terminal posts except where such overhang does not present a hazard. Guardrail system shall be installed and surfaced to prevent clothing from snagging. Guardrails shall be set up so that there are no holes. When holes are used for passage of materials it shall have not more than two sides with removable guardrail sections. Holes will be covered at all times when not in use. If holes are used for access points such as ladders, a gate will be installed to prevent accidentally walking into the hole. If guardrails are used at unprotected sides or edge of ramps and runways, they must be erected on each unprotected side or edge.

Personal Fall Arrest Systems

This type of system consists of anchorage, connectors and a body belt or body harness and may include a deceleration device, lifeline or suitable combinations. If this system is used for fall protection it shall do the following:

- Body harness - limit maximum arresting force on an employee to 1800 pounds.
- Be rigged so an employee cannot fall free more than six feet or contact any lower level.
- Bring an employee to a complete stop and limit maximum deceleration distance to 3.5 feet.
- Have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of six feet.
- Body belts shall not be used for fall arrest.

Dee rings and snap hooks shall have minimum tensile strength of 5,000 pounds; they shall be proof tested to a minimum tensile strength of 3,600 pounds. Testing shall prove that the dee rings and snap hooks do not crack, break or suffer permanent damage. Snap hooks shall be in size compatible with the member to which they are connected and shall be lockable.

On suspended work platforms and scaffolds with horizontal/vertical lifelines, devices used to connect horizontal lifelines shall be capable of locking in both directions. Lifelines shall be protected against being cut. When in the full extending positions, self-retracting lifelines and lanyards that automatically limit free fall distance to two feet or less shall sustain a minimum tensile load of 3,000 pounds. When lifelines do not limit free fall to a distance of two feet lanyards shall sustain a minimum tensile load of 5,000 pounds. Ropes and straps used in lanyards and lifelines and other harnesses shall be of synthetic fiber. Fall protection anchorages shall be capable of supporting double the weight expected and shall be independent of any anchorage used to support platforms and must be capable of supporting at least 5,000 pounds. Lanyards and vertical lifelines shall have a minimum breaking strength of 5,000 pounds.

Safety Monitoring

One person shall be assigned the task of monitoring safety systems. He/she shall:

- be able to recognize fall hazards
- be able to warn workers of fall hazards and unsafe work practices
- operate on the same walk/work surfaces as other workers
- be visible to other workers and close enough to communicate

Mechanical equipment shall not be used or stored in areas where safety monitoring systems are used in roof operations on low-sloped roofs. On low-sloped roofs only one worker or one covered by a fall protection plan shall be allowed in the area where employee is protected by a safety monitoring system.

Safety Net Systems

Safety nets shall never be installed more than 30 feet below walking/working surfaces. Safety nets shall be periodically for wear, damage and deterioration. All mesh crossing shall be secured to prevent enlargement of the mesh opening. The maximum safety net mesh opening shall not exceed 36 square inches; nor be longer than 6 inches on any side. The openings measured center to center of mesh ropes or webbing shall not exceed 6 inches. Minimum breaking strength for each safety net shall be 5,000 pounds. Connections between net panels shall be spaced no more than 6 inches. Safety nest shall be installed so that they never contact the surface below. Safety nets shall extend outward from the outermost projection of the work surface as follows:

- Vertical distance from working level to horizontal plane of net.
- Minimum required horizontal distance of outer edge of net from the edge of the working surface.
- Up to 5 feet 8 feet
- More than 5 feet up to 10 feet
- 10 feet More than 10 feet 13 feet

Safety nets shall absorb and impact force of a drop test consisting of 400 pound bag of sand 30 inches in diameter dropped from the highest walking/working surface, but not less than 42 inches above that level. Any materials, scrap, equipment and tools which fall into the safety net shall be removed as soon as possible and before the next work shift.

Warning Line Systems

Warning line systems (ropes, wires or chains, and supporting stanchions) are to be set up as follows:

- Flagged in not more than 6 foot intervals with highly visible material.
- Rigged and supported so the lowest point is no less than 34 inches from the walking/working surface and its highest point is no more than 39 inches from the walking/working surface.
- Stanchions, after being rigged with warning lines, shall be capable of resisting, without tipping over, a force of at least 16 pounds applied horizontally against the stanchion, 30 inches above the walking/working surface, perpendicular to the warning line and in the direction of the floor, roof or platform edge.
- The rope, wire, or chain shall have a minimum tensile strength of 500 pounds. After being attached to the stanchions they must support without breaking.
- Warning lines shall be erected around all sides of roof work areas. When mechanical equipment is being used, the warning line shall be erected not less than 6 feet from the roof edge parallel to the direction of mechanical equipment operation, and not less than 10 feet from the roof edge perpendicular to the direction of mechanical equipment operation. When mechanical equipment is not being used, the warning line must be erected not less than 6 feet from the roof edge.

6.3 Canopies

Canopies shall be of such strength that falling objects will not penetrate or collapse them.

6.4 Toeboards

Toeboards used for protection from falling objects shall be erected along the edges of the overhead walking/working surface. The distance shall be sufficient enough to protect persons working below. Toeboards shall be capable of withstanding a force of at least 50 pounds applied in any downward or outward direction at any point. Toeboards shall be a minimum of 3.5 inches tall from tope edge to the level of walking/working surface. The can have no more than .25 inches clearance above the walking/working surface and be solid. There may be no openings larger than 1 inch. Tools, equipment and materials shall not be piled higher than the top of the toeboard when possible. If such items pile higher than the toeboard paneling or screening shall be erected to prevent items from falling over the edge.

Section 7: Medical Stress

7.1 Heat Stroke and Heat Stress

Preventing:

- Drink lots of water
- Your body loses a lot of water when you sweat. You should drink 8 to 16 ounces of water every half hour.
- Drink orange juice and eat bananas - These will replenish minerals lost through sweating.
- Take breaks
- Take breaks at least two times a day to cool down your body. A cool body functions better.

Warning Signs:

- Less alert - Headache
- Less coordinated - Nausea

If you feel any of these symptoms notify your supervisor and leave the work area.

Heat Stroke:

Symptoms:

- Hot skin - Headache
- Dry Skin - Dizziness
- Flushed Skin - Nausea
- Confusion - Fainting

Treatment:

- Be sure person is breathing.
- Remove person from the work area.
- Cool the body off immediately with water.
- Do not give a person who has fainted water to drink.
- Call 911.

Heat Stress:

Symptoms:

- Cool Skin - Headache
- Sweaty Skin - Dizziness
- Pale Skin - Nausea

Treatment:

- Remove person from the work area.
- Cool the body off immediately with water.
- Give person water to drink. Do not give a person who has fainted water to drink.

7.2 Cuts / Bleeding / Burns

Whenever someone has a cut that is bleeding heavily, you should cover the wound with a clean cloth. Press on the cloth to give direct pressure on the wound. Do not remove the cloth. Elevate the wound. Get medical attention.

If someone gets a burn apply clean, cold water over skin for at least 15 minutes. If the burn is red or is small and only has a few blisters, clean and cover with a sterile non-stick gauze pad. Get immediate medical attention if the burn is more serious.

7.3 Eye Injuries

An eye injury is the most common injury. Wear proper eye protection. Keep eyewash on the job site for minor incidences. All eye injuries should be checked by an appropriate physician.

7.4 Shock / Electrical Shocks

People who have had a serious injury can easily go into shock. Symptoms of shock are:

- Pale, cold, wet skin
- Rapid heartbeat
- Thready pulse

If you suspect someone is in shock, call 911 immediately. In the meantime, have person lie down, lift their feet up about six inches (unless the injury occurred to the legs or back). If the person is not sweating heavily, cover them with a light blanket. Do not give them anything to eat or drink. Keep person calm until help arrives.

Electrical Shocks

An electric shock can stop your heart. In order to prevent shocks Ground Fault Interrupter (GFI) should be used. Extension cords should have their own GFI. Never use electrical power near water. Tools should be double insulated and grounded. Never cut the prongs on an electrical cord. Be aware of wires in the area where you are working. Make sure they are not live and exposed. Never touch a person who has received an electrical shock. It may shock you as well. First shut off power. Use a dry wood pole to move the person away from anything metal. If appropriately trained, perform CPR and have someone call 911.

7.5 Back Injury

Back injuries are one of the most common injuries. Always get help to lift extremely heavy objects. Lift close to your body. Keep your back straight and use your legs to lift. Make sure your shoulders are in a straight line with your hips. Don't lift, twist or turn at the same time. Never move anyone you suspect has a back injury. Remove all present hazards and call 911

7.6 Slips, Trips and Falls

The following practices shall be implemented to avoid slips, trips and falls:

- Keep work area dry.
- Keep all safety lines neat and in their proper place.
- Equipment, materials and tools shall be picked up and put away when not in use.
- Debris shall be cleaned up immediately.
- Wear proper clothing to avoid catches on equipment and machinery.
- Make sure ladders, scaffolds etc are properly secured and stable.

Should an injury occur assess the seriousness of the injury, stabilize the injured person, notify supervisor, get immediate medical attention.

Section 8: Hazard Communication

8.1- Purpose

The purpose of a Hazard Communication program is to evaluate, document, and take corrective actions of hazardous situations on a job site and provide employees information needed to ensure maximum safety and health.

8.2 - Preliminary Evaluation

Prior to allowing employees to enter the work area, a site assessment of hazardous materials/chemicals shall be made by a qualified person. All materials suspected to pose a hazard to inhalation, skin, absorption or any other condition which may cause death or serious harm will be immediately identified.

Required information shall include:

- Location and size of site.
- Description of response activity or work to be performed.
- Scheduled dates of project or estimated amount of time to complete.
- Graphic site accessibility by air and roads.
- Safety and health hazards expected at site.

- Passageways for hazardous substance removal or protection.
- Status and capabilities of emergency response team available for waste clean-up at time of an emergency.

Assessment

A chemical is considered to be a carcinogen if it has been evaluated by the Internal Agency for Research on Cancer or is listed in the Annual Report on Carcinogens published by the National Toxicology Program (latest edition). A chemical that causes visible destruction or irreversible alterations in living tissue it is considered corrosive.

A chemical is highly toxic when it has a median lethal dose of 50 milligrams or less per kilogram of body weight when administered orally; or has a medial lethal dose of 200 milligrams or less per kilogram of body weight when administer by continuous contact for 24 hours; or has a median lethal concentration in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume, inhalation for one hour (or less if death occurs within one hour). A chemical is considered an irritant, which is not corrosive, but which causes reversible inflammatory effect on living tissue by chemical contact.

8.3 - Communication to Employees

Prior to start of work a list of hazardous chemicals or materials will be established and posted.

Signs and Labels

Warning signs shall be posted in areas where hazardous materials/chemicals are present and stored. Signs shall conform with OSHA 29 CFR standards and shall be appropriate to the type of hazard present. Where applicable, equipment or machinery that contain hazardous materials will also be tagged. Warning labels shall be used on all hazardous material/chemical containers and shall be in English and prominently displayed. Where workers speak another language the information shall be presented in their specific language. Labels shall comply with OSHA, DOT and EPA standards. Containers not labeled shall be assumed hazardous until proven otherwise.

Material Safety Data Sheets

Material safety data sheets (MSDS) shall be provided for all employees and inspectors and will be made part of the health and safety program. MSDS shall conform with OSHA 29 CFR 1010.1200 (g). Employees shall report any suspicious material/chemical that is not tagged or labeled to the supervisor. The supervisor will ensure that no one enters the area of suspicion until complete testing and analysis is done.

8.4 - Types of Hazardous Materials

Asbestos

Asbestos has been widely used in construction since the 1800's. Asbestos fibers that are inhaled can cause lung cancer, asbestosis, mesothelioma and other tumors.

Asbestos is strictly regulated by federal, state and OSHA guidelines, therefore, asbestos containing materials shall be removed only by a licensed asbestos removal contractor and workers who are certified by the jurisdiction having authority where work is to be performed. If material is suspect asbestos, a certified laboratory shall be called in to perform an asbestos survey which includes sampling and analysis of materials.

Any found asbestos shall be removed by others prior to continuing with demolition work.

Final air clearance must be received before any person not certified can enter the area.

PCB's

The removal of PCBs are also strictly regulated by federal guidelines. PCBs are found in transformers and capacitors. Exposure to PCBs can cause potential cancer, liver damage and stomach problems. PCBs do not breakdown after they enter the environment. Only certified persons shall remove PCBs from the equipment.

Prior to demolition of equipment, first check the equipment for a nameplate which should describe the type of PCB contained within the equipment. If no nameplate is found, assume there are PCBs present and have an analysis performed.

All equipment determined to contain PCBs shall be labeled in accordance with OSHA regulations. Prior to the start of work, employees will be informed of the location and hazards of PCBs and precautionary measures. Adequate ventilation shall be provided in all areas where PCBs exist. Where possible local exhaust ventilation shall be used. When engineering controls are not practical, respiratory protection will be used and compliance met with permissible exposure limits. If an accidental spill should occur immediately evacuate work area and contact persons certified for emergency clean up response. Spills are to be reported to the National Response Center at 800-424-8802.

Compressed Gas

Cylinders shall be kept in a safe condition as determined by a visual inspection.

Compressed gas cylinders shall have pressure relief devices installed and maintained.

Flammable and Combustible Liquids

Flammable liquid means any liquid having a flashpoint below 100 degrees Fahrenheit.

Combustible liquid means any liquid having a flashpoint at or above 100 degrees Fahrenheit. Flammable and combustible materials shall be kept away from items which may ignite. Some of these are open flames, lightning, smoking, cutting and welding, hot surfaces, frictional heat, static, electrical and mechanical sparks. Adequate space will be provided to allow movement of personnel and so that fire protection equipment can be brought in quickly.

Combustible waste and residues shall be kept to a minimum, stored in covered metal receptacles and disposed of daily.

8.5 - Employee Training

Employees will be trained on hazardous chemicals in their work area at the time of assignment and whenever a new hazard comes into the work area. Training will include, but shall not be limited to:

- Methods of determining detection of hazardous chemicals or materials
- Location and types of hazard present.
- Risk of exposure including long term effects.
- Warning signs and labels.
- Protective measures.
- Personal Protective Equipment.
- Emergency Response and Medical Treatment
- Material Safety data sheets.
- Hazard Communication program.

8.6 - Communication Amongst Employees

Supervisors and employees shall be equipped with walkie talkies to enable communication between floors and or work areas. For employees not equipped with walkie-talkies, hand signals shall be used. In order to monitor one another for medical stresses, minor injury, and emergency situations, employees shall work in pairs of at least two (buddy system). Buddies are pre-arranged and hand signals or other means of emergency signals for communication are reviewed prior to start of work. Hand signals will be used in the case of breakdown in radio communication. In confined or hot temperature areas, employees will be monitored for heat stresses, such as cramps, exhaustion and stroke. When medical stress and minor injury are suspect, the victim will be moved to a safe area from the work being performed until medical assistance can be given. Emergency medical facilities and response team phone numbers shall be posted throughout the work area.

Section 9: Demolition Work

9.1 - Preparatory Operations

Where employees are working in areas that have been damaged by fire, flood or explosion, the walls and floors shall be braced. All electric, gas, water, steam, sewer and other services lines shall be shut off or otherwise controlled outside the building prior to start of demolition work. The utility company involved shall be notified in advance.

If power, water or other utilities are necessary to perform the work, such lines shall be temporarily relocated and protected. It shall also be determined if dangerous substances such as hazardous gas, explosive or flammable materials were used in pipes, tanks or other equipment in the structure. Testing and removal shall be performed before demolition work begins. All glass fragments shall be removed prior to demolition. Wall openings shall be protected to a height of approximately 42 inches.

Where debris is dropped through holes in floor without the use of chutes, the area where material is dropped shall be completely enclosed with barricades not less than 42

inches high and not less than 6 feet back from the projected edge of the above opening.

Warning sign for hazard of falling debris will be posted at each level. Removal of debris shall not take place until handling debris from above ceases.

All floor openings not used for material drops shall be covered with material strong

enough to support the weight of any load imposed. Such material shall be securely attached to prevent movement. Except for floors with chutes, the demolition of exterior walls and floor construction shall begin at the top of the structure and proceed downward. All materials of exterior walls and floors will be dropped to the storage area below before commencing removal of such on the floor below.

Employee entrances to multi-story buildings shall be completely protected by sidewalk sheds, canopies or both. Entrances shall provide protection from the face of the building for a minimum of 8 feet. All canopies shall be at least 2 feet wider than the building entrances or openings (1 foot wider on each side) and shall be capable of sustaining a load of 150 pounds per square foot.

9.2 Stairways, Passageways and Ladders

Only stairways, passageways and ladders designated for access to the building shall be used. All other access ways shall be entirely closed off at all times. All stairways, passageways, ladders and incidental equipment shall be periodically inspected to ensure safe working condition. In a multi-story building, stairways and passageways shall be lighted by natural or artificial means and be completely covered over at a point not less than 2 floors below the floor where work is being performed. Direct passageways to where work is being performed are to be separate, well lit and protected.

9.3 - Chutes

No material shall be dropped outside the building unless properly protected. All chutes at an angle of more than 45 degrees from the horizontal shall be entirely enclosed, except for openings equipped with closures at or about floor level for the insertion of materials. Openings shall not exceed 48 inches in height measured along the wall of the chute. At all stories below the top floor, such openings shall be closed when not in use. Gates shall be installed in each chute at or near to discharge end. An employee shall be assigned to control the operation of the gate and backing and loading of trucks. When operations are not in progress chutes shall be securely sealed off. Any chute opening where debris is dumped, shall be protected by a guardrail approximately 42 inches above the floor or other surface on which the workers stand to dump material. Any space between the chute and the edge of openings in floors through which it passes shall be solidly covered over. When material is dumped by mechanical equipment or wheelbarrow means, a toeboard shall be attached not less than 4 inches thick and 6 inches high at each chute opening. Chutes shall be designed and constructed of such strength to eliminate failure due to impact of material or debris loaded therein.

9.4 - Removal of Material Through Floor Openings

Cuts in floors for disposal of material shall be no larger than 25 percent of the aggregate of the total floor area, unless lateral supports of the removed flooring remain in place. Weakened floors made unsafe by demolition or by other means, shall be shored to carry safely the intended imposed load.

9.5 - Removal of Walls, Masonry Sections and Chimneys

Masonry material shall not be permitted to fall upon floors in such quantities to exceed the safe carrying capacities. No wall one story in height shall be left to stand alone unless braced or originally constructed stand without lateral support and is in safe condition. At the end of each shift, walls shall be left in a stable, secure position. Employees shall not work on top a wall in hazardous weather conditions. Structural or load supports shall not be cut or removed on any floor until all stories above have been demolished and removed. Floor openings within 10 feet of any wall being demolished shall be planked solid, except when workers are kept out of the area below. Steel may be left in place during demolition when buildings are constructed of "skeleton-steel". All steel beams, girders and structural supports shall be clear of all loose material as the demolition progresses downward. Walkways or ladders will be provided for safe entry or exit to any scaffold or wall. Retaining walls shall not be demolished until adjoining structures or earth supports have been properly braced.

9.6 - Manual Removal of Floors

Openings cut in floor shall extend the full length of the arch between supports. Debris shall be removed from arch and adjacent areas before demolishing any floor. When breaking down floor arches between beams, planks

not less than 2 inches by 10 inches in cross section, full size undressed shall be provided. These planks shall be located to provide safe support should arch collapse. Open space between planks shall not exceed 16 inches. Walkways shall not be less than 18 inches wide, formed of planks not less than 2 inches thick if wood, or of equivalent strength if metal. These walkways shall be provided for workers to reach any point without walking upon exposed beams. Stringers of appropriate strength shall be installed to support flooring planks. The ends of stringers shall be supported by floor beams or girders and not by floor arches alone. Planks will be laid together over solid bearings and the ends overlapped at least 1 foot. When removing floor arches the area shall be barricaded to prevent access and employees shall not be allowed directly underneath. The floor arches and surrounding floor area for a distance of 20 feet shall be cleared of debris before demolishing floor arches.

9.7 - Removal of Wall, Floors and Material with Equipment

Floors and working surfaces shall be of sufficient strength to support the equipment being used. Floor openings shall be curbed to prevent equipment from running over the edge.

9.8 - Removal of Steel Construction

Planking shall be provided for workers engaged in razing the steel framing after floor arches have been removed. Steel construction shall be dismantled column length by column length, and tier by tier. Columns may be in two-story lengths. Any structural member being dismantled shall not be overstressed.

9.9 - Storage

Debris shall not be allowed to accumulate so as to exceed maximum floor capacity loads. Areas where material is stored shall be blocked off except for openings for removal of material. Such openings shall be kept closed when not in use. Storage areas elevations shall not endanger the stability of the structure and shall not be more than 25 feet above grade.