CONSTRUCTION SAFETY STANDARDS

DEPARTMENT OF VETERANS AFFAIRS MEDICAL CENTER
COATESVILLE, PENNSYLVANIA 19320

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EDOUARD LEMAY Digitally signed by EDOUARD LEMAY Date: 2024.09.27 16:27:26 -04'00'

Edouard Lemay Jr. CHIEF ENGINEER

DEPARTMENT OF VETERANS AFFAIRS MEDICAL CENTER COATESVILLE, PENNSYLVANIA 19320

GUIDELINES

This digest of construction safety and health requirements has been compliance of all Safety, Health and Fire Protection Regulations, which must be observed while working at this health care facility. The sources of these regulations are:

1. U.S. Department of Labor Standards - OSHA 29 CFR 1910 (General Industry) latest Edition

2. U.S. Department of Labor Standards - OSHA 29 CFR 1926 (Construction Safety) latest Edition

3. National Fire Protection Association Codes (99,101)

4. Department of Veterans Affairs Safety Policies and Procedures

The enforcement of all safety regulations contained within this digest is carried out by the Medical Center's Safety Officer representing the Chief Engineer. The Medical Center's Safety Officer will make inspections of contractor personnel performing work on the station, advising them of mandatory safety procedures. If flagrant violations are observed the Safety Officer can order shutdown of activities until he can contact the Chief Engineer to present his appraisal of the situation. Flagrant violations are risk to life limb, and eyesight. They also include damage to critical medical facility infrastructure. Private contractor construction work at this facility is also subject to inspection by U.S. Department of Labor, Occupational Safety and Health Administration, Philadelphia Office.

Note: Construction Contractor are required to have employees tested for TB, treated as necessary, and provide a letter of certification that their employees are "TB FREE" with their other required documentation prior to the start of construction.

ATTACHMENT #1

STANDARDS

1. ABRASIVE GRINDING

   A. All abrasive wheel bench and stand grinders shall be provided with safety guards which cover the spindle ends, nut and flange projections and are strong enough to withstand the effects of a bursting wheel.

   B. An adjustable work rest of rigid construction shall be used on floor and bench-mounted grinders, fixed base, off-hand grinding machines with the work rest kept adjusted to a maximum clearance of 1/8 inch between rest and wheel.

   C. All abrasive wheels shall be closely inspected and ring tested before mounting to ensure that they are free from defects.

2. ACCIDENT RECORD KEEPING REQUIREMENTS

   A. Within 48 hours after its occurrence, an employee accident which is fatal to one or more employees or which results in the hospitalization of five or more employees shall be reported by the employer, either orally or in writing, to the nearest OSHA Area Director.

   B. Records as prescribed in the record keeping requirements booklet shall be kept for all accidents that result in fatality, hospitalization, lost workdays, medical treatment, job transfer, termination or loss of consciousness.

   C. All injuries sustained by contractors while on VA property must be reported to the Safety Office at Extension 2104.

3. AIR TOOLS

   A. Pneumatic power tools shall be secured to the hose in a positive manner to prevent accidental disconnection.

   B. Safety clips or retainers shall be securely installed and maintained on pneumatic impact tools to prevent them from being accidentally expelled.

   C. The manufacturer's safe operating pressure for all hoses, fittings and utilization equipment shall not be exceeded.

4. BELT SANDING MACHINES

   A. Belt sanding machines shall be provided with guards at each nip point where the sanding belt runs onto a pulley.

   B. The unused run of the sanding belt shall be guarded against accidental contact.

5. BOILERS

Boilers provided by the contractor shall be deemed to be in compliance with the requirements of this part when evidence of current and valid certification by an insurance company or regulatory authority attesting to the safe installation, inspection and testing is presented.

6. CHAINS

(See wire ropes, chains, hooks, etc., #63).

7. COMPRESSED AIR, USE OF

Compressed air used for cleaning purposes shall not exceed 35 psi when the nozzle end is obstructed or dead ended and then only with effective chip guarding and personal protective equipment.

8. COMPRESSED GAS CYLINDERS – (OSHA PART 1926.350 Thru 1926.354)

A. Valve protection caps shall be in place when compressed gas cylinders are transported, moved or stored.
B. Cylinder valves shall be closed when work is finished and when cylinders are empty or are moved.
C. Compressed gas cylinders shall be secured in an upright position at all times, except when cylinders are actually being hoisted or carried.
D. Cylinders shall be kept at a safe distance or shielded from welding or cutting operations. Cylinders shall be kept at a safe distance from radiators or other heat sources or where they can contact an electrical circuit.
E. Oxygen and fuel gas regulators shall be in proper working order while in use.

9. CONCRETE, CONCRETE FORMS AND SHORING

A. All equipment and material used shall comply with ANSI A10.9 “Safety Requirements for Concrete Construction and Masonry Work”.
B. Employees shall not be permitted to work above vertically protruding reinforcing steel, unless it has been protected to eliminate the hazard of impalement.
C. Powered and rotating-type concrete trowelling machines that are manually guided shall be equipped with a dead man type operating control.

D. Formwork and shoring shall safely support all loads imposed during concrete placement. Drawings or plans of formwork and shoring systems shall be available at the job site.

10. CONVEYORS

A. Conveyor systems shall be equipped with an audible warning signal which can be sounded immediately before starting up the conveyor.

B. Where conveyors pass over work areas or aisles, guards shall be provided to protect employees from falling material.

C. Conveyors shall be in compliance with ANSI B20.1, "Safety Code for conveyors, cableways and related equipment".

11. CRANES AND DERRICKS

A. The contractor shall comply with the manufacturer's specifications and limitations.

B. Rated load capacities, recommended operating speeds and special hazard warnings or instructions shall be posted on all equipment and be visible from the operator's station.

C. Equipment shall be inspected before each use and all deficiencies corrected before further use.

D. Accessible areas within the swing radius of the revolving superstructure shall be barricaded.

E. Except where electrical distribution and transmission lines have been de-energized and visibly grounded at point of work, or where insulating barriers not a part of or an attachment to the equipment or machinery have been erected to prevent physical contact with the lines, no part of a crane or its load shall be operated within 10 feet of a line rated 50 kV or below; 10 feet + 0.4 inches for each 1 kV over 50 kV for lines rated over 50 kV; or twice the length of the line insulator, but never less than 10 feet.

F. (For rules pertaining to Rigging Equipment, see item #62).

12. DISPOSAL CHUTES

A. Whenever materials are dropped more than 20 feet to any exterior point, an enclosed chute shall be used.

B. When debris is dropped through holes in the floor without the use of chutes, the area where the material is dropped shall be enclosed with barricades not less than 42 inches high and not less than 6 feet back from the projected opening.

13. DRINKING WATER

A. An adequate supply of portable water will be provided in all places of employment.

B. Portable drinking water containers shall be capable of being tightly closed and be equipped with a tap.

C. The common drinking cup is prohibited.

D. Unused disposable cups shall be kept in a sanitary container and a receptacle shall be provided for used cups.

14. ELECTRICAL

A. All electrical work shall be in compliance with the current National Electrical Code, unless otherwise provided by OSHA regulations.

B. The noncurrent-carrying metal parts of fixed, portable and plug-connected equipment shall be grounded. Portable tools and appliances protected by an approved system of double insulation need not be grounded.

C. Extension cords shall be the 3-wire type, shall be protected from damage and shall not be fastened with staples, hung from nails, or suspended from wires. Splices shall have soldered wire connections with insulation equal to the cable. Worn or frayed cords shall not be used.

D. Exposed bulbs on temporary lights shall be guarded to prevent accidental contact. except where bulbs are deeply recessed in the reflector. Temporary lights shall not be suspended by their electric cords unless designed for this use.

E. Receptacles for attachment plugs shall be of the approved, concealed contact type. Where different voltages, frequencies, or types of current are supplied, receptacles shall be of such design that attachment plugs are not interchangeable.

F. Each disconnecting means for motors and appliances and each service feeder or branch circuit at the point where it originates shall be legibly marked to indicate its purpose, unless located and arranged so the purpose is evident.

15. EXCAVATING AND TRENCHING – (OSHA PART 1926.652)

A. Before opening any excavation, efforts shall be made to determine if there are underground utilities in the area and they shall be located and protected during the excavation operations.

B. The walls and faces of all excavations and trenches more than 5 feet deep, in which employees are exposed to danger from moving ground shall be guarded by a shoring system, sloping of the ground, or some other equivalent means.

C. A means of egress such as but not limited to a ladder, stairway or ramp shall be located in every excavation or trench 4 feet (1.22M) or more in depth so as to require no more than 25 feet (7.62M) of lateral travel for employees.

D. In excavations which employees may be required to enter, excavated or other material shall be effectively stored and retained at least 2 feet or more from the edge of the excavation.

E. Daily inspections of excavations will be made by a competent person. If evidence of possible cave-ins or slides is apparent, all work in the excavation shall cease until the necessary precautions have been taken to safeguard the employees.

16. EXPLOSIVES AND BLASTING

A. Only authorized and qualified persons shall be permitted to handle and use explosives.

B. Explosive material shall be stored in approved facilities as required by provisions of the Internal Revenue Service regulations published in 26 CFR 181, "Commerce in Explosive".

C. Smoking and open flames shall not be permitted within 50 feet of explosives storage magazines.

D. Procedures that permit safe and efficient loading shall be established before loading is started.

17. EYE AND FACE PROTECTION – (OSHA 1926.102)

A. Eye and face protection shall be provided when machines or operations present potential eye or face injury.

B. Eye and face protective equipment shall meet the requirements of ANSI Z87.1, "Practice for Occupational Eye and Face Protection".

C. Employees involved in welding operations shall be furnished with filter lenses of the proper shade number.

D. Employees exposed to laser beams shall be furnished suitable laser safety goggles which will protect for the specific wave-length of the laser and be of optical density (O.D.) adequate for the energy involved.

18. FIRE PROTECTION

A. The Medical Center's firefighting program is to be followed throughout all phases of the construction and demolition work involved.

B. Firefighting equipment will be conspicuously located and readily accessible at all times and be maintained in operating condition.

C. Carbon tetrachloride and other toxic vaporizing liquid fire extinguishers are prohibited.

D. All construction employees shall receive fire/safety orientation from their supervisors via the general contractor.

E. All fire extinguishers will be inspected and initialed on a monthly basis by contractor personnel.

19. FLAGMEN

A. When signs, signals and barricades do not provide the necessary protection on or adjacent to a highway or street, flagmen or other appropriate traffic controls shall be provided.

B. Flagman shall be provided with and shall wear a red or orange warning garment while flagging. Warning garments worn at night shall be of reflectorized material.

20. FLAMMABLE AND COMBUSTIBLE LIQUIDS

A. Only approved containers and portable tanks shall be used for storage and handling of flammable and combustible liquids.

B. No more than 25 gallons of flammable or combustible liquid shall be stored in a room outside of an approved storage cabinet. No more than 60 gallons of flammable or 120 gallons of combustible liquids shall be stored in any one- storage cabinet. No more than three storage cabinets may be located in a single storage area.

C. Inside storage rooms for flammable and combustible liquids shall be of fire-resistive construction, have self-closing fire doors at all openings, 4-inch sill or depressed floors, a ventilation system that provides at least six air changes within the room per hour and electrical wiring and equipment approved for Class 1, Division 1 locations.

D. Storage in containers outside buildings shall not exceed 1,100 gallons in any one pile or area. The storage area shall be graded to divert possible spills away from buildings or other exposures, or shall be surrounded by a curb or dike. Storage areas shall be located at least 20 feet from any building and shall be free from weeds, debris and other combustible materials.

E. Flammable liquids shall be kept in closed containers when not actually in use.

F. Conspicuous and legible signs prohibiting smoking shall be posted in service and refueling areas.

21. FLOOR OPENINGS, OPEN SIDES, HATCHWAYS, ETC.

A. Floor openings shall be guarded by a standard railing and toeboards or covers. In general, the railing shall be provided on all exposed sides, except at entrances to stairways. Temporary floor openings shall have standard railings.

B. Every open-sided floor or platform, 6 feet or more above adjacent floor or ground level, shall be guarded by a standard railing, or the equivalent, on all open sides except where there is entrance to a ramp, stairway, or fixed ladder.

C. Floor holes, into which persons can accidentally walk, shall be covered with a floor hole cover or standard strength and construction or be guarded by a standard railing with toeboard on all exposed sides.

D. Runways 4 feet or more shall have standard railings on all open sides, except runways more than 18 inches wide used exclusively for special purposes may have the railings on one side omitted where operating conditions necessitate.

22. GASES, VAPORS, FUMES, DUSTS AND MISTS

A. Exposure to toxic gases, vapors, fumes, dusts and mists at a concentration above those specified in the "Threshold Limit Values of Airborne Contaminants" of the ACGIH, shall be avoided.

B. Administrative or engineering controls must be implemented whenever feasible to comply with TLV's.

C. When engineering and administrative controls are not feasible to achieve full compliance, protective equipment or other protective measures shall be used to keep the exposure of employees to air contaminants within the limits prescribed. Any equipment and technical measures used for this purpose must first be approved for each particular use by a competent industrial hygienist or other technically qualified person.

23. GENERAL DUTY CLAUSE

A. Hazardous conditions or practices not covered in an OSHA standard may be covered under Section 5 (a) (1) of the Occupational Safety and Health Act of 1970 which states, "Each employee shall furnish to each of his 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".

24. GENERAL REQUIREMENTS

A. The contractor shall initiate and maintain such programs as may be necessary to provide for frequent and regular inspections of the job site, materials and equipment.
B. The contractor shall instruct each employee in the recognition and avoidance of unsafe conditions and in the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury.
C. The contractor shall ensure that all employees are familiar with the requirements set forth in this standard.

25. HAND TOOLS – (OSHA PART 1926.300)

A. Contractors shall not issue or permit the use of unsafe hand tools.
B. Wrenches shall not be used when jaws are sprung to the point that slippage occurs. Impact tools shall be kept free of mushroomed heads. The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.
C. Electric power operated tools shall either be approved double insulated or be properly grounded.
D. When power-operated tools are designed to accommodate guards, they shall be equipped with such guards when in use.

26. HEAD PROTECTION – (OSHA PART 1926.100)

A. Head protective equipment (helmets) shall be worn in areas where there is a possible danger of head injuries from impact, flying or falling objects, or electrical shock and burns.
B. Helmets for protection against impact and penetration of falling and flying objects shall meet the requirements of ANSI Z89.1.
C. Helmets for protection against electrical shock and burns shall meet the requirements of ANSI Z89.2.

27. HEARING PROTECTION – (OSHA PART 1910.95)

A. Feasible engineering or administrative controls shall be utilized to protect employees against sound levels in excess of those shown in Table D-1.
B. When engineering or administrative controls fail to reduce sound levels within the limits of Table D-1, ear protective devices shall be provided and used.
C. Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

D. In all cases, where the sound levels exceed the values shown in Table D-1 of the Safety and Health Standards, a continuing, effective hearing conservation program shall be administered.

E. Table D-1, Permissible Noise Exposures.

Table D-1, Permissible Noise Exposures

	SOUND LEVEL dBA
DURATION PER DAY HOURS:	**SLOW RESPONSE**
8	90
6	92
4	95
3	97
2	100
1-1/2	102
1	105
1/2	110
1/4 or less	115

F. Plain cotton is not an acceptable protective device.

28. HEATING DEVICES, TEMPORARY

A. Fresh air shall be supplied in sufficient quantities to maintain the health and safety of workers.

B. Solid fuel salamanders are prohibited in buildings and on scaffolds.

C. When heaters are used, they shall rest on suitable heat insulating material or at least 1-inch concrete, or equivalent and be located at least 10 feet from any combustible materials.

29. HOISTS, MATERIAL AND PERSONEL

A. The contractor shall comply with the manufacturer's specifications and limitations.

B. Rated load capacities, recommended operating speeds and special hazard warnings or instructions shall be posted on cars and platforms.

C. Material hoisting entrances of material hoists shall be protected by substantial full width gates or bars.

D. Hoisting doors or gates of personnel hoists shall be not less than 6 feet 6 inches high and be protected with mechanical locks, which cannot be operated from the landing side and are accessible only to persons on the car.

E. Solid overhead protective coverings shall be provided on the top of the hoist cage or platform.

30. HOOKS

(See Wire Ropes, Chains, Hooks, etc., #62).

31. HOUSEKEEPING

A. Form and scrap lumber with protruding nails and other debris, shall be kept clear from all work areas.
B. Combustible scrap and debris shall be removed at regular intervals.
C. Containers shall be provided for collection and separation of all refuse. Covers shall be provided on containers used for flammable or harmful substances.
D. Wastes shall be disposed of at frequent intervals.
E. All external industrial waste bins shall be guarded by a fence no less than seven feet in height. The length of the fence as such to prevent entry by staff or patients.
F. All tools shall be secured while in patient areas to prevent use by patients.

32. ILLUMINATION

A. Construction areas, ramps, runways, corridors, offices, shops and storage areas shall be lighted to not less than the minimum illumination intensities listed in Table D-2 while any work is in progress.
B. Table D-2: Minimum Illumination Intensities in Foot-Candles.

Table D-2, Minimum Illumination Intensities in Foot-Candles

Foot Candles:	**Area or Operation:**
5	General construction area lighting.
3	General construction areas, concrete placement, excavation and waste areas, access ways, active storage areas, loading platforms, refueling and field maintenance areas.
5	Indoors; warehouses, corridors, hallways and exit ways.
5	Tunnels, shafts and general underground work areas (Exception: minimum of 10 foot-candles is required at tunnel and shaft heading during drilling, mucking and scaling. Bureau of Mines approved cap lights shall be acceptable for use in tunnel heading).
10	General construction plant and shops (e.g. bath plants, screening plants, mechanical and electrical equipment rooms, carpenter shops, rigging lofts and active storerooms, mess halls, indoor toilets, and workrooms).
30	First aid stations, infirmaries and offices.

33. JOINTERS

A. Each hand-fed planer and jointer with a horizontal head shall be equipped with a cylindrical cutting head. The opening in the table shall be kept as small as possible.
B. Each hand-fed jointer with a horizontal cutting head shall have an automatic guard which will cover the section of the head on the working side of the fence or gage.
C. A jointer guard shall automatically adjust itself to cover the unused portion of the head and shall remain in contact with the material at all times.
D. Each hand-fed jointer with horizontal cutting head shall have a guard, which will cover the section of the head back of the gage or fence.

34. LADDERS

A. The use of ladders with broken or missing rungs or steps, broken or split side rails, or with other faulty or defective construction is prohibited. When ladders with such defects are discovered, they shall immediately be withdrawn from service.
B. Portable ladders shall be placed on a substantial base at a 4-1 pitch, have clear access at top and bottom, extend a minimum of 36 inches above the landing and be secured against movement while in use.
C. Portable metal ladders shall not be used for electrical work or where they may contact electrical conductors.
D. Job-made ladders shall be constructed for this intended use. Cleats shall be inset into side rails 1/2 inch, or filler blocks used. Cleats shall be uniformly spaced, 12 inches, top-to-top.

35. LASERS

A. Only qualified and trained employees shall be assigned to install, adjust and operate laser equipment.
B. Employees shall wear proper eye protection where there is a potential exposure to laser light greater that 0.005 watts (5 milli-watts).
C. Beam shutters or caps shall be utilized, or the laser turned off, when laser transmission is not actually required. When the laser is left unattended for a substantial period of time, such as during lunch hour, overnight, or at change of shifts, the laser shall be turned off.
D. Employees shall not be exposed to light intensities above: Direct staring – 1 micro-watt per square centimeter; incidental observing – 1 milli-watt per square centimeter; diffused reflected light – 2-1/2 watts per square centimeter. Employees shall not be exposed to microwave power densities in excess of 10 milli-watts per square centimeter.

36. LIQUIFIED PETROLEUM GAS

A. Each system shall have containers, valves, connectors, manifold valve assemblies and regulators of an approved type.
B. All cylinders shall meet DOT specifications.
C. Every container and vaporizer shall be provided with one or more approved safety relief valves or devices.
D. Containers shall be placed on firm foundations and secured in an upright position.
E. Portable heaters shall be equipped with an approved automatic device to shut off the flow of gas in the event of flame failure.
F. Storage of LPG within buildings is prohibited.
G. Storage locations shall have at least one 20-B:C rated fire extinguisher.

37. MEDICAL SERVICES AND FIRST AID

A. The employer shall ensure the availability of medical personnel for advice and consultation on matters of occupational health.
B. When a medical facility is not reasonably accessible for the treatment of injured employees, a person trained to render first aid shall be available at the work site.

38. MOTOR VEHICLES AND MECHANIZED EQUIPMENT

A. All vehicles in use shall be checked at the beginning of each shift to assure that all parts, equipment and accessories that affect safe operation are in proper operating condition and free from defects. All defects shall be corrected before the vehicle is placed in service.
B. No contractor shall use any motor vehicle, earthmoving, or compacting equipment having an obstructed view to the rear unless:
    i. The vehicle has a reverse signal alarm distinguishable from the surrounding noise level, or
    ii. The vehicles backed up only when an observer signals that it is safe to do so.
C. Heavy machinery, equipment or parts thereof shall be substantially blocked to prevent falling or shifting before employees are permitted to work under or between them.

39. NOISE

(See hearing protection, #27).

40. PERSONAL PROTECTIVE EQUIPMENT

A. The contractor is responsible for requiring the wearing of appropriate personal protective equipment in all operations where there is an exposure to hazardous conditions or where the need is indicated for using such equipment to reduce the hazard to the employees.

B. Lifelines, safety belts and lanyards shall be used only for employee safeguarding.

41. POWDER-ACTUATED TOOLS

A. Only trained employees shall be allowed to operate powder-actuated tools.

B. All powder-actuated tools shall be tested daily using the manufacturers recommended procedure to insure all safety devices are in proper working condition. Any tool found not in proper working order shall be removed from service until repaired.

C. Tools shall not be loaded until immediately before use.

D. Ear and eye protection is required for use of powder-actuated tools.

42. POWER TRANSMISSION AND DISTRIBUTION

A. Existing conditions shall be determined before starting work by an investigation or a test.

B. Electric equipment and lines shall be considered energized until determined otherwise by testing or until grounding.

C. Operating voltage of equipment and lines shall be determined before working on or near energized parts.

D. Rubber protective equipment shall comply with the provisions of the ANSI series and shall be visually inspected before use.

43. POWER TRANSMISSION, MECHANICAL

A. Belts, gears, pulleys, sprockets, spindles, drums, flywheels, chains or other reciprocating, rotating, or moving parts of equipment shall be guarded if such parts are exposed to contact by employees or otherwise constitute a hazard.

B. Guarding shall meet the requirement of ANSI B15.1, “Safety Code for Mechanical Power Transmission Apparatus”.

44. RADIATION, IONIZING

A. Pertinent Provisions of the Atomic Energy Commission's Standards for Protection Against Radiation (10 CFR Part 20), relating to protection against occupational radiation exposure, shall apply.

B. Persons handling radioactive materials or x-rays shall be specially trained or licensed if required.

45. RAILINGS

A. A standard railing shall consist of top rail, intermediate rail and posts and have a vertical height of approximately 42 inches from upper surface of top rail to the floor, platform, etc.

B. The top rail of a railing shall be smooth-surfaced, with strength to withstand at least 200 pounds. The intermediate rail shall be approximately halfway between the top rail and floor.

C. A stair railing shall be of construction similar to a standard railing, but the vertical height shall be not more than 34 inches nor less than 30 inches from upper surface of top rail to surface of tread in line with face of riser at forward edge of tread.

D. (See toeboards, #58).

46. RESPIRATORY PROTECTION

A. In emergencies, or when feasible engineering or administrative controls are not effective in controlling toxic substances, appropriate respiratory protective equipment shall be provided by the employer and shall be used.

B. Respiratory protective devices shall be approved by the National Institute for Occupational Safety and Health (NIOSH) or acceptable to the U.S. Department of Labor for the specific containment to which the employee is exposed.

C. Respiratory protective devices shall be appropriate for the hazardous material involved and the extent and nature of the work performed.

D. Employees required to use respiratory protective devices shall be instructed in their use.

E. Respiratory protective equipment shall be inspected regularly and maintained in good condition.

47. ROLLOVER PROTECTIVE STRUCTURES (ROPS)

A. Rollover protective structures (ROPS) applies to the following types of materials handling equipment: To all rubber-tired, self-propelled scrapes, rubber-tired front-end loaders, rubber-tired dozers, wheel-type agricultural and industrial tractors, crawler-type loaders and

motor graders, with or without attachments that are used in construction work. This requirement does not apply to side-boom pipe-laying tractors.

B. Above equipment manufactured on or after 09/01/72 shall have ROPS.

C. Above equipment manufactured on or after 01/01/72 shall have ROPS by 04/01/73.

D. Above equipment manufactured between 07/01/71 and 12/31/71 shall have ROPS by 07/01/73.

E. Above equipment manufactured between 07/01/70 and 06/30/71 shall have ROPS by 1/1/74.

F. Above equipment manufactured between 07/01/69 and 06/30/70 shall have ROPS by 7/1/74.

G. Above equipment manufactured before 07/01/69 are not required to have ROPS as of this printing.

48. SAFETY NETS

A. Safety nets shall be provided when workplaces are more than 25 feet above the surface where the use of ladders, scaffolds platforms, temporary floors, safety lines, or safety belts are impractical.

B. Where nets are required, operations shall not be undertaken until the nets are in place and have been tested.

49. SAWS, BAND

A. All portions of band saw blades shall be enclosed or guarded, except for the working portion of the blade between the bottom of the guide rolls and the table.

B. Band saw wheels shall be fully encased.

50. SAWS, PORTABLE CIRCULAR

A. All portable, power-driven circular saws shall be equipped with guards above and below the base plate or shoe. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work and shall automatically return to the covering position when the blade is removed from the work.

B. (See #25 of this digest).

51. SAWS, RADIAL

A. Radial saws shall have an upper guard, which completely encloses the upper half of the saw blade. The sides of the lower exposed portion of the blade shall be guarded by a device that

will automatically adjust to the thickness of and remain in contact with the material being cut.

B. Radial saws used for rippling shall have non-kickback fingers or dogs.

C. Radial saws shall be installed so that the cutting head will return to the starting position when released by the operator.

52. SAWS, SWING OR SLIDING CUT-OFF

A. All swing or sliding cut-off saws shall be provided with a hood that will completely enclose the upper half of the saw.

B. Limit stops shall be provided to prevent swing or sliding type cut-off saws from extending beyond the front or back edges of the table.

C. Each swing or sliding cut-off saw shall be provided with an effective device to return the saw automatically to the back of the table when released at any point of its travel.

D. Inverted sawing of sliding cut-off saws shall be provided with a hood that will cover the part of the saw that protrudes above the top of the table or material being cut.

53. SAWS, TABLE

A. Circular table saws shall have a hood over the portion of the saw above the table, so mounted that the hood will automatically adjust itself to the thickness of and remain in contact with the material being cut.

B. Circular table saws shall have a spreader aligned with the blade, spaced no more than 1/2 inch behind the largest blade mounted in the saw. This provision does not apply when grooving, dado-ing, or rabbiting.

C. Circular table saws used for ripping shall have non-kickback finger or dogs.

D. Feed rolls and blades of self-feed circular saws shall be protected by a hood or guard to prevent the hands of the operator from coming in contact with the in-running rolls at any time.

54. SCAFFOLDS – (OSHA PART 1926.451)

A. Scaffolds shall be erected on sound, rigid footing, capable of carrying the maximum intended load.

B. Scaffolds and their components shall be capable of supporting, without failure, at least 4 times the maximum intended load.

C. Guardrails and toeboards shall be installed on all open sides and ends of platforms more than 10 feet above the ground or floor, except needle beam scaffolds and floats. Scaffolds 4 feet to 10 feet in height, having a minimum dimension in either direction of less than 45 inches, shall have standard guardrails installed on all open sides and ends of the platform.

D. There shall be a screen with maximum 1/2 inch openings between the toeboard and the mid-rail, where persons are required to work or pass under the scaffold.

E. All planking shall be scaffold grade as recognized by grading rules for the species of wood used. The maximum permissible spans for 2x10 inches or wider planks are shown in the following table:

MATERIAL

	FULL THICKNESS UNDRESSED LUMBER			NORMAL THICKNESS LUMBER	
Working load (p.s.f.).....	25	50	75	25	50
Permissible span (ft.).....	10	8	6	8	6

The maximum permissible span for 1-1/4 x 9 inch or wider plank of full thickness is 4 feet, with medium loading of 50 p.s.f.

F. Scaffold planking shall be overlapped a minimum of 12 inches or secured from movement.

G. Scaffold planks shall extend over their end supports not less than 6 inches, nor more than 12 inches.

H. All scaffolding and accessories having any defective parts shall be immediately replaced or repaired.

55. STAIRS

A. Every flight of stairs having four or more risers shall be equipped with standard stair railings or standard handrails.

B. On all structures 20 feet or over in height, stairways, ladders, or ramps shall be provided.

C. Rise height and tread width shall be uniform throughout any flight of stairs.

D. Hollow pan-type stairs shall be filled to the level of the nosing with solid material.

56. STEEL ERECTION

A. Permanent floors shall be installed so there is not more than eight stories between the erection floor and the upper-most permanent floor, except when structural integrity is maintained by the design.

B. During skeleton steel erection, a tightly planked temporary floor shall be maintained within two stories or 30 feet, whichever is less - that portion of each tier of beams on which any work is being performed.

C. During skeleton steel erection, where the requirements of the preceding paragraph cannot be met and where scaffolds are not used, safety nets shall be installed and maintained whenever the potential fall distance exceeds two stories or 25 feet.

D. A safety railing of 1/2 inch wire rope or equivalent shall be installed around the perimeter of all temporarily floored buildings, approximately 42 inches high, during structural steel assembly

E. When placing structural members, the load line shall not be released until the member is secured by at least two bolts, or the equivalent, at each connection drawn up wrench tight.

57. STORAGE

A. All materials stored in tiers shall be secured to prevent sliding, falling or collapse.

B. Aisles and passageways shall be kept clean and in good repair.

C. Storage of materials shall not obstruct exits.

D. Materials shall be stored with due regard to their fire characteristics.

E. Weeds and grass in outside storage areas shall be kept under control.

F. Storage of flammable liquids inside buildings is not permitted.

G. Storage of flammable liquids inside buildings is not permitted.

H. All tools must be locked up when not in the immediate care of your employees, and at the end of each workday.

58. TOEBOARDS – (Floor and Wall Openings and Stairways).

A. Railings protecting floor openings, platforms, scaffolds, etc., shall be equipped with toeboards wherever, beneath the open side, persons can pass, there is moving machinery, or there is equipment with which falling material could cause a hazard.

B. A standard toeboard shall be at least 4 inches in height and may be of any substantial material either solid or open, with openings not to exceed 1 inch in greatest dimension.

59. TOILETS

A. Toilets shall be provided according to the following; 20 or fewer persons – one facility; 20 or more persons – one toilet seat and one urinal per 40 persons; 200 or more persons – one toilet seat and one urinal per 50 workers.

B. This requirement does not apply to mobile crews having transportation readily available to nearby toilet facilities.

60. WASHING FACILITIES

A. The employer shall provide adequate washing facilities for employees engaged in the application of harmful substances or in operations where harmful contaminants are used.

B. Washing facilities shall be in close proximity to the work-site and shall be equipped to remove all harmful substances.

61. WELDING, CUTTING AND HEATING

A. Whenever any welding, burning, heating or cutting operation is to be performed, the contractor must secure a permit from the Fire Department. Requests for permits should be made by the contractor's authorized supervisory representative. Upon completion of the above operation, the permit shall be returned to the Fire Department.

B. Contractors shall instruct employees in the safe use of welding equipment.

C. Proper precautions (i.e., isolating welding and cutting, removing fire hazards from the vicinity, providing a fire watch, etc.) for fire prevention shall be taken in areas where welding or other "Hot Work" is being done. No welding, cutting or heating shall be done where the application of flammable paints, or the presence of other flammable paints, or the presence of other flammable compounds, or heavy dust concentrations creates a fire hazard.

D. Welding and cutting operations shall be shielded by non-combustible or flame-proof shields.

E. When electrode holders are to be left unattended, the electrodes shall be removed and the holders shall be placed or protected so that they cannot make electrical contact with employees or conducting objects.

F. All arc welding and cutting cables shall be completely insulated. There shall be no repairs or splices within 10 feet of the electrode holder, except where splices are insulated equal to the cable. Defective cable shall be repaired or replaced.

G. Fuel gas and oxygen hose shall be easily distinguishable and shall not be interchangeable. Hoses shall be inspected at the beginning of each shift and shall be repaired or replaced if defective

H. Mechanical ventilation or airline respirators shall be provided when welding, cutting or heating:
   i. Zinc-, lead-, cadmium-, mercury-, or beryllium-bearing, based or coated materials in enclosed spaces.
   ii. Stainless steel with inert equipment.
   iii. In confined spaces.
   iv. Where an unusual condition can cause an unsafe accumulation of contaminants.

I. Proper eye protective equipment to prevent exposure of personnel shall be provided (See Item #17c).

J. (See Compressed Gas Cylinders, #8).

This Medical Center is equipped with sophisticated Smoke Detectors directly tied into our Fire Alarm System and the on-site Fire Department.

These on-site units can be activated very easily with any products of combustion and therefore can create an actual ALARM condition. Prior notification of all heat and smoke producing operations will enable us to shut down that particular FIRE ZONE until the contractors are finished with their work.

62. WIRE ROPES, CHAINS, ROPES

A. Wire ropes, chains, ropes and other rigging equipment shall be inspected prior to use and as necessary to assure their safety. Defective gear shall be removed from service.

B. Job or shop hooks and links, or makeshift fasteners, formed from bolts, rods, etc., or other such attachments.

C. When U-bolts are used for eye splices, the U-bolt shall be applied so that the “U” section is in contact with the dead end of the rope.

63. WOODWORKING MACHINERY

A. All fixed power-driven woodworking tools shall be provided with a disconnect switch that can be either locked or tagged in the off position.

B. All woodworking tools and machinery shall meet applicable requirements of ANSI 01.1, “Safety Code for Woodworking Machinery”.

64. SMOKING POLICY

A. Smoking nor vaping is <u>not</u> permitted on the campus.

65. DISCOVERY OF FIRE

A. In the event a fire is discovered the following steps will be carried out:

i. **RESCUE:** Remove anyone in danger from the area.

ii. **ALARM:** activate the alarm.

iii. **CONTAIN:** Close doors prevent spread

iv. **EXTINGUISH:** Only if it is safe.

B. All contractor personnel will familiarize themselves with all fire equipment and fire alarm pull box station locations.

C. Dial 4911 and give location and type of fire.

D. Evacuation plans are posted on each floor in the corridors for your use in the event of a fire. When the fire alarm sounds in the building where workmen are located, they must evacuate the building and wait for all clear signal from Fire Department.

E. In the event of a fire **DO NOT** use elevators - use stairwell exits for means of escape.

66. CARDIAC ARREST

In the event a contractor's employee suffers an apparent heart attack a fellow employee should go to the nearest phone, dial "911" report that there is a possible cardiac arrest and give the exact location.

67. CONFINED SPACE ENTRY – (OSHA 1910.146)

Any work which requires entry into a confined space, such as manholes, shall conform to OSHA 1910.146, Confined Space Entry, and this Medical Center's Confined Space Entry Program. Contractor will be informed of the hazards associated with such spaces by the VA Engineering Staff, and will supply the VA with evidence of an appropriate confined space program and worker training in Confined Space Entry. Contractor will supply all equipment necessary to work safely in a confined space. Contractor will coordinate entry into such spaces with VA Safety Staff.

68. LOCK OUT/TAG OUT HAZARDOUS ENERGY – (OSHA 1910.147)

A. All equipment shall be locked out or tagged out to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Do not attempt to operate any switch, valve, or other energy isolating device where it is locked (or tagged) out.

B. If more than one crew, department, etc is involved, one authorized employee will coordinate the lock/out tag/out to ensure that all control measures are applied and there is continuing of protection for the group.
C. Lock out tags must list name of person performing work and contact information.

ATTACHMENT #2

DEPARTMENT OF VETERANS AFFAIRS (VA)

CUTTING AND WELDING PERMIT

Date: _____ Bldg. #: _____ Floor/Area: _____

Welder's Name: _____ Shop/Company: _____

Nature of Job:
_____
_____
_____
_____

Is Fire Watch required: _____ Fire Watcher: _____

The location has been examined. The proper precautions have been taken. Permission is granted for this work. (See precautions on reverse side)

Permit Expires: _____

SIGNED: _____
(Authorizing Fire Dept. Official)

Time Work Started: _____

Time Work Finished: _____

FINAL CHECK-UP

The work area was inspected 30 minutes after the work was completed and was found fire safe. The work area is to include all adjacent areas (including floors above and below), to which any fire or heat might spread.

SIGNED: _____
(Supervisor of Fire Watcher)

ATTACHMENT #3

ATTENTION

BEFORE APPROVING ANY CUTTING OR WELDING PERMIT, THE FIRE DEPARTMENT REPRESENTATIVE OR HIS APPOINTEE SHALL INSPECT THE WORK AREA AND CONFIRM THAT THE PROPER PRECAUTIONS HAVE BEEN TAKEN.

NECESSARY PRECAUTIONS

	YES	NO
1. Cutting and welding equipment is in good condition.		
2. Sprinklers are in service.		
3. Floor swept clean within 35 ft of combustibles.		
4. Combustible floors wet down or shielded within 35 ft.		
5. All combustible or flammable liquids removed from the area.		
6. All wall and floor openings are covered and protected from open flame.		
7. Enclosed equipment cleaned of all combustibles.		
8. Enclosed containers purged of flammable vapors.		
9. Proper fire extinguisher provided in the work area.		
10. Personnel instructed in proper operation of fire alarm.		
11. Was fire watch provided		
12. Proper utilities secured such as LP gas, oxygen, natural gas, etc.?		
13. Proper fire alarm equipment secured?		
14. Final checkup completed 30 minutes after work was completed?		
I HAVE BEEN INFORMED AND UNDERSTAND THE PROVISIONS OF THIS PERMIT. I UNDERSTAND THIS PERMIT CAN BE REVOKED AT ANY TIME IF I, OR MY EMPLOYEES, FAIL TO FOLLOW THE PRECAUTIONS OUTLINED ABOVE.		

SIGNED: _____
(Supervisor of Fire Watcher)