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PROCEDURES FOR FIRESAFETY DURING
DEMOLITION OF A BUILDING

1. SCOPE. Buildings undergoing demolition shall be in accordance with the directives herein.
2. PERMITS. Permits are required to conduct asbestos-removal (See handout).
3. APPROVALS. Approval of the safety precautions required for buildings being demolished is required by the Authority Having Jurisdiction (AHJ) in addition to any other approvals required for specific operations or processes associated with such demolition.

EXCEPTION: Buildings designated as Group R, Division 3 or Group U do not require approval of safety precautions.
4. FIRESAFETY DURING DEMOLITION. Demolition of buildings shall be in accordance with the directives herein.
 - 4.1 ACCESS ROADS. Fire department access roads shall be established and maintained.
 - 4.1.1 Required access. Fire apparatus access roads shall be provided for every facility, building or portion of a building when any portion of the facility or any portion of an exterior wall of the first story of the building is located more than 150 feet (45 720 mm) from fire apparatus access as measured by an approved route around the exterior of the building or facility. More than one fire apparatus road shall be provided when it is determined by the AHJ that access by a single road might be impaired by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.
 - 4.1.2 Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm) and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm).
 - 4.1.3 Surface. Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be provided with a surface so as to provide all-weather driving capabilities.

- 4.1.4 Turning radius. The turning radius of a fire apparatus access road shall have a minimum inside radius of 30 feet and a minimum outside radius of 50 feet.
- 4.1.5 Dead ends. Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) in length shall be provided with approved provisions for the turning around of fire apparatus.
- 4.1.6 Grade. The gradient for a fire apparatus access road shall not exceed a maximum of 15%.

EXCEPTION: When approved, temporary access roads of a width, vertical clearance and surface which provide access for fire department apparatus are allowed to be used until permanent roads are installed.

- 4.2 WATER SUPPLY. Water mains and hydrants shall be installed and operational.
 - 4.2.1 Required Water Supply for Fire Protection. An approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings or portions of buildings are being demolished within the jurisdiction. When any portion of the facility or building protected is in excess of 150 feet (45 720 mm) from a water supply on a public street, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided.
 - 4.2.2 Protection, marking and obstruction of hydrants. Fire hydrants subject to possible vehicular damage shall be adequately protected, marked, and kept unobstructed.
 - 4.2.2.1 Protection from vehicles. Guard posts or other approved means shall be provided to protect storage tanks and connected piping, valves and fittings; dispensing areas; and use areas subject to vehicular damage. When guard posts are installed, the posts shall be:
 - 4.2.2.1.1 Constructed of steel not less than 4 inches (101.6 mm) in diameter and concrete filled,
 - 4.2.2.1.2 Spaced not more than 4 feet (1219 mm) between posts on center,
 - 4.2.2.1.3 Set not less than 3 feet (914 mm) deep in a concrete footing of not less than a 15-inch (381 mm) diameter,
 - 4.2.2.1.4 Set with the top of the posts not less than 3 feet (914 mm) above ground, and
 - 4.2.2.1.5 Located not less than 5 feet (1524 mm) from the tank.
 - 4.2.2.2 Fire-protection equipment and fire hydrants. Fire- protection equipment and fire hydrants shall be clearly identified in an approved manner to prevent obstruction

by parking and other obstructions. Hydrant locations shall be identified by the installation of reflective markers.

4.2.2.3 Obstruction and Impairment of Fire Hydrants and Fire-protection Equipment. Posts, fences, vehicles, growth, trash, storage and other materials or things shall not be placed or kept near fire hydrants, fire department inlet connections or fire-protection system control valves in a manner that would prevent such equipment or fire hydrants from being immediately discernible. The fire department shall not be deterred or hindered from gaining immediate access to fire-protection equipment or hydrants.

4.2.2.4 Clear space around hydrants. A 3-foot (914.4 mm) clear space shall be maintained around the circumference of fire hydrants except as otherwise required or approved

EXCEPTION: When approved, a temporary water supply for fire protection is allowed to be used until permanent fire-protection systems are installed.

4.3 FIRE PROTECTION. During the demolition fire protection shall be provided in accordance with the directives herein.

4.3.1 Fire-protection Plan. A fire-protection plan shall be established.

4.3.2 Automatic Sprinkler System. When a building to be demolished contains a sprinkler system, such system shall not be rendered inoperative without approval of the AHJ.

4.3.3 Fire Hose. Suitable and sufficient fire hose shall be maintained at the demolition site. Such hose shall be connected to an approved source of water and shall not impede fire department use of hydrants. The amount of fire hose shall be such that all portions of the site may be reached within 30 feet of the fire hose nozzle. All fire hose shall be equipped with a variable stream/fog nozzle.

4.3.4 Fire extinguishers. Fire extinguishers shall be provided. The number of extinguishers shall be determined such that an extinguisher is always within a maximum 75 foot travel distance and the type of extinguisher(s) shall be suitable for the type of fire associated with the hazards present.

4.3.5 Fire Watch. For demolition, which is hazardous in nature, qualified personnel shall be provided to serve as an on-site fire watch. The sole duty of fire- watch personnel shall be to watch for the occurrence of fire.

4.3.6 Emergency Telephone. Telephone facilities shall be provided at the construction site for the purpose of emergency notification of the fire department. The street address of the construction site shall be posted adjacent to the telephone together with the fire department telephone number.

4.3.7 Fire-resistive Assemblies and Construction. Fire-resistive assemblies and construction shall be maintained if not part of the demolition. Permits are required through the Building Department to repair, replace or restore required fire-resistive construction.

4.3.7.1 Asbestos removal. Operations involving removal of asbestos or asbestos-containing materials from buildings shall be in accordance with the directives herein.

4.3.7.1.1 Exception: This does not apply to the removal of asbestos from:

4.3.7.1.1.1 Pumps, valves, gaskets and similar equipment.

4.3.7.1.1.2 Pipes, ducts, girders or beams, which have a length less than 21 linear feet (6400 mm).

4.3.7.1.1.3 Wall or ceiling panels which have an area of less than 10 square feet (0.93 m²) or a dimension of less than 10 linear feet (3048 mm).

4.3.7.1.1.4 Floor tiles when the duration of work can be completed in less than four hours.

4.3.7.1.1.5 Group R, Division 3 Occupancies.

4.3.7.1.2 **PERMITS.** Permits are required to conduct asbestos-removal.

4.3.7.1.3 **APPROVALS.** Approval of the safety precautions required for operations involving removal of asbestos or asbestos-containing materials from buildings being altered or demolished is required in addition to any other approvals for specific operations or processes associated with such alteration or demolition.

4.3.7.1.4 **Notification.** The Authority Having Jurisdiction (AHJ) shall be notified 24 hours prior to the commencement and closure of asbestos-removal operations. The permit applicant shall notify the AHJ when asbestos abatement involves the removal of materials which were used as a feature of the building's fire resistance.

4.3.7.1.5 **Plastic Film.** Plastic film, which is installed on building elements, shall be flame resistant.

4.3.7.1.6 **Signs.** Approved signs shall be posted at the entrance, exit and exit-access door, decontamination areas and waste-disposal areas for asbestos-removal operations. The signs shall state that asbestos is being removed from the area, that asbestos is a suspected carcinogen and that proper respiratory protection is

- required. Signs shall have a reflective surface and lettering shall be a minimum of 2 inches (51 mm) high.
- 4.4 ACCESS. Access to the demolition area for the purpose of firefighting shall be provided. Construction material shall not block access to buildings, hydrants or fire appliances.
- 4.4.1 Means of Egress. Required means of egress components shall be maintained in areas not to be demolished.
EXCEPTION: Approved temporary means of egress system or facilities.
- 4.4.2 Floor Openings. Floor openings shall be surrounded by guardrails or shall have covers which are automatic closing or maintained in a closed position at all times.
- 4.4.3 Combustible Debris. Combustible debris shall not be accumulated within the site. Combustible debris, rubbish and waste material shall be removed as often as practical. Combustible debris, waste material and trash shall not be burned.
- 4.5 CONTROL OF SOURCES OF IGNITION. Ignition sources shall be in accordance with the directives herein.
- 4.5.1 Clearance from Ignition Sources. Clearance between ignition sources, such as light fixtures, heaters and flame-producing devices, and combustible storage shall be maintained in an approved manner.
- 4.5.2 Heating Devices. Temporary heating devices shall be of an approved type, located away from combustible materials, and attended and maintained by competent personnel.
- 4.5.3 Smoking. Smoking shall be prohibited, except in those areas approved. When required by the chief, a suitable number and type of NO SMOKING signs shall be posted.
- 4.5.4 Cutting and welding. Cutting and welding operations shall be in accordance with the handout for "HOT WORK PROCEDURES".
- 4.5.5 Flame-producing Equipment. The use of torches or flame-producing devices shall be in accordance with the handout for "HOT WORK PROCEDURES".
- 4.5.6 Open-flame Devices. Open-flame devices and other sources of ignition shall not be located in areas where flammable materials are being used.
- 4.5.7 Motor Equipment. Internal-combustion-powered construction equipment shall be used in accordance with the following:
- 4.5.7.1 Equipment shall be located so that exhausts do not discharge against combustible material,
- 4.5.7.2 When possible, exhausts shall be piped to the outside of the building,
- 4.5.7.3 Equipment shall not be refueled while in operation, and

- 4.5.7.4 Fuel for equipment shall be stored in an approved area outside of the building.
- 4.6 FLAMMABLE LIQUIDS. The storage, use and handling of flammable liquids shall be in accordance with the directives herein. Ventilation shall be provided for operations utilizing the application of materials containing flammable solvents.
- 4.6.1 Unauthorized Discharges. Flammable and combustible liquids and petroleum waste products shall not be discharged or released on sidewalks, streets, highways, drainage canals, ditches, storm drains, sewers, flood-control channels, lakes, rivers, tidal waterways or the ground. Unauthorized discharge or release of such products shall be immediately reported. EXCEPTIONS:
- 4.6.1.1 Materials and products intended for use in weed abatement, pest control, erosion control, paving and similar applications when applied in accordance with the manufacturer's instructions, label directions and nationally recognized standards.
- 4.6.1.2 Materials released in accordance with federal, state or local government regulations or permits of the jurisdictional air quality management board with a national pollutant discharge elimination system permit, with waste discharge requirements established by the jurisdictional water quality control board, or with local sewer pretreatment requirements for publicly owned treatment works.
- 4.6.2 Maintenance and operating practices. Maintenance and operating practices shall be in accordance with established procedures which will tend to control leakage and unauthorized discharge of flammable or combustible liquids. Spills shall be cleaned up promptly.
- 4.6.3 Leaking containers. Where flammable or combustible liquids are stored in containers, provisions shall be made and maintained for the detection of leakage. Leaking containers shall be taken to a safe location in an area not accessible to the public and the contents transferred to a liquid-tight container.
- 4.6.4 Site assessment. In the event of a spill, leak or discharge from a tank system, a site assessment shall be completed. Such site assessments shall be conducted to ascertain potential fire hazards and shall be completed and submitted to the fire department within a time period established by the AHJ not to exceed 60 days.
- 4.6.5 Waste control. Waste liquids shall be kept in a sump, tank or receptacle approved for this purpose.
- 4.6.6 Spill Control and Secondary Containment. When required, rooms, buildings or areas used for storage, dispensing, use, mixing, or handling of flammable and combustible liquids shall be provided with spill control and secondary containment.

4.6.7 Labeling and Signs. Warning signs for the purpose of identifying the hazards of storing or using flammable liquids are required.

4.6.7.1 Style. Warning signs shall be of a durable material with red lettering on a white background and shall read DANGER-FLAMMABLE-KEEP FIRE AND FLAME AWAY. Tanks shall bear the additional marking KEEP 50 FEET (15.2 METERS) FROM BUILDINGS. Letters shall not be less than 3 inches (76.2 mm) in height and 1/2 inch (12.7 mm) in stroke.

4.6.7.2 Location. Signs shall be posted in locations as required by the chief. Piping containing liquids shall be identified in accordance with nationally recognized standards.

4.6.7.3 Warning labels. Warning labels shall be in accordance with the Federal Hazardous Substance Labeling Act and applicable state laws. Flammable liquids, and flammable and liquid compounds and mixtures manufactured, packaged or offered for sale shall be conspicuously marked or labeled in legible type which is in contrast by typography, layout or color with any other printed matter on the label.

EXCEPTION: Foods, drugs or cosmetics subject to the Federal Food, Drug and Cosmetic Act.

4.6.8 Storage and Dispensing of Flammable and Combustible Liquids on Construction Sites.

Temporary storage and dispensing of Class I and II liquids for private use on farms and rural areas and at construction sites, earth-moving projects, gravel pits or borrow pits shall be in accordance with the directives herein.

4.6.8.1 Containers for storage and use. Metal containers used for storage of Class I or II liquids shall be in accordance with DOT requirements or shall be of an approved design. Discharge devices shall be of a type that does not develop an internal pressure on the container. Pumping devices or approved self-closing faucets used for dispensing liquids shall not leak and shall be well maintained. Individual containers shall not be interconnected and shall be kept closed when not in use.

4.6.8.2 Capacity. The capacity of temporary aboveground tanks containing Class I or II liquids shall not exceed 10,000 gallons (37 854 L).

4.6.8.3 Fill opening security. Fill openings shall be equipped with a locking closure device. Fill openings shall be separate from vent openings.

4.6.8.4 Vents. Tanks shall be provided with a method of normal and emergency venting. Emergency vents shall be arranged to discharge in a manner which prevents localized overheating or

flame impingement on any part of the tank in the event vapors from such vents are ignited.

4.6.8.5 Location. Tanks containing Class I or II liquids shall be kept outside of and at least 50 feet (15 240 mm) from buildings and combustible storage. Additional distance shall be provided when necessary to ensure that vehicles, equipment and containers being filled directly from such tanks will not be less than 50 feet (15 240 mm) from structures, or other combustible storage.

4.6.8.6 Type of tank. Tanks shall be provided with top openings only or shall be elevated for gravity discharge. Tanks shall be of single-compartment design.

4.6.8.6.1 Tanks with top openings only. Tanks with top openings only shall be mounted as follows:

4.6.8.6.1.1 On well-constructed metal legs connected to shoes or runners designed so that the tank is stabilized and the entire tank and its supports can be moved as a unit, or

4.6.8.6.1.2 For stationary tanks, on a stable base of timbers or blocks approximately 6 inches (152.4 mm) in height which prevents the tank from contacting the ground. Tanks with top openings only shall be equipped with a tightly and permanently attached, approved pumping device having an approved hose of sufficient length for filling vehicles, equipment or containers to be served from the tank. Either the pump or the hose shall be equipped with a padlock to its hanger to prevent tampering. An effective antisiphoning device shall be included in the pump discharge unless a self-closing nozzle is provided. Siphons or internal pressure discharge devices shall not be used.

4.6.8.6.2 Tanks for gravity discharge. Tanks with a connection in the bottom or the end for gravity dispensing liquids shall be mounted and equipped as follows:

4.6.8.6.2.1 Supports to elevate the tank for gravity discharge shall be of adequate strength and designed to provide stability, and

4.6.8.6.2.2 Bottom or end openings for gravity discharge shall be equipped with a valve located adjacent to the tank shell which will close automatically in the event of fire through the operation of an effective heat-actuated releasing device. If this valve cannot be operated manually, a second manually operated valve shall supplement it. The gravity discharge outlet shall be provided with an approved hose equipped with a self-closing valve at the discharge end of a type that can be padlocked to its hanger.

4.6.8.7 Dispensing from tank vehicles. When approved, liquids used as fuels may be transferred from tank vehicles into the tanks of motor vehicles or special equipment, provided:

4.6.8.7.1 The tank vehicle's specific function is that of supplying fuel to motor vehicle fuel tanks,

4.6.8.7.2 The dispensing line does not exceed 50 feet (15 240 mm) in length,

4.6.8.7.3 The dispensing nozzle is an approved type,

4.6.8.7.4 The dispensing hose is properly placed on the approved reel or in a compartment provided before the tank vehicle is moved,

4.6.8.7.5 Signs prohibiting smoking or open flame within 25 feet (7620 mm) of a tank vehicle or the point of refueling are prominently posted on the tank vehicle,

4.6.8.7.6 Electrical devices and wiring in areas where fuel dispensing is conducted are in accordance with the Electrical Code,

4.6.8.7.7 Vapor-recovery systems are provided,

4.6.8.7.8 Tank vehicle dispensing equipment is operated only by designated personnel who are trained to handle and dispense motor fuels, and

4.6.8.7.9 Provisions are made for controlling and mitigating unauthorized discharges.

4.6.8.7.10 Dispensing from tanks shall be conducted at least 50 feet (15 240 mm) from structures or combustible storage.

4.7 TEMPORARY ELECTRICAL WIRING. Temporary electrical wiring shall be in accordance with the directives herein.

- 4.7.1 During Demolition. Temporary wiring for electrical power and lighting installations is allowed during periods of construction, remodeling, repair or demolition of buildings, structures, equipment or similar activities.
- 4.7.2 Temporary wiring. When temporary wiring is attached to a structure, it shall comply with this code or the Electrical Code.
- 4.7.3 Extension cords and flexible cords. Extension cords shall not be used as a substitute for permanent wiring.
 - 4.7.3.1 Use with Portable Appliances. The use of extension cords shall be in accordance with the appliance manufacturer's recommendations.
 - 4.7.3.2 Applications. Extension cords shall be used only with portable appliances.
 - 4.7.3.3 Power supply. Extension cords shall be plugged directly into an approved receptacle, power tap or multiplug adapter and shall, except for approved multiplug extension cords, serve only one portable appliance.
 - 4.7.3.4 multiplug adapters. Multiplug adapters, such as multiplug extension cords, cube adapters, strip plugs and other devices, which do not comply with this code or the Electrical Code, shall not be used.
 - 4.7.3.5 Ampacity. The ampacity of the extension cords shall not be less than the rated capacity of the portable appliance supplied by the cord.
 - 4.7.3.6 Maintenance. The extension cords shall be maintained in good condition without splices, deterioration or damage.
 - 4.7.3.7 Grounding. Extension cords shall be grounded when servicing grounded portable appliances.
 - 4.7.3.8 Installation. Extension cords and flexible cords shall not be affixed to structures; extend through walls, ceilings, and floors, under doors or floor coverings; or be subject to environmental or physical damage.

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