PETERSON CONTRACTORS, INC.

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SAFETY POLICIES

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PETERSON CONTRACTORS, INC.

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Safety Program Overview and Responsibilities

CORPORATE SAFETY PHILOSOPHY

Peterson Contractors, Incorporated considers its employees to be their most valuable resource and believes in maintaining a high-quality safety program for the protection of all. Peterson believes that though engineering, preventative maintenance, training, and motivation of employees, accidents can be minimized or prevented entirely.

All projects must be performed in a manner that minimizes injuries and accidents. Safety is the primary consideration in all activities. Unsafe acts or attitudes will not be tolerated and are a basis for disciplinary action. Each employee must know and follow all basic and job specific safety rules. Employees are required to wear all required safety equipment to avoid taking unnecessary chances.

Prevention of accidents, both to personnel and to property is the responsibility of all. Senior management will assure site supervisors are instructed and are trained to carry out safe work practices and procedures. Supervisors are accountable for their work site, assignment of personnel and proper use of materials and equipment.

SAFETY AUDITS

Safety audits at the work site will be performed by qualified persons on a regular basis. Audits are a method of detecting unsafe conditions, employee's work behavior, lack of supervision, and deficient training. Each audit will be done to ensure compliance with OSHA sections 29 CFR 1926 Construction and 29 CFR 1910 General Industry. Additionally, audits at quarry locations will ensure compliance with the appropriate sections of 30 CFR Mine Safety and Health Act.

EMPLOYEE TRAINING AND EDUCATION

Employee training and education are essential to ensure projects are carried out in the safest and most efficient manner. Keeping supervisory personnel updated and refreshed on proper safety techniques and policies ensures downloading of essential information to field workers. Peterson Contractors, Inc. has always been a teaching organization. All employees are expected to participate in Safety training and to teach others who are less educated, both in Safety practice and general field experience. Safety education and training requirements include, but are not limited to:

1. **Top management will provide support to the Safety Officer and ensure a commitment to safety training from the top down.**
2. **Safety and Loss Control Officer will maintain appropriate certifications to allow them to instruct OSHA 10- and 30-Hour classes for Construction, MSHA, Flagging, Drug Free Workplace, Trenching and Excavating, Fall Protection, and all other pertinent needs.**
3. **Field Superintendents and Supervisors will participate in annual training sessions as required by the Company. Training will include how to properly observe employees.**

behavior, documentation requirements, and feed back to the employee. Each supervisor and superintendent will be certified in first aid and CPR. Supervisors and superintendents will insure that employee have been properly trained and are qualified to perform the tasks to which they are assigned. Additionally, each supervisor or superintendent will always keep a supply of Accident/Incident Report form packets on hand.

4. **Senior field employees will attend and participate in annual training as specified by the Safety Directors and Field Supervisors. Additionally, senior field personnel are expected to provide ongoing training and set the example for lesser-experienced field personnel. Senior personnel are expected to be mentors, to teach, and to watch over less experienced personnel.**
5. **All newly hired personnel will participate in a "New Hire Orientation" program prior to beginning work in the field.**

PERSONNEL RESPONSIBILITIES:

SAFETY/LOSS CONTROL DIRECTOR is responsible for the following:

- **Ensure proper levels of training are maintained for all levels of employees, including themselves.**
- **Maintain training records.**
- **Review all accident reports. Direct immediate care of injured workers. Perform site investigation when accidents occur.**
- **Manage work comp cases to ensure workers receive appropriate care, return to light duty and then full duty in a timely manner.**
- **Keep top management informed.**
- **Maintain and issue safety equipment as required.**
- **Maintain all appropriate records and accident reports.**
- **Perform site inspections on a regular basis. Issue reports to site managers and top management.**
- **Analyze statistical data to highlight problem areas and perform a trend analysis and make appropriate recommendations for solutions. Trend Analysis data will be provided to owners, managers, and supervisors for corrective action.**
- **Chairs Safety Committee meetings.**

PROJECT MANAGER is responsible for:

- **Pre-bid safety considerations and anticipated safety costs.**
- **Specific requirements such as OSHA 10-hour or 24-hour HazMat training.**
- **Safety records of any sub-contractors being considered.**

FIELD SUPERINTENDENT is responsible for:

- **Overseeing projects in his designated area.**
- **Inspect job sites on a regular basis. Observe employees work habits, safety requirements, PPE, etc. The observation will be documented on the PCI Site Inspection form and will be discussed with the observed employee(s). Any feedback will be noted on the Site Inspection from. The form will be forwarded to the Safety Officer for trend analysis.**

- **Correct or request assistance in correcting deficiencies.**
- **Correctly filling out the inspection form, disciplinary forms, EEO forms, inspection forms and returning same to the Safety Officer for trend analysis.**

FIELD SUPERVISOR is responsible for:

- **Maintaining a proper job site that follows all PCI and regulatory agency requirements.**
- **Ensure that all employees under his direction follow proper procedures and requirements.**
- **Ensure that all sub-contractors on site follow all proper procedures and regulatory agency requirements.**

FIELD EMPLOYEE is responsible to follow all PCI policies and programs as directed by the Field Supervisor.

Incident / Accident Investigation and Reporting

Employee health and safety is a primary concern Peterson Contractors, Inc. The Company is committed to prevention of occupational accidents and illness. We pursue this commitment through engineering, ergonomic applications, safety committees, medical department training, and safety awareness. **It is MANDATORY that all employees, as a condition of their employment observe, follow, and comply with ALL OSHA and Company rules and regulations. Failure to comply with safety rules and regulations will result in disciplinary action, up to and including discharge for the first offense.**

Injury and loss control. The efficiency of any department or crew can be measured by its ability to control unnecessary loss. An accident that results in personal injury, property damage, or equipment loss is a needless waste. It is essential that all employees know about and understand their responsibility to control these losses and take the necessary actions to do so. If you observe an unsafe condition or work practice, you must report it to your supervisor. If the supervisor does not respond to your concern, contact the Safety Officer at the home office in Reinbeck, Iowa. Any employee can stop operations deemed to be unsafe at any time without fear of retaliation. All accidents/injuries must be documented on the Peterson Contractors, Inc. Accident Investigation Form. The form will include pages for witness statements. Witnesses must be interviewed, and their statements recorded.

Supervisors are responsible for investigation of all accidents, near misses, and injuries. Supervisors will receive annual training on their responsibilities and investigation techniques. Proper equipment including but to cameras, recorders, and dosimeters will be available as needed during the investigation. Evidence, if any will be preserved for evaluation by technical personnel. The accident investigation will be appropriate for the severity of the incident. In all cases resulting in property damage or personal injury the safety officer at the home office in Reinbeck will be contacted within 24 hours. More severe injuries require contact within 8 hours.

During your orientation, and with your supervisor, you will learn about safety rules and regulations, housekeeping rules, job hazard recognition, and personal protective equipment and requirements. You will receive a copy of the rules and will sign a statement that you have received them and agree to abide by them. This statement will be part of your personnel file. The rules are also posted in the work area. Violations of the rules are subject to disciplinary action, up to and including, termination, even for the first offense.

Reporting injuries and Incidents. All injuries that occur on Company job sites, even if they seem insignificant, are to be **immediately** reported to your supervisor and/or the Company Safety Officer. Supervisors are responsible for reporting accidents to the home office and to any host facility based on the host's time requirements, but will not exceed 24 hours, unless by regulatory requirement the time frame is less, such as 8 hours in cases of fatalities. The home office in Reinbeck, Iowa will make any reports to governmental or other regulatory agencies. Failure to report an injury in a timely manner will be considered a refusal to carry out the reasonable request of management and, as such, is a violation which may result in your claim being denied and in disciplinary action. Employees who are injured or cause injury, no matter how minor, through their own neglect, carelessness, and disregard of safety are subject to disciplinary action, up to and including discharge for the violation of Company policies and Safety Program.

For an injury or illness to be compensable under the workers compensation system, the injury or illness must be directly related to compensated work at Peterson Contractors, Inc. Injuries, illnesses, aches, pains, strokes, heart attacks, cancers, respiratory problems, etc. that do not have a definite source / incident directly related to your work at Peterson Contractors, Inc. are not compensable and are not covered by the workers compensation system.

Upon completion of the accident investigation, all documents, photos, videos, and other documentation will be evaluated by appropriate personnel. Cause of the incident/accident will be determined, and corrective action shall be implemented to prevent re -occurrence of any repeat or similar incidents. This information shall be conveyed and used for supervisor as well as general employee population training.

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Aerial Lifts

All employees who will use aerial lifts shall be trained by certified third party trainers, using the appropriate materials for the specific manufacturer of the lift and general safety requirements. This shall include, but is not limited to:

- **No modification shall be made to any lift without the manufacturer's specific written approval.**
- **The lift shall be inspected prior to each use at the beginning of each shift. This will include, but not limited to controls, brakes, lift mechanisms, hydraulic and electrical systems, lights, and back up alarms.**
- **Only trained and authorized operators are allowed to operate lifts.**
- **Load limits shall not be exceeded. Lifts shall not be used as cranes to lift structural into position.**
- **Clearance from electrical lines shall be a minimum of 10' and operators will follow the OSHA standards for additional clearances.**
- **Spotters shall be used if necessary or when working around electrical lines.**
- **Operators or other employees will stand of the floor of the basket and shall not climb or sit on the handrails.**
- **All occupants of the lift shall wear fall protection in the form of a full body harness and will be secured to the basket by a lanyard not to exceed 6' in length. The lanyard shall be attached to the basket at the manufacturers tie off point.**

Asbestos Awareness Program

1.0 Purpose

This program covers Ardent policy related to asbestos, either discovered or suspected in the workplace. Ardent recognizes asbestos as a very serious health hazard. The intent of this policy is to provide Ardent employees with general knowledge and guidelines enabling employees to protect themselves and others from unnecessary asbestos exposure. It is Ardent policy not to engage in asbestos abatement activities. Upon discovery or suspicion of Asbestos being present on a jobsite, Ardent employees are to stop the work and immediately inform their supervisor.

2.0 Scope

This Asbestos Awareness Program and Policy is intended for support of and use by company operations both in business units and project operations. This program is hazard recognition and education focused and does not imply that any training associated with this program certifies or qualifies any Ardent employee to handle asbestos or carry-out operations associated with the encapsulation, removal, transport, or disposal of materials containing asbestos.

3.0 Regulatory Reference

This Asbestos Awareness Program is primarily intended to satisfy the following regulatory requirements:

29 CFR 1910.1001, 29 CFR 1926.1101, Cal/OSHA T8 CCR1529

4.1 Policy

4.2 Stop the Work Immediately - Upon discovery or suspicion of asbestos being present on a jobsite, PCI employees are to stop the work immediately and inform their supervisor.

4.3 Do Not Handle Asbestos Products - It is PCI policy that employees shall not knowingly handle products or materials containing asbestos.

4.4 Do Not Engage in Abatement Activities - It is PCI policy that employees shall not engage in asbestos abatement activities.

4.5 Do Not Dispose of Asbestos - It is PCI policy that employees shall not participate in the disposal of products or materials containing asbestos.

4.6 Contact a Licensed Asbestos Professional - It is PCI policy to contact a licensed Asbestos Abatement Contractor and/or a laboratory certified to perform asbestos analysis of samples upon discovery or suspicion of asbestos materials being present.

4.7 Avoid Exposure – It is PCI policy to train employees with general knowledge and guidelines enabling them to protect themselves and others from unnecessary asbestos exposure.

5.1 Responsibilities

5.2 Management – PCI Management is responsible for the following:

Ensure that the HSE Management System includes an asbestos policy and that the policy is reviewed annually and revised as necessary.

Provide asbestos hazard awareness training for all employees.

Provide leadership and support for employees in communicating their responsibility to stop the work when asbestos hazard is discovered or suspected.

Provide resources to address and correct any asbestos related events that arise.

5.3 Supervision – PCI Supervision is responsible for the following:

Understand and enforce the PCI Asbestos Policy
Implement site controls isolating employees from asbestos hazards when asbestos is discovered or suspected on a jobsite.
Immediately inform management of any asbestos discovery or suspicion on a jobsite.
Provide immediate on-the-spot training for all employees on the jobsite regarding PCI Asbestos Policy and guidelines enabling employees to protect themselves and others from unnecessary asbestos exposure.
Contact a licensed Asbestos Abatement Contractor or a laboratory certified to perform asbestos analysis of samples.

5.4 Employees – PCI Employees are responsible for the following:
Upon discovery or suspicion of Asbestos being present on a jobsite, Ardent employees are to stop the work and immediately inform their supervisor.
Protect themselves and others from unnecessary asbestos exposure.
Conduct operations in accordance with Ardent provided asbestos hazard awareness training.
Immediately report to a supervisor any changes, deficiency or breaches in site controls established to isolate employees from asbestos hazards on a jobsite.

6.1 Hazard Recognition & Control
Asbestos is a naturally occurring mineral fiber widely used in construction because of its special properties. Highly resistant to destruction by heat or chemicals, its fibers have been used extensively in insulation materials. Asbestos can be found in vinyl tiles, roof shingles, furnace insulation, pipe insulation, wall and ceiling joint compounds and textured coatings, with most applications occurring between 1945 and 1977. Widespread use in consumer products was banned in 1977.

6.2 Exposure & Health – Exposure to asbestos occurs when asbestos fibers are released into the air and inhaled. Many believe there is no definite safe exposure level. Even short-term exposure to asbestos can be harmful. Exposure to asbestos may cause several types of serious diseases including, asbestoses, lung cancer, mesothelioma, and contribute to other cancers.

6.3 Hazard Recognition – With the exception of product labels identifying asbestos content, laboratory testing is the only reliable method of confirming the presence of asbestos. Employees will be better served with knowledge of the types of products likely to contain asbestos. Asbestos containing materials generally fall into two categories which may be described as follows:

Friable Asbestos Material is a term used to describe any asbestos-containing material that when dry, can be easily crumbled or pulverized to powder by hand. Some common examples of friable asbestos are acoustic ceilings and tiles, many types of plasters, wallboard, joint compound or "mud" and thermal insulation for water heaters and pipes
Non-Friable Asbestos Material contain a binder or hardening agent such as cement, asphalt or vinyl and cannot be easily crumbled. Examples are asphalt roofing shingles, vinyl asbestos floor tiles and transit siding made with cement. The danger with this type of material is that it can pose the same hazard as friable asbestos during remodeling, repairs, or other construction where the material is subject to cutting, sanding, or grinding.

Listed below are some of the more common locations or products that may contain asbestos:

6.3.1 **Corrugated Sheets** - Asbestos corrugated sheets used as a siding material on some industrial buildings and fencing. This wave shaped material appears whitish to grayish in color.
6.3.2 **Transit Conduit and Pipe** – This product is a cement pipe material used in various underground conduit installations and appears whitish to grayish in color.
6.3.3 **Asbestos Insulated Wire** – Asbestos insulated wire generally has a fibrous appearance and may have designations AF, A, AA, AIA.

6.3.4 **Asbestos Insulated Cable** – Asbestos insulated cable generally has a fibrous appearance to either the outer jacket and/or inner conductor insulation and may have designations AVA, AVB, or AVL.
6.3.5 **Pipe Insulation** - Any piping used for hot or chilled services is likely to be insulated. Segmented blocks formed to the pipe diameter; asbestos blankets and asbestos paper tape were all used on piping systems installed between 1920 and 1972. Asbestos insulation may also be found on furnace ducts and boilers. If broken or exposed to ware, these insulations should be tested. Encapsulating these installations is often the best approach for limiting exposure.
6.3.6 **Vinyl Floor Tiles and Sheeting** – Added for strength it is also present in the backing on some vinyl sheet flooring and adhesives use to place flooring. While mostly bound in compounds asbestos fibers can be released if the surface is sanded or cut.
6.3.7 **Patch Compounds and Textured Paints** – Some wall and ceiling joint compounds and textured paints sold before 1978 contained asbestos fibers. If in good condition, they are best left alone. Sanding or cutting these surfaces should be avoided.
6.3.8 **Ceilings** – Many buildings built or remodeled between 1945 and 1978 may contain asbestos material. These finishes were sprayed or troweled onto the ceiling or walls. If these surfaces are crumbly or damaged, testing should be performed to determine if they contain asbestos.
6.3.9 **Stove Insulation** – Cement sheets, millboard and paper products containing asbestos were often used in homes with wood-burning stoves to shield the floor and walls. Cement sheets are less likely to release fibers but any of these products exposed to ware should be tested.
6.3.10 **Furnace Insulation** - Oil, coal and wood burning furnaces found in some older homes may contain asbestos in the insulation. If insulation is in good condition, it is best left alone. If broken or exposed to ware, it should be tested.

6.3 Control – Education, isolation and avoidance will be the primary controls used by Ardent to protect employees and enable employees to protect themselves and others.

7.1 General Guidelines for Asbestos Events
It is Ardent policy that employees shall not knowingly handle products or materials containing asbestos.
7.2 Do Not Handle Asbestos Materials
7.2.1 Ardent employees are to stop the work and immediately inform their supervisor.
7.2.2 Do not disturb any material suspected to contain asbestos.
7.2.3 Obey all warning signs or labels and do not disturb any asbestos containing material.
7.2.4 Seal off the work area as reasonably possible. Be cautious not to track asbestos dust into other areas.
7.2.5 Do not dust sweep or vacuum particles suspected to contain asbestos.
7.2.6 If you suspect you have handled materials containing asbestos, wash-up immediately. Work clothes should be isolated in a plastic bag and washed separately from other laundry.

7.2 Multiple Contractor Jobsites
If PCI employees become exposed to asbestos due to the inadequate containment of work by other contractors, all Ardent employees will be removed from the area until the containment issue is resolved and the results of an initial exposure assessment pursuant to Section 7.3 indicate that the area is safe for work.

7.3 Exposure
Air monitoring of the breathing zones will be used to ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter of air as an eight (8) hour time-weighted average (TWA) and 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty (30) minutes,

7.4 Written Program
If exposure levels exceed the limits as indicated in Section 7.3, a written program will be developed and implemented to reduce employee exposure.

7.5 Regulated Areas
A regulated area is an area established to demarcate areas where Class I, II, and III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos, exceed or there is a reasonable possibility they may exceed the exposure limit as indicated in Section 7.3.
7.5.1 Warning signs that demarcate the regulated area shall be provided and displayed at each location where a regulated area is required to be established. Signs shall be posted at such a distance from such a location that an employee may read the signs and take necessary protective steps before entering the area marked by the signs.
7.5.2 The warning signs required by this section shall bear the following information:

DANGER ASBESTOS CANCER AND LUNG DISEASE HAZARD AUTHORIZED PERSONNEL ONLY
7.5.3 In addition, where the use of respirators and protective clothing is required in the regulated area under this section, the warning signs shall include the following:

RESPIRATORS AND PROTECTION CLOTHING ARE REQUIRED IN THIS AREA
7.6 Engineering Controls

In the event PCI is requested to work in proximity to a regulated area, the supervisor shall request that the client provide engineering controls to reduce employee exposure.

7.6.1 Engineering Controls may include the following:
Vacuum cleaners equipped with HEPA filters to collect all debris and dust.
Wet methods, or wetting agents, during asbestos handling, mixing, removal, cutting, application, and cleanup.
Prompt clean-up and disposal of wastes and debris.

Personal Protective Equipment
If the Engineering Controls as indicated in Section 7.6 are not feasible, all Ardent employees will be provided with the following Personal Protective Equipment at no cost:

- NIOSH approved respirators
- Coveralls
- Gloves
- Head Coverings
- Foot Coverings (other than steel toed footwear)
- Face Shields
- Vented Goggles
- Additional PPE as required

7.7 Disposal

It is Ardent policy that employees **shall not** participate in the disposal of products or materials containing asbestos.

The following guidelines are provided for education and awareness purposes only!
7.7.1 It is the legal responsibility of the property or building owner to properly package, transport and dispose of the wastes without posing any unnecessary risk to the public.
7.7.2 Asbestos waste must be handled and transported in one of the following ways:

- In sealed non-returnable containers with double 6-mil thick plastic bag liners from which fibers can't escape. Waste should be whetted to prevent blowing of fibers if the containing is broken.
- In closed vehicles if waste is too bulky to enclose in sealed containers. Waste should be whetted to prevent blowing of fibers.

7.7.3 Hazardous wastes are to be transported in closed containers and packed in a manner to prevent containers from tipping, spilling, or breaking during transport.
7.7.4 Different hazardous waste materials are not to be mixed in the same container during transport.
7.7.5 Caution labels are required on containers and must be conspicuous legible lettering that spells the following warning or equivalent:

CAUTION! Contains asbestos fibers, avoid creating dust, breathing asbestos dust may cause serious bodily harm.

Regulations regarding disposal of asbestos material may vary from state to state. Contact your local health department or fire department hazardous material unit for guidance in the handling and packaging of asbestos materials.

8.1 Training
Ardent will provide asbestos hazard awareness training for all employees.

8.2 Training Content - Training will cover the following topics:
8.2.1 Asbestos Hazard Awareness Training
PCI Asbestos Policy
Responsibilities
Hazard Recognition & Control

8.2.2 All written training material will be available to all affected employees as well as the Assistant Secretary of Labor for Occupational Safety and Health and the director of the National Institute for Occupational Safety and Health.

8.2 Personnel Training –PCI personnel shall receive the following training:
8.2.1 All employees shall receive Asbestos Hazard Awareness training.
8.3 Training Frequency - Training and re-training frequency shall be as follows:
8.3.1 Initial awareness training shall take place in the first 180 days of employment and/or when employees mobilize to jobsites with known asbestos hazards. Asbestos awareness training shall be refreshed semi-annually as part of the Toolbox Safety Meeting Program, Hazard Communication agenda.

9.1 Reporting and Record-keeping
9.2 Reports – All asbestos related events shall be reported.
9.2.1 **Incident Report** - All asbestos discovery events shall be record as Incidents on an Ardent Incident Report.
9.2.2 **Near Miss Reports** - Failures in containment, control methods, isolation, etc., not resulting in employee exposure shall be record as near miss events on an Ardent Near Miss Report.
9.2 Control & Retention – Records associated with this program shall be handled in the following manner. Incident/Accident shall be handled per the Incident Reporting and Record Keeping Program. Records shall be retained for a minimum of the employee's duration of employment plus 30 years.

Benzene

Air quality standards.

a. Whenever air monitoring indicates the presence of 0.3 ppm or more of benzene, a test shall be conducted in the affected work areas, at least at the beginning and midpoint of each shift, until the concentration of benzene has been less than 0.3 ppm for 3 consecutive days.

b. Whenever benzene is detected in an amount exceeding 0.5 ppm, a continuous sampling and indicating benzene monitor shall be used to monitor the affected work areas.

c. Employees shall be informed and evacuated when a concentration of 1.0 ppm benzene is exceeded.

d. The continuous sampling and indicating benzene monitor shall be designed, installed, and maintained to provide a visual and aural alarm when the benzene concentration reaches 1.0 ppm to signal those additional measures might be necessary to maintain benzene exposure below the PEL.

e. When the competent person determines, based on air monitoring results or other information, that air contaminants may be present in sufficient quantities to be dangerous to life, the employer shall:

(1) Prominently post a notice at all entrances to the work area to inform all entrants of the hazardous condition, and

(2) Ensure that the necessary precautions are taken.

f. Whenever 5% or more of the lower explosive limit for methane or other flammable gases is detected in any work area or in the air return, steps shall be taken to increase ventilation air volume or otherwise control the gas concentration, unless operations are conducted in accordance with the potentially gassy or gassy operation requirements. Such additional ventilation controls may be discontinued when gas concentrations are reduced below 5% of the lower explosive limit.

g. Whenever 10% or more of the lower explosive limit for methane or other flammable gases is detected in the vicinity of welding, cutting, or other hot work, such work shall be suspended until the concentration of such flammable gas is reduced to less than 10% of the lower explosive limit.

h. Whenever 20% or more of the lower explosive limit for methane or other flammable gases is detected in any work area or in the return:

(1) All employees, except those necessary to eliminate the hazard, shall be immediately withdrawn to a safe location; and

(2) Electrical power, except for acceptable pumping and ventilation equipment, shall be cut off to the area endangered by the flammable gas until the concentration of such gas is reduced to less than 20% of the lower explosive limit.

i. When ventilation has been reduced to the extent that hazardous levels of methane or other flammable gas may have accumulated, all affected areas shall be tested after ventilation has been restored and before any power, other than for acceptable equipment, is restored or work is resumed and shall determine whether the atmosphere is within flammable limits.

(3) Employees who are necessary to eliminate the hazard or need to continue to work in the contaminated area shall don appropriate PPE including, but not limited to appropriate respirators and protective clothing.

j. Whenever the ventilation system has been shut down with all employees out of the underground area, only competent persons authorized to test for air contaminants shall be allowed in the site until the ventilation has been restored and all affected areas have been tested for air contaminants and declared safe.

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Blood Borne Pathogens

All supervisors shall be trained on Blood Borne Pathogens included in the Red Cross First Aid and CPR prior to initial duties and annually thereafter. Employees have access to all training materials, including any generic or site-specific exposure control plan, at any time upon request. All sites will have hand washing facilities on hand whenever possible. If the provision of water-based hand washing facilities are not possible, antiseptic towelettes/solutions will be available. Training materials from Red Cross are copy write and include, but not limited to:

- **Exposures which include, but not limited to blood and other bodily fluids.**
- **Personal protective equipment, including, but not limited to protective gloves and 1-way breather masks will be provided to employees at no cost to the employee.**
- **Vaccination requirements and availability for Hepatitis B at no cost to the employee.**
- **Medical records will be kept for the duration of employment plus 30 years.**
- **Proper personal protection.**
- **Isolation of the contaminated area.**
- **Proper clean up procedures of equipment or surfaces after exposure/contamination per Red Cross.**
- **Proper hazardous material disposal.**

Employees are trained on exposures, universal precautions, and proper procedures during new hire orientation. The general employee population is trained/retrained each year during the annual training day. This training includes, but is not limited to:

- **Exposures which include, but not limited to blood and bodily fluids.**
- **Universal precautions to eliminate employee exposure.**
- **Reporting requirements as the result of personal exposure.**
- **Proper personal protection.**
- **Isolation of the contaminated area.**

Materials used for training shall be form the Red Cross First Aid and CPR training materials. Peterson Contractors has a minimum of two certified First Aid / CPR trainers on staff. Training records will be kept for the duration of the employee's employment plus 3 years.

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Geopier installation with casing or Pile driving

Required Equipment: Casing(s); Tracked excavator power unit equipped with HVR attachment

Principal Activity	Potential Hazards	Recommended or Required Controls
Loading/unloading unit from transport	Traffic	If unloading near traffic hazard, provide reflective barricades or personnel to direct traffic away or around loading/unloading activity.
	Ground personnel	ground personnel are present, provide barrier or personnel to direct persons on ground away from loading/unloading activity.
Tracking unit to/from point of delivery to operational site	Ground personnel Vehicular traffic	While tracking to or from sites, operators shall be vigilant for ground personnel and other vehicular traffic.
Transporting casings between work areas.	Casing falling on equipment or personnel	All casings shall be transported from storage areas to job areas in a horizontal position by forklifts or earth moving equipment equipped with forks. Casings shall not be transported from one work area to another by the tracked excavator with the casing suspended from the HVR or lifting/safety cables.
Installation of casings	Accidental release of casing from jaws of HVR	Lifting/safety cables shall be attached from the HVR to the casing before the casing is lifted from its resting position and shall remain attached unless the casing has less than 75% of the casing length exposed above the ground surface or is in horizontal storage. No ground personnel shall not enter an area within 50 feet from the pier insertion location, in any direction at any time during which the casing is suspended from the HVR or from the lifting/safety cables. Operators of other equipment may remain on station, but only if they remain in the cab of the unit they are operating and only if the unit they are operating is equipped with a ROPS. Ground personnel may enter the 50' danger zone only after the casing has more than 25% of the casing length inserted below the surface above the ground. The operator of the tracked excavator equipped with the HVR shall not carry the casing with the bottom end more than 6-8" above the ground except to avoid obstacles in its path.
	Stress on HVR pivots	Casings shall be lifted from and returned to the horizontal resting position with the lifting/safety cables to avoid stress upon the HVR unit pivots.

Casing Installation Continued

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
	Stress on HVR pivots Cont'd	Casings may be stored in a vertical position for short periods of time, such as between pier insertions only if the lifting/safety cables are attached, the HVR unit jaws are clamped securely to the top rim of the casing, and the bottom of the casing is sitting firmly on a reasonably flat surface.
	Rock bridging inside of casing	If rock becomes stuck/bridges inside of casing, HVR unit will lift casing an appropriate distance with the lifting/safety cables. HVR unit will then hold the casing securely from slipping with the lifting/safety cables while the hammer dislodges the stuck rock from the casing.

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Install Chance Anchors

Required Equipment: Excavator equipped with angle drill

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Move onto site - unload from trailer, track to start location.	Spectators	Ensure area is barricaded or personnel are instructed to keep spectators out of operational areas.
Install anchors	Swing radius of excavator boom and counterweights	Educate personnel in area to avoid swing radius.
	Rotating equipment	Ensure personnel do not have loose clothing that may be caught on rotating parts
	Pinch points connection	Ensure personnel are trained to keep hands away from connection point.
	Ingress and egress of skid loader	Ensure skid loader approaches and departs from specific direction. Rotate excavator boom in opposite direction to allow ingress from skid loader.
Move off site - load onto trailer.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.

Guide to Determining the Preventable of Collisions

The heart of accident analysis is the determination of preventable, not fault, based on the facts furnished in the police report, insurance company investigation report, motor carrier's recordable accident register, and from various other sources. These sources of information must be evaluated considering all available facts that are pertinent to the cause of the accident. Digging out these facts from the information on these reports can be difficult in practice due to the limited data contained in some reports. But the information can be obtained in many instances by a detailed analysis and reconstruction of the accident sequence.

Each accident must be judged individually. Certain types will generally fall in the non-preventable category, and certain others in the absence of extenuating circumstances and conditions, fall in the preventable category. The types of accidents listed below do not cover every accident that may occur, but they are intended to provide general guidance to assist in determining predictability.

Non-Preventable Accidents

Struck in Rear by Other Vehicle

Non-preventable if

- Driver's vehicle was legally and properly parked
- Driver was proceeding in his/her own lane of traffic at a safe and lawful speed keeping proper following distances
- Driver was stopped in traffic due to existing conditions, or was stopped in compliance with traffic sign or signal, or at the directions of a police officer or any other person legitimately controlling traffic
- Driver was in their proper lane waiting to make a turn.

Struck While Parked

Non-preventable if

- Driver was properly parked in a location where parking was permitted
- Vehicle was stopped, parked, or left standing in accordance with Sections 392.21 and 392.22 of the Federal Motor Carrier Safety Regulations.

Preventable Accidents

Accidents at Intersections

Preventable if

- Driver failed to control their speed so that he/she could stop within available sight distance
- Driver failed to check cross-traffic and wait for it to clear before entering intersection
- Driver pulled out from a side street into the lane of oncoming traffic
- Driver collided with a person, vehicle, or object while making right or left turn
- Driver collided with a vehicle making a turn in front of him/her.

Guide to Determining the Preventability of Collisions

Striking Other Vehicle in Rear

Preventable if

- Driver failed to maintain a safe following distance and have his/her vehicle under control
- Driver failed to keep track of traffic conditions and did not slow down
- Driver failed to ascertain whether the vehicle ahead was moving slowly, stopped, or slowing down for any reason
- Driver misjudged the rate of overtaking another vehicle
- Driver came to close before pulling out to pass
- Driver failed to wait for the vehicle ahead to move into the clear before starting up
- Driver failed to leave sufficient room for the passing vehicle to get safely back in line.

Sideswipe and Head-on Collisions

Preventable if

- Driver was not entirely in his/her proper lane of travel
- Driver did not pull to right and slow down or stop for a vehicle encroaching on his/her lane of travel when such action could have been taken without additional danger.

Struck in Rear by Other Vehicle

Preventable if

- Driver was passing slower traffic near an intersection and had to make a sudden stop
- Driver made a sudden stop to park, load, or unload
- Vehicle was improperly parked
- Driver rolled back into the vehicle behind them while starting on a grade.

Squeeze Plays and Shutouts

Preventable if

- Driver failed to yield the right-of-way when necessary to avoid accident.

Backing Accidents

Preventable if

- Driver backed up when backing could have been avoided by better planning of his/her route
- Driver backed into the traffic stream when such backing could have been avoided
- Driver failed to get out of the vehicle and check the proposed path of backward travel
- Driver depended solely on mirrors when it was practical to look back
- Driver failed to get out of vehicle and periodically recheck conditions when backing a long distance
- Driver failed to check behind the vehicle parked at the curb before attempting to leave a parking space
- Driver relied solely on a guide to help him/her back
- Driver backed from the blind side when he/she could have made a sight-side approach.

Guide to Determining the Preventability of Collisions

Accident Involving Rail Operated Vehicles

Preventable if

- Driver attempted to cross the tracks directly ahead of a train or streetcar
- Driver ran into the side of a train or streetcar
- Driver stopped, or parked on, or to close to, the tracks.

Accidents While Passing

Preventable if

- Driver passed where the view of road ahead was obstructed by a hill, curve, vegetation, traffic, adverse weather conditions, etc.
- Driver attempted to pass in the face of closely approaching traffic
- Driver failed to warn the driver of the vehicle being passed
- Driver failed to signal a change of lanes
- Driver pulled out in front of other traffic overtaking from rear
- Driver cut in to short while returning to the right lane.

Accidents While Being Passed

Preventable if

- Driver failed to stay in his/her own lane and hold their speed, or reduce it, to permit safe passing.

Accidents While Entering Traffic Stream

Preventable if

- Driver failed to signal when pulling out from a curb
- Driver failed to check traffic before pulling out from a curb
- Driver failed to look back to check traffic if he/she was in position where the mirrors did not show traffic conditions
- Driver attempted to pull out in a manner that forced other vehicle(s) to change speed or direction
- Driver failed to make a full stop before entering from a side street, alley, or driveway
- Driver failed to make a full stop before crossing a sidewalk
- Driver failed to yield the right of way to approaching traffic.

Pedestrian Accidents

Preventable if

- Driver did not reduce speed in an area of heavy pedestrian traffic
- Driver was not prepared to stop
- Driver failed to yield the right of way to pedestrians.

Guide to Determining the Preventability of Collisions

Mechanical Defects Accidents

Preventable if

- Defect was of a type that the driver should have detected in making a pre-trip or enroute inspection of the vehicle
- Defect was of a type that the driver should have detected it during the normal operation of the vehicle
- Defect was caused by the driver's abusive handling of the vehicle
- Defect was known to the driver, but was ignored
- Driver was instructed to operate the vehicle with a known defect.

All Types of Accidents

Preventable if

- Driver was not operating at a speed suitable for the existing conditions of the road, weather, and traffic
- Driver failed to control their speed so that he/she could stop within assured clear distance
- Driver misjudged the available clearance
- Driver failed to yield the right-of-way to avoid an accident
- Driver failed to accurately observe the existing conditions
- Driver was in violation of company operating rules or special instructions, the regulations of any Federal or State regulatory agency, or any applicable traffic laws or ordinances.

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Concrete

Required Equipment:

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Haul Truck	Backing up to form	Ensure spotters keep personnel and spectators away from backing zone
Concrete	PPE	Ensure personnel do not wade in concrete with leather boots Use rubber boots or rubber covers Personnel to wear safety glasses Personnel to wear protective gloves when handling concrete

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Breaking existing concrete for removal

Required Equipment: Concrete Breaker

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Move onto site - unload from trailer, track to start location.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.
Break concrete in specified areas	Flying debris	Keep spectators and other personnel away from breaker unit Wear safety glasses or full-face shield
	Excessive noise	Wear hearing protection devices
	Excessive Dust	Use water spray if excessive dust becomes a problem
	Ingress and egress of loader or trucks	Ensure loader and trucks approach and depart from specific direction.
Move off site - load onto trailer.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.

CONFINED SPACE EVALUATION AND ENTRY PROCEDURE **Peterson Contractors, Inc.**	Space Number: _____ Space Type: _____ Procedure Created: _____ Procedure Revised:

THIS IS A CONTROLLED DOCUMENT--DO NOT RETAIN
The current version is stored in the Project File.
Any other copy, either printed or electronic, is uncontrolled and may not be current.

TRAINED PERSONNEL ONLY

ONLY PEOPLE WHO HAVE BEEN TRAINED IN CONFINED SPACE WORK ARE ALLOWED IN THIS SPACE.

LIMITED ENTRY SCOPE

This entry procedure is intended for inspection and installation work only. Any work which would result in the introduction or creation of hazards not normally found in this space will require modification of the entry procedure. The modification must be specifically approved by Safety. Examples of work that require a modified entry procedure include but are not limited to use of chemical products not specifically listed by trade name on the entry procedure; use of radiation emitting equipment or radioactive materials; and use of equipment that would greatly increase heat levels.

Specifically modified entry procedures are also required if there is a hazard that is not addressed in the procedure, if a hazard cannot be controlled using the steps in the procedure, or if it is not possible to take all the preparatory steps listed in the procedure. Safety must approve all modified procedures.

HOT WORK

Confined space hot work includes any operations that involve open flames, hot surfaces, or that could generate sparks or static electricity. These operations include, but are not limited to, flame cutting or welding, air arc cutting, grinding, scaling, chipping, drilling, or buffing. A specific hot work permit is required for welding or cutting operations.

SPACE HAZARD EVALUATION	
Atmosphere Hazards	Possibility of foul atmosphere
Chemical Hazards	No unusual hazards expected
Physical Hazards	High and low voltage. Shock hazard - 13,800/4,160/120 volts.
Mechanical Hazards	No unusual hazards expected
Other Hazards	No unusual hazards expected

ACCEPTABLE CONDITIONS	
Combustible Gas	At or below 10% LeL
Oxygen Level	At or above 19.5% but not greater that 23.5%
Carbon Monoxide	At or below 400 ppm Instantaneous Level At or below 200 ppm Rolling 15-minute average At or below 35 ppm 8-Hour time-weighted average
Hydrogen Sulfide	At or below 45 ppm Instantaneous Level At or below 15 ppm Rolling 15-minute average At or below 10 ppm 8-Hour time-weighted average
Dust	No visible suspended dust

ENTRY EQUIPMENT	
Fall Protection/Retrieval	Rescue tripod and/or fork truck, winch with lifeline, rescue harness.
Ventilation	Blower and ducting
Communication	Voice acceptable unless out of range then use radios.
Atmospheric Testing	Passport (Combustible gas, oxygen, carbon monoxide, hydrogen sulfide)
Other	Personal Protective equipment including hard hat.

ENTRY PROCEDURE	
Pre-entry Steps	1. Do not enter if water in bottom of manhole is over 6" deep.
Lockout/Tagout and Space Isolation	1. Follow recommended lockout procedure. 2. Test to ensure ZES.
Initial Testing	1. Test atmosphere from top to bottom using PhD Lite or equivalent.
Fresh Air Purge	1. If contaminants are above allowable limits, set up ventilator to blow in air and purge manhole for 20 minutes. Ventilation recommended in all cases. 2. Purge space with fresh air, repeat steps in needed.
Pre-Entry Testing	1. Retest space before entering.
Complete and Post Permit	1. Entry Supervisor to check procedure, verify steps taken, and sign permit. 2. Post permit at entry to space.
Enter and Perform Work	1. Continuous monitoring required. 2. Continuous ventilation required.
Return Space to Operation	1. Exit space. 2. Remove entry/ventilation equipment. 3. Close access panels, manhole covers, etc. if applicable. 4. Remove lockout/tagout and space isolation procedures. 5. Remove and cancel permit. Forward permit to Safety. 6. Notify a supervisor that entry is complete.

EMERGENCY PROCEDURES	
Emergency Steps	1. Notify Security and/or Safety of nature of incident and location. 2. **DO NOT ENTER SPACE.** 3. Attempt to remove entrant with retrieval harness-careful not to cause additional injury 4. If unable to remove entrant provide fresh air. 5. Attempt to correct cause of incident, e.g., put out fires, stop flow of materials into space, disable machinery, etc. 6. Do not leave area until emergency response team has arrived.

END OF PROCEDURE

PETERSON CONTRACTORS, INC.
104 Blackhawk Street
Reinbeck, Iowa 50669
319-345-2713

CONSTRUCTION EXECUTION PLAN

DATE: _____

originator: Peterson Contractors, Inc. **Craft** Geopier installer

Description Of Activity Drilled shafts to specified depth, filled with specified aggregate and tamped at specified intervals to form Geopier foundation.

Location of Activity (Area) Laughlin Hospital, Greeneville, Tennessee

Scheduled Start Date _____ **Scheduled Completion Date** _____

Verified Interface/Interference with Base Plant Maintenance None

Description Of Potential Schedule Interference with Base Plant Maintenance (If Applicable)
None

Action Required/Planned to Manage Potential Schedule Interference
None

Will There Be Waste Generated Yes

How Will Waste Be Disposed? _____
Construction debris to be disposed of as agreed to with Brassfield & Gorrie

Originator _____

Construction Execution Plan

Daily Hours to Be Worked 7 am to 5:30 AM pm

Permits Required	Hot Work Permit	
	Cold Work Permit	
	Control Of Hazardous Energy System	
	Entry Permit	
	Opening & Blinding Permit	
Barricades	Yellow & Black Barricade	X
	Red & Black or Red Barricade	
	Yellow & Magenta Barricade	
	Protective Barricade	X
	Road Barricade	
	Lights Required	
Environment	Cartridge Respirator Required	
	Fresh Air Required	
	Dust Mask Required	Optional

Road Closures	Street Name	Durations
		To
		To
		To
		To

Equipment Requirements	Description	Number Required
	Track Hoe with mounted drill	1
	Rubber Tire Hoe	
	Cherry Picker (15 Ton)	
	Cranes	
	Other/Size	
	Ditch Witch	
	Welding Machine	
	Compactor- Hammer on Track Hoe	1
	Concrete Vibrators (Electric/Air)	
	Air Compressors	
	Generators	
	Fire Extinguishers	3
	Hoe Ram/Size 200lb &700lb	
	Jig lift 40' or 60'	
	Saw Machine for Masonry Wall	

Skid Loader 1

Originator Peterson Contractors, Inc.

Construction Execution Plan

Hazard Recognition	Personnel PPE	X
	Operating Equipment	X
	Vehicles/Pedestrians	X
	Roadways	
	Structures	
	Overhead Obstructions	X
	Underground Obstructions	
	Exposures (Flammable, Toxic, Utilities)	
	Electrical	X

Description of Hazard & Control Plan

1. PPE as follows: Fire Retardant Clothing, Safety Glasses, Hard Hat, Hearing Protection, Hand Protection, Mono Goggles, Face Shields, GFI Protection and Safety Harness
2. Vehicles/Pedestrians as follows: Local speed limits and requirements will be observed. Pedestrians will be given "right away" at all times.
3. Yellow Barricades will be placed around work site for caution.
4. Electrical: Contractor to provide construction power with GFI Boxes. Tools/Cords will be inspected and coded. All electrical tools and cords will be inspected prior, during and after usage.
5. Dust masks will be required during saw cutting. Wet saw will eliminate 96% of the dust.
6. Equipment specific per Job Safety Analysis
7. Hazardous materials program located in front of MSDS book.
8
9
10
11
12
13
14

From Your Past Experience, Furnish Description of Known Serious Incidents That Have Occurred or Could Occur While Performing This Work.

Where Could the Next Injury/Incident Happen?

1 Electrical shock from non GFI Grounded tools, damaged extension cords, damaged tools & Power tool cord. Inspection will be required prior, during and after usage. Assure grounding 2 Finger and Hand incidents from moving and installation of materials. Gloves will be required to remove debris and set door frame. Watch for pinch points.

3 Lifting Injury due to non-proper lifting techniques. Moving and placement of debris and door frame/door will be the area to review

4 Eye Injury could occur from not wearing the correct Eye Protection for the Job. Awareness for the use of eye protection during saw cutting and door placement will be in force.

5 Hearing Protection due to use of drill motors, saws, misc. electrical tools, and general site construction. General use of ear plugs will be in force at all times. Earmuffs may be

required during saw cutting.

6 Personnel who are unfamiliar with Geopier installations will keep out of work area. Danger of falling into drilled shafts exists. Additionally, danger exists to unfamiliar personnel from heavy equipment operations.

7

8

9

Originator:

Construction Execution Plan

Personnel

Craft Superintendent
BLDG:
CIVIL:
PIPE:
SIW:
ELECT:

General Foreman
BLDG:
CIVIL:
PIPE:
SIW:
ELECT:

Foreman — Peterson Contractors, Inc.
Total Craftsman/Helpers
Field Safety Coordinator

Contacts

Names	Company	Phone Number
S		

comments:

WORK SAFE!!!

Date

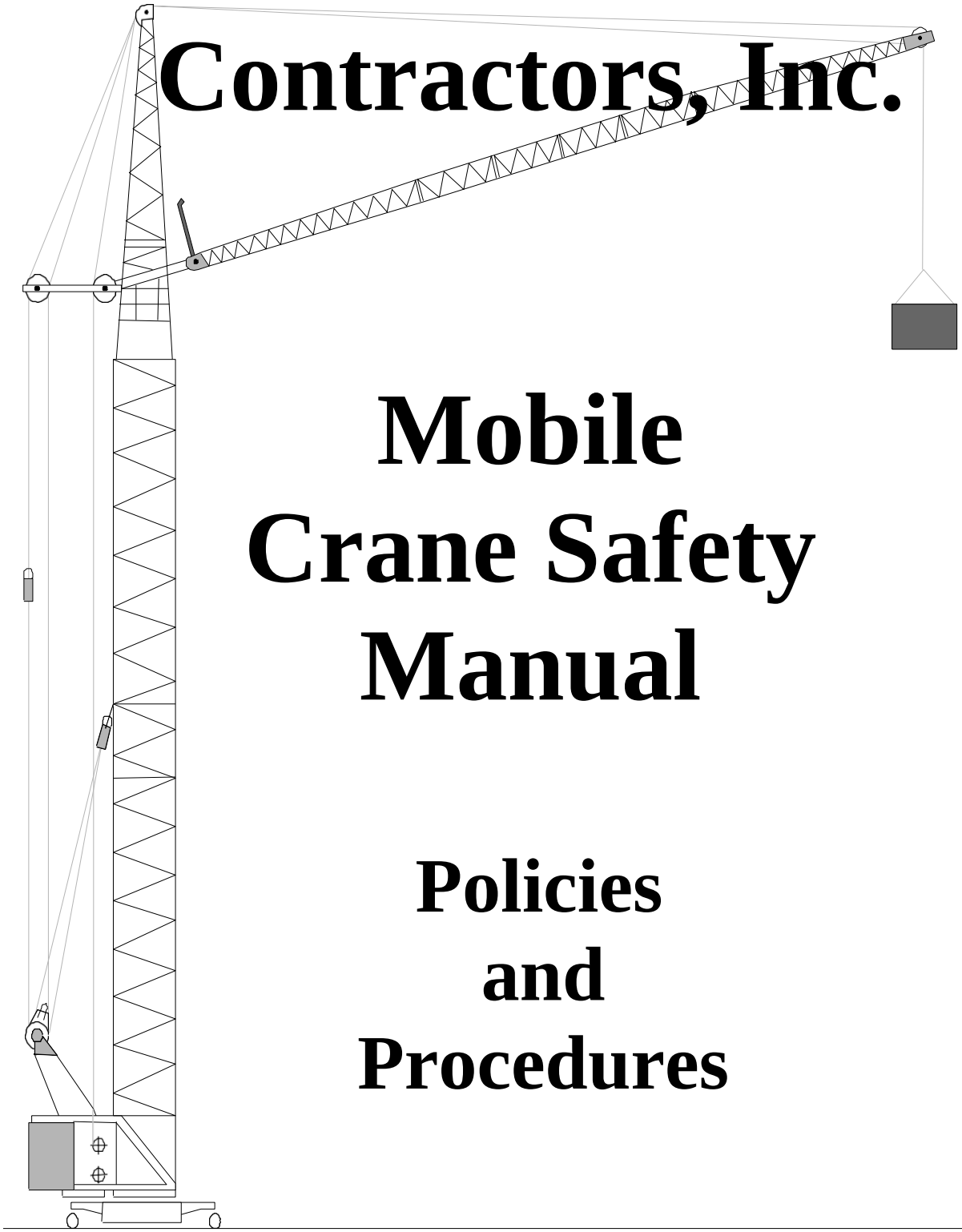
Date

_____ **Date** _____

_____ **Date** _____

Originator _____

Peterson Contractors, Inc.



Mobile Crane Safety Manual

Policies and Procedures

PETERSON CONTRACTORS, INC.

ADDRESS REPLY TO:
104 BLACKHAWK STREET
P.O. BOX A
REINBECK, IOWA 50669

HEAVY & HIGHWAY CONTRACTORS

PHONE: (319) 345-2713

FAX: (319) 345-2658

Cranes

All Peterson Contractors, Inc. crane operators are NCCCO certified. All riggers and hand signal personnel are trained to the revised OSHA and NCCCO standard. This training is performed by a third-party training firm employed by Peterson Contractors, Inc., using an approved NCCCO plan provided by the training firm. Training shall include, but is not limited to:

- **Load charts**
- **Assembly and disassembly. As each manufacturer has different requirements, the mechanics and operators who assemble and disassemble booms shall review and follow the individual owner's manual prior to the assembly of disassembly procedures.**
- **Each site shall be assessed by the competent person prior to operations. The certified crane operator will normally be designated as the competent person. Particular attention shall be given to the distance between power lines and the closest position of the boom. In the event that the boom or lines could reach an energized power line, an appropriate course of action must be taken to ensure safety. A designated spotter is required, and additional safeguards may include, but are not limited to having the power line de- energized, insulating guards put in place around conductors, or re-routing of power lines by the utility company.**
- **Cranes shall be inspected prior to each day use by the operator. A monthly inspection shall be performed by a competent person. Annual inspections shall be performed by a certified crane inspector.**
- **Signal persons shall be trained per OSHA requirements. If the crane operators view of the lift is obscured, a dedicated signal person or radio communications may be used to direct the operator.**
- **Modifications to any crane shall not be made for any reason without the written consent of the manufacturer.**

All other employees are trained annually to the following:

<u>Crane Safety</u>: Use care around cranes. Crane operators have a very limited field of view and may not be able to see pedestrians.

- **Only trained, qualified, authorized, and NCCCO certified personnel are allowed to operate cranes.**
- **During lifting, use only one signalman to avoid confusion. Untrained persons shall not give hand signals.**
- **Barricading around the swing radius of the counterweight must be used when operating a crane.**

- **Never operate cranes closer than 20 feet from power lines. As the power line voltage increases, so does the safe distance. Refer to OSHA manual for distance calculations. If power line contact is possible, a dedicated spotter is required.**
- **Before operating or lifting, perform the written daily inspection. Inspect slings, rigging, hooks, etc. for defects, cracks, or other damage. Report any damage to your supervisor. Do not use any item that has a defect.**
- **Never use a crane's cable as a sling.**
- **Cushion rigging from sharp edges or corners.**
- **When necessary to guide suspended loads, use tag lines.**
- **Never ride the load, ball, or hook.**
- **Keep out from under suspended loads.**
- **Trained personnel who are directing movement, must ensure that they have an escape route.**
- **The complete crane program is in the Safety Office.**

PURPOSE

The purpose of these policies and procedures is to provide a safe working environment for crane operators and all site personnel. In addition, surveys of the crane equipment and the operation of the crane has proven to be advantageous to the flow and expediency of work performed during any crane operation on construction sites.

SCOPE

These crane procedures shall be followed on all Peterson Contractors, Inc. projects by all Peterson Contractors, Inc. employees, subcontractors, subcontractor's employees, crane rental companies, crane operators, crane users, and any other persons, organizations, or contractors entering or operating crane equipment on any Peterson Contractors, Inc. job site. These crane procedures will provide a method by which all cranes 14 1/2-ton capacity or greater shall be surveyed. However, all cranes shall be *operated in* accordance with all applicable regulations during use on Peterson Contractors, Inc. projects. Prior to use on all projects, each 14 1/2-ton capacity or greater crane shall be surveyed by a qualified person, designated by Peterson Contractors, Inc. Further, Peterson Contractors, Inc. may require *any* crane of any capacity to be subject to these requirements at its discretion. The survey will include an inspection of the crane components, accessory gear, below the hook lifting devices, the assembly and setup of the crane each time a crane enters the project. The Surveyor shall review each crane operator's credentials prior to allowing the crane to be operated. Additionally, the surveyor shall monitor the crane operation and identify any procedures considered an unsafe operating practice. These procedures should assist the subcontractor and crane company in maintaining a safe working environment when cranes are used on Peterson Contractors, Inc. projects.

It should be recognized that it is not feasible to address every possible issue, situation, and circumstance that may arise or be encountered on a project. Therefore, if there are conflicts or an unsafe condition that occurs which is not addressed in this manual for a particular crane operation matter, the Peterson Contractors, Inc. safety officer and Peterson Contractors, Inc.'s crane safety consultant shall be contacted immediately, prior to commencement of the crane operation.

AUTHORITIES

The criteria and standards for the safe operation of cranes shall include the following:

1. Manufacturer's recommendations and requirements
2. American National Standards Institute (ANSI)
3. American Society of Mechanical Engineers (ASME)
4. Occupational Safety and Health Administration (OSHA)

Note: Where the project is located in a state that has its own regulatory agency such a California's Division of Occupational Safety and Health Administration (Cal-OSHA), the crane equipment must meet the requirements of the state agency.

These criteria are the minimum standards that must be met in all crane operations on all Peterson Contractors, Inc. projects. This crane safety procedure manual does not purport to restate all of these regulations but should be used for clarification and additional criteria to be adhered to while operating crane equipment on Peterson Contractors, Inc. projects.

RESPONSIBILITIES

Peterson Contractors, Inc.

The Project Superintendent/supervisor/supervisor (referred to hereafter as superintendent/supervisor or supervisor) shall be responsible for scheduling of the surveyor 48 hours prior to the arrival of each crane unit. The Project Superintendent/supervisor has complete authority to cease any crane activity or operation on the project which does not comply with this manual and these policies and procedures. Based upon the information provided by the crane surveyor, the superintendent/supervisor may also refuse to allow any crane to proceed to operate until such time that the unsafe condition can be

eliminated. Where a crane operator declines to make a lift based on any safety concerns, Peterson Contractors, Inc., and its Project Superintendent/supervisor will provide full support to eliminate the unsafe condition. Upon notification of any safety deficiency, the Project Superintendent/supervisor will discuss a plan of action with the surveyor, sub-contractor, and crane crew to eliminate the safety deficiency.

Subcontractor

The subcontractor shall be responsible for providing Peterson Contractors, Inc.'s Project Superintendent/supervisor with the scheduled crane arrival time, general crane information such as type, size, and owner, anticipated lifts, and any critical lift plans a minimum of 72 hours prior to scheduled arrival date of the crane. Each subcontractor of Peterson Contractors, Inc. shall comply with this crane safety manual and these policies and procedures. The subcontractor shall be responsible for providing each crane owner and all operators with the crane safety criteria prior to bidding and/or arrival on any Peterson Contractors, Inc. project. Prior to scheduling a crane, the subcontractor shall provide Peterson Contractors, Inc. with a completed "*Pre-Erection Hazard Analysis*" form with a plan of action for items requiring corrective measures. The subcontractor shall ensure that each item requiring corrective measures are corrected prior to the arrival of the crane equipment. The subcontractor shall ensure that the crane and its crew are working within the guidelines set forth by the governing authorities and Peterson Contractors, Inc. at all times. Any delays or down time due to the determination or correction of any crane safety deficiency shall be at the subcontractor's expense. The subcontractor shall ensure that the crane company has provided Peterson Contractors, Inc.'s management with a "certificate of insurance" and acceptable endorsement naming Peterson Contractors, Inc. & the project owner & the subcontractor as additional insured on its general liability coverage 24 hours prior to the arrival of any crane equipment to the job site.

Crane Surveyor

Peterson Contractors, Inc. retains the surveyor as a third party, independent crane safety consultant who is a qualified person. He or she will provide the Project Superintendent/supervisor, subcontractor and Safety Officer with the results and findings of each crane safety survey. The crane surveyor shall ensure that the requirements of this crane safety manual are followed by the subcontractors, crane crews, and crane owners. The crane surveyor may serve as the liaison between the crane users and the project superintendent/supervisor. Upon identification of any safety deficiency that cannot be eliminated prior to commencement of the crane work, the surveyor shall report the deficiency to the subcontractor's foreman along with recommended plan of action. The surveyor shall inform Peterson Contractors, Inc.'s Safety Officer, Peterson Contractors, Inc.'s Project Superintendent/supervisor, and the crane owner respectively if discrepancies are identified during the survey process that may affect the safe operation of the crane. If an imminent danger exists by continued operation the crane operation shall cease immediately, and appropriate action shall be taken consistent with the reporting procedures set forth in this document.

Crane Owner

Each crane owner shall comply with this crane safety manual and these policies and procedures. Crane owners providing equipment that is operated and maintained by personnel under their employ shall be responsible for the training and qualifications of the operator. The crane owner shall provide all required documentation such as manufacturers load charts, manufacturer's maintenance criteria, and proof of safety certifications consistent with the state and/or federal requirements for inspection by the crane surveyor, Peterson Contractors, Inc., the Project Superintendent/supervisor, and/or the subcontractor. Where a safety deficiency or unsafe operation is found, the crane owner shall provide the subcontractor and/or Peterson Contractors, Inc. with a proposed plan of action to eliminate the safety deficiency. Any delays due to operations or equipment that are averse to these requirements shall be at the crane owner's expense. Crane owners shall provide Peterson Contractors, Inc.'s management with a "certificate of insurance" and an acceptable endorsement naming Peterson Contractors, Inc. & the project owner & the subcontractor as additional insured on its general liability and excess coverage 24 hours prior to the arrival of any crane equipment to the job site. Peterson Contractors, Inc. shall provide the crane owner

with evidence of builder's risk insurance upon request. Further, the crane owner shall be provided with the following Peterson Contractors, Inc. crane safety documents:

1. Mobile Crane Safety Manual
2. Pre-Erection Hazard Analysis forms
3. Crane Operation Safety Survey forms
4. Crane Safety Survey *Procedure* Flow Chart
5. Crane Safety Survey *Process* Flow Chart

It is the responsibility of the crane owner to ensure that these procedures are read and understood prior to submitting a bid or estimate to any subcontractor or Peterson Contractors, Inc. for crane work.

Crane Operator

Effective June 1, 2012, Peterson Contractors, Inc. requires all crane operators to be certified under the NCCO. or an equivalent program that has been reviewed by and accepted by the Peterson Contractors, Inc.'s Safety Officer. All crane operators shall be experienced, trained, and qualified to operate the size of crane, type of crane, and type of work to be performed on the Peterson Contractors, Inc. project. The operator shall provide proof of any training certificate or licenses possessed attesting to his or her crane operation knowledge, skill, and experience for review by the surveyor or Peterson Contractors, Inc. Management. Each crane operator shall comply with this crane safety manual and these policies and procedures. The crane operator shall work directly with the crane surveyor and provide the surveyor with the information required on all Peterson Contractors, Inc. crane survey forms. The crane operator will work with the crane surveyor to correct any safety deficiencies found during the survey. Any crane operator, who determines that a lift is unsafe to be performed, shall refuse to continue operation of the crane with the full support of Peterson Contractors, Inc. in eliminating the safety deficiency. Upon finding an unsafe condition, crane operator shall consult with the Peterson Contractors, Inc. superintendent/supervisor and/or the crane surveyor to create a safe plan of action.

Crane Oiler/Mechanic/Mechanic

An Oiler/Mechanic/mechanic shall not operate any crane equipment unless he possesses the qualifications of a bona fide crane operator as defined above. This limitation does not include positioning of the crane during relocation, assembly, or disassembly. Further, the Oiler/Mechanic/mechanic may operate the crane as required during routine maintenance in the performance of his or her general duties. Any crane Oiler/Mechanic/mechanic, who determines that a lift is unsafe to be performed, shall notify the operator immediately and consult with the Peterson Contractors, Inc. superintendent/supervisor and/or the crane surveyor to create a safe plan of action.

DEFINITIONS[1]

Accessory Gear

A secondary part of the crane or crane component which contributes to the overall function of the crane which includes but is not limited to jibs, jib assemblies, outriggers, sheave assemblies, and counterweights.

Anti-Two-Blocking Device

A warning or damage prevention feature which alerts the operator before the load block or ball assembly contacts upper boom sheave assembly[2].

Below-the-Hook Lifting Device

Rigging used in conjunction with the crane to attach the load to be lifted to the crane hook assembly which includes but is not limited to such items as wire rope slings, lifting beams, skookum blocks, shackles, and web slings.

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[1] A complete list of definitions may be found in ANSI B30.5 § 0.2 and in the state or federal O.S.H.A. standards.

[2] A crane lifting personnel on a suspended work platform shall be equipped with a positive acting anti two-block device that prevents damage to crane components.

Certified Agent

The manufacturer, or a person who is currently registered as a professional civil, mechanical, or structural engineer by the state in which the Peterson Contractors, Inc. project is located and is knowledgeable in the structure and use of the equipment.

Certification of Crane Operators (CCO)

The National Commission for the Certification of Crane Operators (CCO) is an independent not-for-profit corporation formed to establish and administer a nationwide program of certification of operators. This organization establishes set standards for measuring the knowledge and proficiency for the safe operation of crane equipment.

Functional

A safety device shall be in use and operating while the crane is in use. Functional *does not* mean merely "capable of performing" for purposes of these safety requirements.

Jib

An extension attached to the boom point to provide added boom length for lifting specified loads.

On-Rubber Pick and Carry

A lift made in conjunction with the manufacturer's load chart without the use of outriggers in which the load is lifted and moved under the power of the crane unit.

Rolling Outriggers

An accessory component that is attached to the outrigger assembly in lieu of outrigger pads which allow for pick and carry with the outriggers extended. Use of this equipment requires that the component and load chart is approved by the manufacturer or certified agent.

Qualified Person

A person who, by possession of a recognized degree or certificate of professional standing, or who, by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve problems relating to the subject matter and work.

PROCEDURES

Bid Procedures

1. Each subcontractor shall submit in its bid set, a declaration that all crane equipment utilized on Peterson Contractors, Inc. projects will meet the criteria required in the bid specifications for safe crane operation.
2. Each subcontractor will receive the *Crane Safety Manual: Policies and Procedures*, *Crane Operation Survey*, and a *Pre-Erection Hazard Analysis* form upon award of contract.
3. The subcontractor shall provide copies of the Crane Safety Manual with Policies and Procedures, Crane Operation Survey, and a Pre-Erection Hazard Analysis form for each crane rental company who plans to provide crane equipment for use on Peterson Contractors, Inc. projects prior to a pre-job conference.

Subcontractor Safety Start-up Meeting

Each subcontractor, along with a representative of the crane provider, shall attend a pre-job start-up meeting with *Pre-Erection Hazard Analysis* form completed.

Crane Survey Procedure

1. The subcontractor shall notify the Peterson Contractors, Inc. Project Superintendent/supervisor at least 72 hours in advance of a scheduled crane arrival. The notification shall include the following information:
    - 1.1. On-site subcontractors contact name
    - 1.2. Crane type (Hydraulic, conventional, crawler, etc.)
    - 1.3. Crane capacity
    - 1.4. Arrival time-crane assembly
    - 1.5. Work start time
    - 1.6. Crane owner / rental company name
    - 1.7. Type of work to be performed (tilt-up panels, steel erection, set air-conditioning unit, etc.)
    - 1.8. Copy of pre-authorized critical lift plan as needed
2. The Peterson Contractors, Inc. Project Superintendent/supervisor shall schedule the crane surveyor within 48 hours for arrival at the job site concurrent with the arrival time of the crane equipment for viewing of the assembly crane equipment.
3. Upon approval by Peterson Contractors, Inc.'s Project Superintendent/supervisor, the equipment survey portion of this procedure may be conducted at the crane owner's location 24 hours prior to the crane equipment's arrival at the job site.
4. Each survey shall commence at "build up" of the crane. Crane owners should plan for ½ hour of additional "build up" time for the survey.
5. Upon arrival at the job site, the crane surveyor shall report directly to the Peterson Contractors, Inc. office, then proceed to the location of the crane assembly area.
6. The crane surveyor shall introduce himself or herself to the subcontractor and crane crew giving a brief explanation of the survey procedure.
7. Where a deficiency requires repairs, replacement of equipment, or additional testing which may result in down time and additional expenses, the crane owner shall be afforded the opportunity to determine the method of correction which is acceptable to Peterson Contractors, Inc., the crane surveyor, and the subcontractor.
8. The crane survey shall include the inspection of the crane, accessory equipment to be used on the project, and below-the-hook lifting devices that will be used for lifts on the project.
9. The surveyor shall record all information required on the *Crane Operation Safety Survey* form and identify any safety deficiencies noted as follows:
    - 9.1. Note deficiency on report along with plan of action for correction (crane crew corrected, crane company replacing component, etc.)
    - 9.2. Report deficiency to the crane operator or Oiler/Mechanic for initial correction.
    - 9.3. Where a deficiency cannot be corrected prior to scheduled work time, a verbal and written report shall be provided to the Peterson Contractors, Inc. Project Superintendent/supervisor who includes the following information:
        - 9.3.1.1. Persons notified of deficiency (operator, Oiler/Mechanic, subcontractor, etc.)
        - 9.3.1.2. Severity of deficiency.
        - 9.3.1.3. Recommended plan of action.
10. The crane surveyor shall view the setup of the crane and operation of the crane in order to evaluate the safe operation and use of the crane equipment.
11. Upon surveying the assembly, set up, and operation of the crane equipment, the survey report, along with all deficiencies noted and recommended plans of action shall be provided to the Peterson Contractors, Inc. Project Superintendent/supervisor.

12. Under most circumstances, the survey is completed on site between 1 and 3 hours.
    12.1. If on site time is expected to exceed 4 hours, the surveyor should notify the Project Superintendent/supervisor.
    12.2. If on site time is expected to exceed 8 hours, the surveyor should notify the Peterson Contractors, Inc. Safety Officer.
    Note: *Failure to notify the persons specified above shall result in the reduction or nonpayment of the surveyor's charges that exceed the said time periods.*

CRANE SAFETY REQUIREMENTS

1. Report any unsafe conditions to the subcontractor foreman or Project Superintendent/supervisor immediately.
2. Access for entry and assembly of the crane shall be free from obstructions, underground hazards, and overhead power lines.
3. All crane equipment and operation of crane equipment shall meet the requirements of the manufacturer, ANSI, ASME, and OSHA.
4. Crane equipment shall have the required inspection and proof load testing certificates current and available upon arrival at the job site.
5. Lifting beams (commonly known as "spreader bars") shall conform to ANSI B30.20, 1985 regulations which requires the following permanent markings:
    5.1. Manufacturer's name
    5.2. Serial number (ID #)
    5.3. Weight of the bar if over 100 lbs.
    5.4. Rated load
    5.5. Initial Proof load testing at 125% of the lifting beam's capacity.
6. Proof of initial load testing shall be provided for all lifting beams. Load test shall not exceed 125% of the rated load.
7. Engineering data shall be provided to Peterson Contractors, Inc. Management on all specialized below-the-hook lifting devices.
8. No crane shall be operated near high voltage as follows:
    - 0 to 50 kV — 10 feet
    - over 50 to 200 kV — 15 feet
    - over 200 to 350 kV — 20 feet
    - over 350 to 500 kV — 25 feet
    - over 500 to 750 kV — 35 feet
    - over 750 to 1000 kV — 45 feet
9. Crane shall travel with no load and the boom or mast lowered near high voltage as follows:
    - over 0 to 50 kV — 6 feet
    - over 50 to 345 kV — 10 feet
    - over 345 to 750 kV — 16 feet
    - over 750 to 1000 kV — 20 feet
10. No loads shall be lifted over personnel.
11. No one shall place their hands or any other portion of the body under a load suspended by the crane.
12. No unauthorized personnel shall be working within the lifting area[3] of the crane.
13. Yellow caution tape shall be used to prevent personnel from entering the crane rotation area.
14. All personnel shall be clear of crawler tracks while the crane is moving.
15. All personnel except for the operator and Oiler/Mechanic shall be clear of the crane rotating area during its operation.
16. A designated signal person shall provide direction to the operator using the standard hand signals or radio communications that are common to the industry.

[3] The lifting area encompasses that area where the boom is likely to swing over during the lift. This area should be clear of any person who is not directly involved with the lifts being performed.

17. Operation of crane equipment by persons designated as the Oiler/Mechanic shall be conducted under the direct supervision of an experienced operator during non-critical lifts. Where such lifts are conducted, notice shall be given to all employees working with the crane equipment.

    Note: *Direct supervision requires the experienced operator to be present at the operator's station during all lifts.*
18. No lifts shall exceed 75% of the manufacturer's load rating unless a written critical lift plan has been submitted and pre-approved. Where tilt-panels panels are being lifted, no lifts shall exceed 85% of the manufacturer's load rating unless a written critical lift plan has been submitted and pre-approved.
19. The manufacturer's load chart shall be affixed to the crane or located in the operator's cab accessible to the operator.
20. All lifts and crane configurations shall be consistent with the manufacturer's requirements and load charts.
21. When pick and carry operations occur, the ground shall be smooth, level, and compacted, free from obstructions, underground hazards, and overhead power lines.
22. No cribbing shall be placed under the crane axle, frame, or out rigger extension beams.
23. Jib and boom shall be free from structural damage that exceeds the manufacturer's maximum allowable tolerances.
24. Anti-two-blocking device shall be functional and operational on all cranes equipped with such device. (*All cranes that are operated in states where anti-two blocking devices are required shall be equipped in accordance with that state's standards)*
25. A load indicator shall be on all load lines in use on mobile cranes that exceed 50 tons rated capacity or 200 feet of boom.
26. An electronic boom angle indicator shall be provided on all hydraulic cranes exceeding 15 tons rated capacity or a 60 feet boom length.
27. No crane shall be operated in wind speeds that exceed 35 mph or the manufacturer's recommendations whichever is the lesser wind speed.
    - 27.1. Where surface area of material being lifted creates a sail affect, the crane may be required to cease operating at lower wind speeds than stated.
28. Wind speed indicators shall be provided by Peterson Contractors, Inc. at each site location and affixed to a pole or structure at the highest point possible above the ground level.
    - 28.1. Where possible, the wind indicator shall be properly affixed to the crane boom.
29. No person shall disable or circumvent a safety device while the crane is performing lifting service.

INSPECTION OF CRANE EQUIPMENT

California Projects

All cranes assembled or operated on Peterson Contractors, Inc. Projects located in California shall have a current annual certificate of inspection and a current quadrennial certificate of inspection and proof load test issued by a crane surveyor licensed and accredited by the California Division of Occupational Safety and Health Administration (Cal-OSHA). Copies of these certifications shall be located on the crane upon its arrival at the job site and provided for inspection by a qualified Peterson Contractors, Inc. representative prior to operation of the crane on any project. If either certificate expires while in operation on a project, the crane shall cease its operation until such time the crane is inspected, tested, and a current certificate has been issued by a licensed crane surveyor.

Other States

No crane shall be operated or assembled prior to providing proof of an annual safety inspection performed by a qualified person. The inspection criteria and document shall be consistent with Federal Occupational Safety and Health Administration, Department of Labor regulations and regulatory agency of the governing state that the project is located. Proof of such inspection shall be located on the crane upon its arrival at the job site and provided for inspection by a qualified Peterson Contractors, Inc. representative prior to operation of the crane on any project.

LOAD TESTING OF JIBS AND ROLLING OUTRIGGERS

This section applies to all California projects and other states that require proof load testing of crane equipment

All cranes that perform lifts with the jib attachment or rolling outriggers on Peterson Contractors, Inc. projects shall have a current certification[4] stating that the jib and rolling outriggers have been proof load tested by a qualified person. Proof load tests shall be performed during the initial proof load testing and every four years thereafter, unless a structural repair has been performed on the crane. If a structural repair has been performed (even if the jib was not damaged) a load test shall be performed prior to placing the crane back into service. No proof load test of the jib or rolling outriggers is required during the annual certification as long as proof load testing of these components has been performed in accordance with the requirements specified above. Where the crane owner elects not to test the jib or rolling outriggers, it shall be noted on the certificate and the jib or rolling outriggers shall not be used until load testing has been successfully completed. These requirements apply equally to telescopic and lattice boom cranes.

ANTI TWO-BLOCK DEVICES

This section is a minimum requirement for projects in all states.

Cranes manufactured after February 28, 1992

Telescopic boom cranes operated on Peterson Contractors; Inc. projects shall be equipped with a functional anti two-block damage *prevention* feature. Lattice boom cranes operated on Peterson Contractors; Inc. projects shall be equipped with a functional anti two-block damage *warning* feature.

Cranes manufactured before February 28, 1992

All cranes equipped with an anti-two-blocking device shall be operated with the device fully functional during all lifts conducted on Peterson Contractors, Inc. projects.

LOAD RATING CHARTS

This section is a minimum requirement for projects in all states.

A durable load chart with clearly legible letters and figures provided by the crane manufacturer or a certified agent experienced and familiar with the characteristics of the crane equipment shall be securely fixed (where the manufacturer's load chart is provided in a binder or other book form, the chart shall be located in the operator's cab) to the crane in a location clearly visible to the operator or within reach of the operator while at the control station. The chart shall contain a full and complete range of crane load ratings, consistent with the manufacturer's' recommendations, at all stated operating radii or boom angles and for all permissible boom lengths, jib lengths and angles, also alternate ratings for use and non-use of optional equipment on the mobile crane, such as outriggers and counterweights which affect ratings. The chart shall also contain essential precautionary or warning notes relative to limitations on equipment and operating procedures, including indication of the least stable position. In addition, no crane shall be rerated unless such rating changes are approved by the certified agent. Load ratings shall be expressed in terms related to method of measuring boom angle and length or lifting radius.

[4] Cal-O.S.H.A. Title 8, plate V or equivalent proof for cranes located in states outside of California. See attachment 1 for example.

Interpretation

Where the *actual* boom angle does not match the values shown on the load chart, the value used must be the next *lower* boom angle number. Where the *actual* load radius does not match the values shown on the load chart, the value used must be the next *higher* radius number.

Example

The load is to be placed at a 55-ft radius at 47° boom angle. The load chart values are shown for 50-ft. radius at 55° boom angle with the next value at 60-ft. radius at 45° boom angle. The capacity reflected at the 60-ft. radius at 45° boom angle must be used for this example since no capacity values are given for the actual load radius and boom angle.

CRITICAL LIFTS

A critical lift is established where any one of the following conditions are created:

1. Where in the crane's current configuration at any point during the lift, a gross load weight exceeds 75% of the capacity of the crane, or 85% of the capacity of the crane where tilt-up panels are erected.
2. A single lift that two or more cranes are used including tandem lifts and tailing cranes.
3. Lifts made in proximity of power lines as defined by the voltage clearance specifications described above.
4. Lifts involving specialized or unique and complex rigging equipment.
5. Hoisting of suspended work platforms.
6. Static tower crane erection and dismantlement.
7. Making lifts below the ground level where the crane is positioned.
   Note: *Where the below the ground lift is minimal, a critical lift plan may not be required.*

Critical Lift Plan

Where a critical lift will be performed, a written critical lift plan shall be submitted to Peterson Contractors, Inc. prior to commencing with the lift. The written plan shall include the following:

1. Crane manufacturer, capacity, and all specifications for the configuration to be used for the lift.
2. Load chart data for the crane to be used to make the lift.
3. Total calculated weight of the load to be lifted including all rigging and other deductions consistent with the manufacturer's load chart.
4. Diagrams of the lift that provides geometrical conditions of the load, rigging, and all crane positions during the lift. The drawing shall provide the following:
   A. Locations of all components to be lifted prior, during and after the lift is completed.
   B. Radius points.
   C. Swing patterns.
   D. If the lift must be aborted, positions where the load may be safely landed.
   E. Areas where any personnel, public, and vehicles must be evacuated during the lift.
5. Potential ground loading for each point of contact by the crane in selected locations in which the crane will perform the critical lift.

6. Soil and subsurface data and information pertaining to the location on which the crane used for the critical lift will be positioned. This information shall be procured from an authoritative source such as a geotechnical engineer or a professional civil engineer registered in the state where the project is located.
   This information may be available from Peterson Contractors, Inc. for selected locations on some projects.
7. An engineer shall use the data provided in #5 and #6 above to verify and confirm the following:
   A. That the soil and subsurface conditions can support all loads imposed during the critical lift.
   B. That the designs of cribbing and other supports used under the crane load points are appropriate to safely transfer such loads.
8. Signature and stamp on the plan by a registered professional engineer licensed in the state in which the project is located, evidencing review of the plan as meeting the requirements set forth in this manual and that all loads and load information and calculations contained in the plan are approved, acceptable and safe to perform.
9. Operator qualifications.
10. Method by which communication will be provided to the crane operator. (Designated signal person, two-way radio, hard wire phone system, etc.)
11. A critical lift hazard analysis which identifies the hazards associated with the lift and the means and methods to reduce, mitigate, or eliminate the hazards.
12. Emergency action plan.

The written plan shall be submitted 72 hours prior to any critical lift for review by Peterson Contractors, Inc.'s job superintendent/supervisor and crane surveyor. No critical lifts shall be conducted prior to such approval.

CRANE SUSPENDED WORK PLATFORMS

The use of a crane or derrick to hoist employees on a personnel platform is prohibited, except when the erection, use, and dismantling of conventional means of reaching the worksite, such as a personnel hoist, ladder, stairway, aerial lift, elevating work platform or scaffold, would be more hazardous or is not possible because of structural design or worksite conditions. If a crane suspended work platform is used, its use shall be conducted in accordance California Code of Regulations, Title 8, § 5002. Where work is conducted outside of California, Federal O.S.H.A., 29 C.F.R. 1926 § 550(g) shall be followed unless the regulations of the state where the project is located exceed these requirements.

QUALIFICATIONS OF CRANE OPERATORS AND SURVEYORS

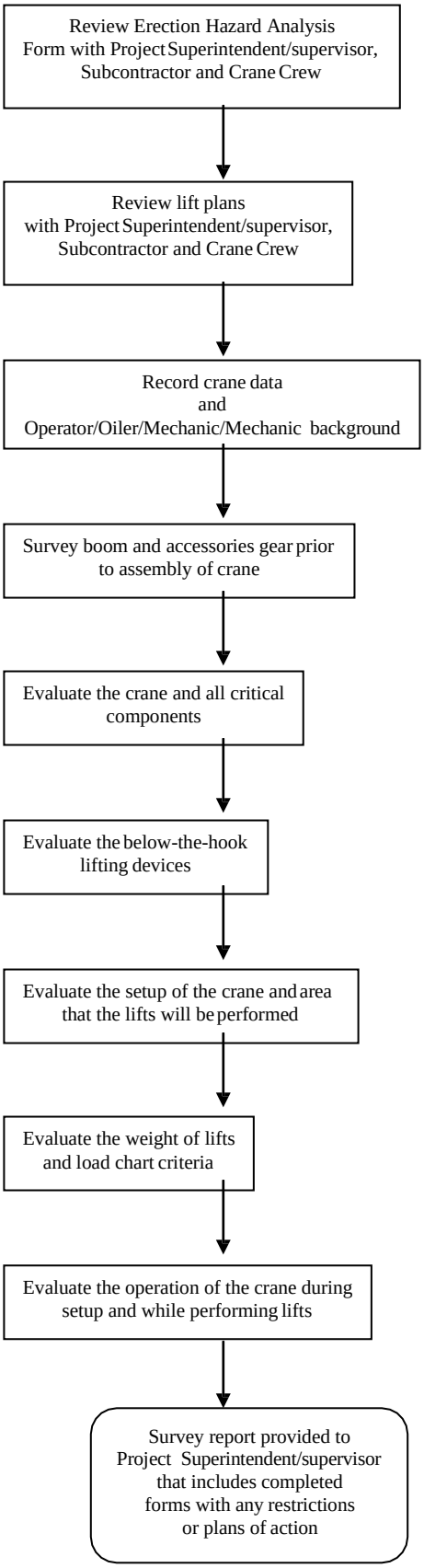
All persons who perform crane safety surveys or operate crane equipment on Peterson Contractors, Inc. projects shall be adequately trained and experienced on the type of crane and lifts that are to be performed. Effective June 1, 2012, Peterson Contractors, Inc. requires all crane operators to be certified under the CCO or an equivalent program that has been reviewed and accepted by the Peterson Contractors, Inc.'s Safety Officer. Proof of CCO certification or its equivalent (as defined under Crane Operator) shall be provided to Peterson Contractors, Inc.'s qualified crane surveyor or Project Superintendent/supervisor prior to commencing any crane operations. It shall be the responsibility of the subcontractor to ensure that all operators hired or contracted with are qualified, trained, and experienced prior to commencing with lifts on Peterson Contractors, Inc. projects. In addition, all crane surveyors shall be required to complete CCO testing.

INTENT

The intent of this Mobile Crane Safety Policy and Procedure Manual is to provide guidance and clarity to existing regulations and requirements for the safe operation of crane equipment. The requirements set forth above shall be followed by all subcontractors who own or hire crane equipment to work on Peterson Contractors, Inc. projects. Additionally, Peterson Contractors operators and supervisors shall follow the applicable portions of this program.

Crane Safety Survey

Procedure



PRE-ERECTION HAZARD ANALYSIS FOR GENERAL CONTRACTOR

➔Required 72 Hours Prior to Crane Arrival←

Subcontractor _____ **Contact:** _____

Project Name: _____ **Phone:** _____

Project Location: _____ **Job No.:** _____

Date: _____

I have read and understand the Peterson Contractors, Inc. crane safety policies and procedures. **Yes** o **No** o

Crane Equipment

Type of work **Tilt – up panel** o **Steel erection** o **Other**_____

Crane capacity: _____ **Boom length:** _____

Maximum pick radius on this project _____ **Maximum pick weight on this project** _____

Crane Type: **Telescoping Boom** o **Lattice Boom** o **Rough Terrain** o

Truck mounted o **Crawler Mounted** o **Other:**_____

Accessory gear: **Rolling outriggers** o **Jib** o **Other:**_____

Lift Analysis

Will any lifts exceed 75% of the crane's rated capacity?	**Yes**	o	**No**	o	**N/A**	o
If yes, have you submitted a written critical lift plan?	**Yes**	o	**No**	o	**N/A**	o
Will any lifts require on rubber pick and carry operation?	**Yes**	o	**No**	o	**N/A**	o

Pre-Erection Hazard Analysis

A. Access for cranes, trucks, and other erection Equipment:						
1. Haul road for cranes and trucks	**OK**	o	**N/A**	o	**See Notes**	o
2. Adequate entrance into and out of project	**OK**	o	**N/A**	o	**See Notes**	o
3. Use of public access requiring traffic control or permits	**OK**	o	**N/A**	o	**See Notes**	o
4. Adequate area for crane assembly	**OK**	o	**N/A**	o	**See Notes**	o
5. Adequate area for crane disassembly	**OK**	o	**N/A**	o	**See Notes**	o
6. Existing structures on site	**OK**	o	**N/A**	o	**See Notes**	o
7. Truck staging area available	**OK**	o	**N/A**	o	**See Notes**	o
8. Access outside of structure	**OK**	o	**N/A**	o	**See Notes**	o
B. Ground Conditions						
1. Level	**OK**	o	**N/A**	o	**See Notes**	o
2. Compaction to support crane loads	**OK**	o	**N/A**	o	**See Notes**	o
3. Ramps - - gradeability	**OK**	o	**N/A**	o	**See Notes**	o
4. Crane restrictions (excavations, shoring, underground structures)	**OK**	o	**N/A**	o	**See Notes**	o
5. Slab thickness will support crane	**OK**	o	**N/A**	o	**See Notes**	o
C. Utilities						
1. Overhead wires (provide method used to maintain clearance in notes section)	**OK**	o	**N/A**	o	**See Notes**	o
2. Underground vaults, sewer, gas, fiber optics, etc.	**OK**	o	**N/A**	o	**See Notes**	o
3. Airport clearance	**OK**	o	**N/A**	o	**See Notes**	o
4. Airport flag or light	**OK**	o	**N/A**	o	**See Notes**	o
D. Other condition not addressed above:	**OK**	o	**N/A**	o	**See Notes**	o

Information provided by:_____ _____

Print **Signature**

Date_____Page One of ____

PRE-ERECTION HAZARD ANALYSIS NOTES

Subcontractor Name _____ **Subcontractor Contact:** _____

Job Name: _____ **Subcontractor Phone:** _____

Job Location: _____ **Job No.:** _____

Item No.	Description and Plan of action
C-1	**(Example) Crane** *must be operated near high voltage power lines for the erection of east corner of*
Plan of action	*Crane company has installed a swing warning device that will sound an alarm before the crane has swung into*
	the restricted zone of the power lines. The alarm increases its sound as the crane nears the zone.

Subcontractor Name_____

Subcontractor **Subcontractor**

Contact Name _____ **Contact's signature**_____

Print

Continued from Page One…

Item No.	Description and Plan of action

Subcontractor's Initials: _____

Surveyor's Initials: _____

Surveyor's Name _____ Surveyor's Signature_____

Surveyor Assignment No.:_____
Date of survey:_____
Survey Form No. _____

CRANE OPERATION SAFETY SURVEY

***Attention*: SURVEY IS BASED ON THE CONDITION OF CRANE AT THE TIME OF SURVEY. CORRECTIONS AND CHANGES MADE AS A RESULT OF THIS SURVEY SHALL BE WRITTEN ON THE SURVEY NOTES FORM.**

Subcontractor		**Subcontractor Contact Name:**	
Project Name:		**Subcontractor Phone Number:**	
Project Location:		**Crane Owner Name:**	
SL's Job Number:		**Crane Owner Phone Number:**	
Superintendent/supervisor:		**On Site Survey Time:**	**Begin:** _____ **End:** _____

Crane Identification

Crane Configuration at Time of Survey:

Crane Configuration Upon Surveyor's Arrival:				**Crane Assembled:**	O			**Crane Disassembled:**	O			
Manufacturer:							**Unit Number:**					
Model Number:							**Serial Number:**					
Boom Length:				**Jib Length:**			**Crane Capacity:**					
Boom Section Identification Numbers:	**Base**	**Tip**	**Mid**	**Insert 1**	**Insert 2**	**Insert 3**	**Insert 4**	**Insert 5**	**Insert 6**	**Jib**	**Jib**	
	____	____	____	____	____	____	____	____	____	___	___	
Crane Type:	**Telescoping Boom**	O	**Lattice Boom**	O	**Rough Terrain**	O						
	Truck Mounted	O	**Crawler Mounted**	O	**Mobile Tower**	O						
Accessory gear:	**Rolling Outriggers**	O	**Jib**	O	**Jib Configuration:**_____							
Counterweight Configuration:			**Jib Length:**									

Surveyor Assignment No.:_____
Date of survey:_____
Survey Form No. _____

Crane Evaluation

1.0 Documentation

1.1 Annual certification (attach copy)	YES	O			See Notes	O
1.2 Quadrennial certification (attach copy)	YES	O	N/A	O	See Notes	O
1.3 Manufacture's load chart accessible on the crane to the operator	YES	O			See Notes	O
1.4 Operator's manual on the crane	YES	O			See Notes	O
1.5 Pre-Erection Hazard Analysis completed (attach copy)	YES	O			See Notes	O
1.6 Other: _____	YES	O	N/A	O	See Notes	O

2.0 Safety Devices

2.1 Load moment indicator is functioning and accurate	YES	O	N/A	O	See Notes	O
2.2 Anti two-block device is functioning and operational	YES	O			See Notes	O
2.3 Boom angle indicator is functioning and accurate	YES	O			See Notes	O
2.4 Other: _____	YES	O	N/A	O	See Notes	O

3.0 Structural Integrity

3.1 Boom sections	OK	O			See Notes	O
3.2 Jib assembly	OK	O	N/A	O	See Notes	O
3.3 Outrigger supports	OK	O	N/A	O	See Notes	O
3.4 Main frame	OK	O			See Notes	O
3.5 Other: _____	OK	O	N/A	O	See Notes	O

4.0 General Components

4.1 Main load line	OK	O	N/A	O	See Notes	O
4.2 Auxiliary load line	OK	O	N/A	O	See Notes	O
4.3 Boom hoist line	OK	O	N/A	O	See Notes	O
4.4 Outriggers extend and deploy	OK	O	N/A	O	See Notes	O
4.5 Manufacturer's counterweights installed in accordance with the load chart	OK	O			See Notes	O
4.6 Sheaves and drums checked for excessive wear and damage	OK	O			See Notes	O

4.7 Tire condition for on rubber picks	**OK**	O	**N/A**	O	**See Notes**	O
4.8 Other: _____	**OK**	O	**N/A**	O	**See Notes**	O

Surveyor Assignment No.:_____
Date of survey:_____
Survey Form No. _____

Operator and Oiler/Mechanic History

5.0 Operator

Name:		**Emergency contact person:**	
		Emergency phone number:	

5.1 How many years' experience operating on this type of crane?					**Years**
5.2 How many years of experience with the type of lifts on this Job? (Tilt-up panel work, steel erection, etc.)					**Years**
5.3 Has the operator received a copy of General Contractor's crane safety policy and procedures?	**YES**	**O**	**See Notes**	**O**	
5.4 Does the operator use and understand the load-rating chart on this crane?	**YES**	**O**	**See Notes**	**O**	
5.5 Has the operator been instructed that he should not continue with any lift that creates an unsafe condition?	**YES**	**O**	**See Notes**	**O**	
5.6 Does the operator have the Certified Crane Operator's (C.C.O.) certificate?	**YES**	**O**	**See Notes**	**O**	

5.6.1 C.C.O. Number:		**Issued:**		**Expires:**	

5.7 Does the operator have any other crane operator's certificates?	**YES**	**O**	**N/A**	**O**	**See Notes**	**O**	

5.8 Number of certificates:		**Issued By:**		**Issue Date:**		**Expires:**	

6.0 Oiler/Mechanic

Name:		**Emergency contact person:**	
		Emergency phone number:	

6.1 How many years' experiences oiling on this type of crane?					**Years**
6.2 How many years of experience with the type of lifts on this Job? (Tilt-up panel work, steel erection, etc.)					**Years**
6.3 Has the Oiler/Mechanic received a copy of General Contractor's crane safety policy and procedures?	**YES**	**O**	**See Notes**	**O**	
6.4 Does the operator use and understand the load-rating chart on this crane?	**YES**	**O**	**See Notes**	**O**	
6.5 Has the Oiler/Mechanic been informed that he should notify the operator of any unsafe condition?	**YES**	**O**	**See Notes**	**O**	
6.6 Has this Oiler/Mechanic been informed of the General Contractor provision restricting operation of crane equipment to qualified operators	**YES**	**O**	**See Notes**	**O**	

only?				

Surveyor Assignment No.:_____
Date of survey:_____
Survey Form No. _____

Below-the-Hook Lifting Devices

7.0 Lifting Beams (ANSI B30.20)

7.1 Manufacture's name permanently marked on bar	YES	O	N/A	O	See Notes	O
7.2 Serial Number (ID #) permanently marked on bar	YES	O	N/A	O	See Notes	O
7.3 Weight of bar (if over 100 lbs.) permanently marked on bar	YES	O	N/A	O	See Notes	O
7.4 Rated load capacity permanently marked on bar	YES	O	N/A	O	See Notes	O
7.5 Proof of rated load test not exceeding 125% capacity of the bar	YES	O	N/A	O	See Notes	O
7.6 Other: _____	YES	O	N/A	O	See Notes	O

Set Up and Operation

8.0 Lift Information

The following lift information provided by:	Name: _____		Company	_____		
8.1 What is the heaviest lift to be lifted with this crane?				Weight_____Lbs.		
At what radius?				Radius_____Ft.		
8.2 What is the maximum radius this crane will be lifting?				Radius_____Ft.		
Weight of lift?				Weight_____Lbs.		
8.3 What is the maximum load for pick and carry lifts				Weight_____Lbs.		
Maximum radius for pick and carry lifts?				Radius_____Ft.		
8.4 Does this crane have an approved load chart for on rubber picks?	YES	O	N/A	O	See Notes	O
8.5 Does this crane have an approved load chart for rolling out riggers?	YES	O	N/A	O	See Notes	O
8.6 All lifting procedures conform with the load chart requirements	YES	O			See Notes	O
8.7 All lifts will be performed without exceeding 80% of the rated capacity	YES	O			See Notes	O
8.8 Written plans provided to General Contractor Safety Management for critical lifts	YES	O	N/A	O	See Notes	O
8.9 The Critical lift plan has been provided by:	Company:	_____				
	Name:	_____				
	Title:	_____				
	Date	_____				
8.10 Wind speed limitation specified by the manufacturer_____M.P.H					See Notes	O
8.11 Other: _____	YES	O	N/A	O	See Notes	O

Surveyor Assignment No.:_____
Date of survey:_____
Survey Form No. _____

9.0 Set up						
9.1 Crane is level	YES	O			See Notes	O
9.2 Ground compacted and stable	YES	O			See Notes	O
9.3 Properly cribbed under outrigger pads only	YES	O	N/A	O	See Notes	O
9.4 Crane configuration is compatible with manufacture's requirements	YES	O			See Notes	O
9.5 Area of travel is level, clear, and stable for pick and carry	YES	O			See Notes	O
9.6 Area has been checked for underground utilities in crane area	YES	O			See Notes	O
9.7 Outriggers are fully extended deployed with the tires off the ground or used in compliance with manufacturer's specifications	YES	O	N/A	O	See Notes	O
9.8 Airport Flag is properly attached to boom Tip	YES	O	N/A	O	See Notes	O
9.9 Other:_____	YES	O	N/A	O	See Notes	O
10.0 Operation						
10.1 Pre lift meeting held with crane and rigging crew	YES	O			See Notes	O
10.2 Designated signal man	YES	O	N/A	O	See Notes	O
10.3 Operation of crane conducted in a smooth and safe manner	YES	O			See Notes	O
10.4 Lifting sequence and plan is known and followed by the operator	YES	O			See Notes	O
10.5 The crane is operated the required distance from overhead power lines	YES	O	N/A	O	See Notes	O
10.6 Tag lines are used on loads	YES	O	N/A	O	See Notes	O
10.7 Other:_____	YES	O	N/A	O	See Notes	O

Assessment

11.0 Results						
11.4 This crane may proceed with lifts as scheduled	YES	O			See Notes	O
11.5 This operator may proceed with lifts as scheduled	YES	O			See Notes	O
11.6 The accessory gear may be used as scheduled	YES	O	N/A	O	See Notes	O
11.7 The below-the-hook lifting devices may be used as scheduled	YES	O	N/A	O	See Notes	O
11.9 Other:_____	YES	O	N/A	O	See Notes	O

Subcontractor's Name _____ **Surveyor's Name** _____
Print Print

Subcontractor's signature_____ Surveyor's Signature_____

Date_____
Page One of ___

CRANE OPERATION SURVEY NOTES

THESE NOTES APPLY TO ITEMS IDENTIFIED ON
***CRANE OPERATIONS SAFETY SURVEY* FORM NUMBER:_____**

Job Name:		**Job No.:**			
Crane Owner:		**Manufacturer:**			
Model Number:		**Serial Number:**		**Unit Number:**	

Item No.	Description and Plan of action
1.1	(Example) *No annual certification on the crane*
Plan of action:	*Crane owner will fax copy to Peterson Contractors, Inc. job office prior to crane going to work.*

Subcontractor Name_____

Subcontractor Contact Name _____ **Subcontractor Contact's signature_____**
Print

Surveyor's Name _____ **Surveyor's Signature_____**

Continued from Page One…

Item No.	Description and Plan of action

Subcontractor's Initials: _____

Surveyor's Initials: _____

MOBILE CRANE SAFETY BID SPECIFICATIONS

1.1 RELATED DOCUMENTS

A. Crane Manufacture's recommendations and requirements.
B. American Society of Mechanical Engineers/American National Standards Institute (ASME/ANSI) B30 codes.
C. Department of Labor, Occupational Safety and Health Administration (Fed-OSHA) 29 CFR Parts 1910 and 1926.
D. California, Occupational Safety and Health Administration (Cal-OSHA) Title 8, Group 13 regulations, OR applicable state regulations for job site location.
E. *Peterson Contractors, Inc. Mobile Crane Safety Manual*
F. *Peterson Contractors, Inc. Pre-Erection Hazard Analysis* forms
G. *Peterson Contractors, Inc. Crane Operation Safety Survey* forms
    1. Documents identified in E, F, and G above are available upon request.

2.1 SUMMARY

A. These safety specifications shall apply to all mobile cranes exceeding 3 tons rated capacity utilized for lifting of materials or personnel on all Peterson Contractors, Inc. projects.
B. Cranes with a rated capacity of 14.5 tons or more shall undergo the Safety surveys identified in section 6.1 of these specifications.

3.1 RESPONSIBILITIES

A. The Peterson Contractors, Inc. Project Superintendent/supervisor has complete authority to cease any crane activity or operation on the project.
B. The subcontractor shall ensure that mobile crane lifting operations are performed within the guidelines set forth by the governing authorities and Peterson Contractors, Inc. always. Any delays or down time due to the determination or correction of any crane safety deficiency shall be at the subcontractor's own expense.
C. The surveyor shall inform Peterson Contractors, Inc.'s Safety Officer, Peterson Contractors, Inc.'s Job Superintendent/supervisor, and the crane owner respectively if discrepancies are identified during the survey process that may affect the safe operation of the crane and propose a plan of action to assist in the elimination of the deficiency.
D. The crane owner shall provide all required documentation such as manufacturers load charts, manufacturer's maintenance criteria, and proof of safety certifications consistent with the state and federal requirements for inspection by the crane surveyor, Peterson Contractors, Inc., the project superintendent/supervisor, and the subcontractor. The crane owner shall provide Peterson Contractors, Inc.'s management with a "certificate of insurance" and acceptable endorsement naming Peterson Contractors, Inc. & the project owner & the subcontractor as additional insured on its general liability coverage 24 hours prior to the arrival of any crane equipment to the job site. Any delays due to operations or equipment that are averse to the safety requirements set forth in the Peterson Contractors, Inc. Mobile Crane Safety Manual shall be at the crane owner's and/or subcontractor's own expense.
E. Any crane operator, who determines that a lift is unsafe to be performed, shall refuse to continue operation of the crane. The crane operator shall work directly with the crane surveyor and provide the surveyor with the information required on all Peterson Contractors, Inc. crane survey forms.
F. No crane Oiler/Mechanic shall operate any crane equipment unless he possesses the qualifications of a bona fide crane operator. This limitation does not include positioning of the crane during relocation, assembly, or disassembly.

4.1 QUALIFICATIONS OF CRANE PERSONNEL

A. Effective June 1, 2012, all crane operators and crane surveyors shall be certified under the National Commission for the Certification of Crane Operators (C.C.O.) or an equivalent program that has been reviewed by an independent assessment service (e.g., Buros Institute) accepted by the Peterson Contractors, Inc. management.

5.1 CRANE OPERATION SAFETY REQUIREMENTS

A. All crane equipment and operation of crane equipment shall meet the requirements of the manufacturer, ANSI, ASME, and OSHA.
B. Lifting beams (commonly known as “spreader bars”) shall conform to ANSI B30.20, 1985 regulations and include the following permanent markings:
    1. Manufacturer’s name.
    2. Serial number (ID #).
    3. Weight of the bar if over 100 lbs.
    4. Rated Load.
    5. Initial Proof load testing at 125% of the lifting beam’s capacity.
C. Cranes shall maintain the minimum clearance from power lines as specified in the Peterson Contractors, Inc. Mobile Crane Safety Manual.
D. No lifts shall exceed 75% of the manufacturer’s load rating unless a written critical lift plan has been submitted and pre-approved. *Where tilt-panels panels are being lifted, no lifts shall exceed 85% of the manufacturer’s load rating unless a written critical lift plan has been submitted and pre-approved.*
E. No crane shall be operated in wind speeds that exceed 35 mph or the manufacturer’s recommendations whichever is the lesser wind speed.
    1. Where possible, wind speed indicators shall be attached to the crane boom.
    2. Peterson Contractors, Inc. will provide a wind indicator at each site location.
F. No person shall disable or circumvent a crane safety device while the crane is performing lifting service.

6.1 CRANE SAFETY DEVICES

A. An Anti-two-blocking device shall be functional and operational on all cranes manufactured after 1991.
B. A load moment indicator shall be on all load lines in use on mobile cranes that exceed 50 tons rated capacity or 200 feet of boom.
C. An electronic boom angle indicator shall be provided on an all-hydraulic cranes exceeding 15 tons rated capacity or a 60 feet boom length.

7.1 CRANE CERTIFICATE OF INSPECTION AND LOAD TEST

A. All cranes shall have a current annual certificate of inspection and a current quadrennial certificate of inspection and proof load test located in the crane, issued by a crane surveyor licensed and accredited by the California Division of Occupational Safety and Health Administration (Cal-OSHA).
B. All cranes that perform lifts with the jib attachment on Peterson Contractors, Inc. projects shall have a current certification of inspection stating that the jib has been proof load tested prior to conducting any lifts.
C. Projects located outside of California, no crane shall be operated or assembled prior to providing proof certification and inspection consistent with the applicable Federal and State requirements.

8.1 LOAD RATING CHARTS

A. A durable load chart with clearly legible letters and figures provided by the crane manufacturer or a certified agent that is experienced and familiar with the characteristics of the crane equipment shall be securely fixed (where the manufacturer’s load chart is provided in a binder or other book form, the chart shall be located in the operator’s cab) to the crane in a location clearly visible to the operator or within reach of the operator while at the control station.

9.1 CRANE SURVEY PROCEDURE

A. All cranes rated 14.5 tons or more shall be subject to a safety survey performed by a qualified third party prior to commencement of work.
B. Notice shall be given to the Peterson Contractors, Inc. Project Superintendent/supervisor by the subcontractor 72 hours prior to the arrival of crane equipment.

C. *Pre-Erection Hazard Analysis* form shall be completed and submitted to the Peterson Contractors, Inc. Project Superintendent/supervisor 24 hours prior to crane arrival.
D. The crane survey shall include the inspection of the crane, certificate of inspection and testing documentation, accessory equipment to be used on the project, and below-the-hook lifting devices that will be used for lifts on the project.
E. The crane surveyor shall view the setup of the crane and operation of the crane in order to evaluate the safe operation and use of the crane equipment.

10.1 CRANE SUSPENDED WORK PLATFORMS

A. The use of a crane or derrick to hoist employees on a personnel platform is prohibited, except when the erection, use, and dismantling of conventional means of reaching the worksite, such as a personnel hoist, ladder, stairway, aerial lift, elevating work platform or scaffold, would be more hazardous or is not possible because of structural design or worksite conditions.
B. If a crane suspended work platform is used, its use shall be conducted in accordance with the applicable state and federal regulations

11.1 CRITICAL LIFT PLANS

A. A critical lift is established where any one of the following conditions are created:
    1. Where in the crane's current configuration at any point during the lift, a gross load weight exceeds 75% of the capacity of the crane, or 85% of the capacity of the crane where tilt-up panels are erected.
    2. A single lift that two or more cranes are used including tandem lifts and tailing cranes.
    3. Lifts made in proximity of power lines as defined by the voltage clearance specifications described above.
    4. Lifts involving specialized or unique and complex rigging equipment.
    5. Hoisting of suspended work platforms.
    6. Static tower crane erection and dismantlement.
    7. Making lifts below the ground level where the crane is positioned. Where the below the ground lift is minimal, a critical lift plan may not be required.
B. A critical lift plan shall be submitted to the Peterson Contractors, Inc. Superintendent/supervisor, and Crane Surveyor 72 hours prior to the crane's arrival at the job site.
C. The plan shall be consistent with the criteria set forth in the Peterson Contractors, Inc. Mobile Crane Safety Manual.

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Lifting / Hoisting with mobile crane

Required Equipment: Crane

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Move onto site - unload from trailer, track to start location.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.
Crane operations	Swing radius of excavator boom and counterweights	Barricade counterweight and boom radius with cones
	Open excavation / load set	Operators, supervisors, and other personnel must watch for unauthorized persons Set up barricade fence or caution tape as is appropriate.
	Ingress and egress of haul trucks	Ensure haul trucks approached and depart from specific direction. Rotate crane boom / counterweights in opposite direction of haul truck routes.
	Spectators	Operators, supervisors, and other personnel must watch for unauthorized persons in or approaching operational areas.

Hazard: Operation of Hydraulic Lo-Drill, Soil Mec, Mobile Ram

Peterson Contractors, Inc.		
Job Safety Analysis	**Activity Description:** Drilling various diameter holes to specified depth	
	Required Equipment: Mobile Ram, Soil-Mec, or Excavator equipped with Lo-Drill	
Principal Activity Steps	**Potential Hazards**	**Recommended or Required Controls**
Move onto site - unload from trailer, track to start location.	Spectators	Ensure area is barricaded or personnel are instructed to keep spectators out of operational areas.
Drill specified diameter holes	Swing radius of excavator boom and counterweights	Educate personnel in area to avoid swing radius.
	Underground Obstructions	Per contract, the General Contractor/Owner are responsible to locate or to remove any underground obstructions. See Subcontract Exhibit A
	Ground Personnel	Drills will not operate when personnel are out of equipment and/or standing on the ground within the work area. This includes Quality inspectors, visitors, or any other persons including the general contractor and spectators.
	Open holes	Ensure filling and tamping operations keep up with drilling operation. Cover holes not being worked on with appropriate plywood covers specifically fabricated to keep cover from sliding. Cover must be marked clearly with the word HOLE. All holes left open after hours must be covered and/or barricaded. Cover a minimum of 50% of the hole with the drill when QA personnel are taping depth.
	Ingress and egress of skid loader	Ensure skid loader approaches and departs from specific direction. Rotate excavator boom in opposite direction to allow ingress from skid loader. Personnel shall wear proper PPE that is appropriate to each site. Vest, leather boots, and safety glasses at all times. Hard hats when out of equipment cabs. All equipment shall be inspected prior to being brought onto the work site. All equipment shall be free from any type of leak. All equipment shall be in proper working order, including horn, backup alarm, and fire ext.
Move off site - load onto trailer.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Drill and Grout Shoring Beams

Required Equipment: Excavator equipped with Lo-Drill, skid loader, forklift/crane

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Move onto site - unload from trailer, track to start location.	Spectators	Ensure area is barricaded or personnel are instructed to keep spectators out of operational areas.
Drill specified diameter holes	Moving Equipment	Educate personnel in area to avoid swing radius. Positive Communication with operator when working around equipment Stay out of operator blind spots. Stay clear of pinch points caused by equipment and stationary objects. Agree on hand signals prior to work, if necessary
	Open holes	Set up perimeter with tape around open holes or cover holes with plywood. Cover must be marked clearly with the word HOLE.
	Ingress and egress of skid loader	Ensure skid loader approaches and departs from specific direction. Rotate excavator boom in opposite direction to allow ingress from skid loader.
Mobile/Prep beams for picking	Moving Equipment	Stay clear of forklift carrying beams Positive Communication with operator when working around equipment Stay out of operator blind spots. Stay clear of pinch points between equipment/beams and stationary objects Develop hand signals for beam loading Keep loads low to ground when using forklift Use spotter assistance when carrying long beams with forklift
	Torching/Cutting	Hot work permit Check wind direction- is it blowing toward flammable objects, dry vegetation Fire extinguisher present Fire watch person
Set Beams	Suspended loads	Check rigging condition and capacity Use standard crane signals. If nonstandard agree on signal meanings Use taglines Use rigging with positive attachment when lowering into hole Stay clear of suspended loads Check equipment lifting capacity and radius
Grout Beams	Concrete Trucks	Stay out of driver blind spots Use spotter when backing and positioning truck Stay clear of pinch points between equipment/beams and stationary objects
	Concrete Burns	PPE- gloves, long sleeve shirts, safety glasses Wash concrete off immediately if it becomes in contact with skin
Move off site - load onto trailer.	Spectators	

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Installation of Ductile Iron Piping

Required Equipment: Tracked excavator power unit equipped with impact pier insertion attachment

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Loading/unloading unit from transport	Traffic	If unloading near traffic hazard, provide reflective barricades or personnel to direct traffic away or around loading/unloading activity.
	Ground personnel Loading - unloading - assembly	If ground personnel are present, provide barrier or personnel to direct persons on ground away from loading/unloading or assembly activity.
Tracking unit to/from point of delivery to operational site		When unit is being assembled to or removed from the power unit, persons on the ground must stay a minimum distance of 50 feet away from the unit. Safety cables must be attached.
	Ground personnel Vehicular traffic	While tracking to or from sites, operators shall be vigilant for ground personnel and other vehicular traffic. When tracking backwards a dedicated spotter must be present to watch for obstacles, obstructions, or personnel.
Transporting casings between work areas.	Stress on unit pivots	Insert unit may be stored in a vertical position for short periods of time, such as between pier insertions only if the lifting/safety cables are attached and the bottom of the insertion unit is sitting firmly on a reasonably flat surface. The operator of the tracked excavator equipped with the insertion unit shall not carry the insertion unit with the bottom end more than 6-8" above the ground except to avoid obstacles in its path.
Installation of outer casings	Personnel attaching lifting cable	With pipe laying on the ground, personnel shall securely attach lifting cable/sling onto upper end of outer casing. Before the power unit lifts the outer casing, all personnel shall retreat beyond the tall radius of the outer casing.
	Installation of outer casing	Power unit shall impact the outer casing to depth
Installation of inner casing	Personnel attaching lifting cable	With pipe laying on the ground, personnel shall securely attach lifting cable/sling onto upper end of inner casing. Before the power unit lifts the outer casing, all personnel shall retreat beyond the tall radius of the inner casing.
	Installation of inner casing	Power unit shall impact the inner casing to depth Impact driver shall stop operations before ground personnel approaches to check levers, attach, or detach lifting cables.

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Electrical Safety Awareness

Peterson Contractors has no qualified employees and does no electrical work. During normal operations PCI employees may come into contact with or near contact to electrically live power transmission lines. The following training is provided to each new employee during new hire orientation and the annually thereafter. Only electrically qualified persons are allowed to work on energized parts or equipment. Electrically qualified personnel shall adhere to the approach distances set forth in table S-5. No PCI employee is qualified or authorized to perform electrical installation or maintenance. Those who may be in the vicinity of live electrical sources will be trained and be familiar with electrical safety practices that pertain to their job assignments to eliminate all injuries resulting from possible malfunctions, improper grounding and/or defective electrical tools. This training shall include, but not limited to safe distances, equipment exit procedures, and grounding requirements. Under normal circumstances, the crew supervisor is designated as the competent person on site to oversee the program and is responsible for the program execution.

Electrical Safety/GFCI: Electricity flows to the equipment on a hot (+) wire that is usually red, blue, or black. It flows back from the equipment on a grounded (-) wire that is usually white or gray. If the amount of power returning is not equal to the amount of power going in, or is short, some electricity has gotten loose and can be dangerous. Loose electricity will follow the path of least resistance to get to ground. A grounding or insurance wire that is usually green or bare copper, connected to the ground pin, and provides the path of least resistance for loose power to follow to ground. A piece of equipment that has had the ground pin removed can be dangerous. A ground fault circuit interrupter (GFCI) that measures the flow of electricity on a line shall be used on the power line to any portable equipment and lines. If the two are not equal the GFCI will immediately shut off the flow of power. GFCI units shall be tested before each day use by pressing the “push to test” button on the unit. If the unit fails to function properly it shall be taken out of service immediately and sent out for repairs or replacement. Do not make repairs to equipment, cords, plugs, etc., unless you are qualified to do so. The most common cause of electrocutions on the job is from using the wrong type or damaged extension cords. Check cords before each use, remove a damaged cord from service. Do not use cords that have damaged insulator covering or damaged plugs. Use only extension cords that have grounding pins and grounding pin receptacles. Use only cords that are approved for hard and extra hard service. These cords will be marked with approved codes: S, ST, SO, STO, SJ, SJO, SJT, and SJTO. If a cord is damaged in any way, missing a ground pin, has damaged isolative covering, remove it from service immediately. Unqualified personnel and all equipment shall maintain a safe distance of at least 10 feet from any power line. Distance increases as the voltage increases. See your supervisor for safe distances. Treat all power lines as if they are energized. Do not assume the lines are de-energized. PCI employees will not enter any structures or vaults with exposed energized parts – day or night.

If operations that may include personnel or equipment are within reach of energized power lines, contact the power company to have the lines de-energized. In all cases where the job site contains energized or de-energized parts, the site shall be illuminated to insure those employees can adequately see to avoid contact. In the event that the lines cannot be de-energized, have the power company install insulators/protective shields to the lines. Be aware that the insulators do NOT protect the

equipment from voltage, they are merely visual indicators of the location of the lines. No employee shall work, operate heavy equipment, or perform operations closer than 10 feet from power lines, for lines 50kV or less. As the power line voltage increases, so does the safe distance per OSHA regulations. If power line contact is possible, a dedicated spotter is required. No employee is allowed to work in confined spaces. However, in the unlikely event that an employee must work in a confined space or other work area where electrical hazards exist, protective shields, barriers, and/or insulating materials shall be installed.

In the event that the unit comes into contact with a power line:

- Stay in the machine. Do NOT climb down. If you are in contact with both the machine and the ground, you are part of the circuit and could be electrocuted.
- Keep others away.
- Notify the supervisor to contact the power company to de-energize the line and ground the machine before exiting.
- If the unit catches on fire and you have to get out. Jump clear of the machine. Then take small steps, not letting you heal go past your toes and move away from the machine. Do NOT touch the machine.

PCI has no electrically qualified employees. Employees are not allowed to perform electrical work of any kind, under any circumstances. Employees may not enter confined spaces that contain energized power lines under any circumstances.

Lockout / Tagout: In a situation where the unexpected startup of machinery or release of stored energy could occur, Lockout / Tagout rules apply. To isolate a piece of equipment:

- Turn the equipment off using the normal controls. Press the stop button, flip the toggle switch, close the valve, etc. Allow the unit to stop.
- Ensure area personnel are aware you are taking the unit out of service and will be working on it.
- Isolate the equipment's energy source. Unplug it, turn off the circuit breaker, close the valve, etc.
- Preferably apply a padlock with identification tag - Lockout. Use a tag only if a padlock application is not possible – Tag Out.
- Relieve stored energy from springs, hydraulic systems, air pressure, elevated parts, etc.
- Make sure moving parts such as rotating blades, fly wheels, etc. have come to a complete stop. Block items that may move or rotate.
- Perform the needed work.
- When finished and ready to resume work, ensure tools and extra materials have been removed, guards have been replaced, area personnel are aware you are about to restart the machine.

NEVER remove or tamper with some else's lock or tag. Removing another employee's lock or tag will result in immediate termination.

Ladder Safety:
Ensure ladders are loaded in such a way to not exceed their rated capacity. Ladders must be inspected prior to each use. Feet must be in place and in good condition. Rails and rungs must not be bent or damaged. Rungs must be uniformly spaced and meet OSHA requirements. Homemade ladders are not allowed unless prior approval is obtained, and the ladder is inspected after construction and prior to use to insure it meets OSHA requirements. When extension ladders are set up, use a ratio of 1 foot out from the base for every 4 feet of height. If the ladder is set up on a ledge that is 12 feet high, the foot of the ladder should be 4 feet out from the base. The top of the ladder must extend 3 feet above the landing area. Tie or otherwise attach the ladder near the top to prevent movement. Never reach more than an arm's length beyond the side rails of the ladder. Never use bricks, blocks, or other unstable footing materials. Never jump from a ladder. Climb all the way down. Do not sit, stand, or climb on the top two steps of a stepladder. Never use a stepladder like a straight ladder. Make sure stepladders are fully open and the spreaders are in the locked position before climbing. Ladders must be insulated and electrically non-conductive.

Electrically qualified employee shall not wear conductive items such as jewelry or clothing when in the vicinity of energized parts unless the conductor has been wrapped or otherwise isolated.

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Emergency Action Plan

Peterson Contractors Emergency Action plan is included in the Employee Safety Handbook is updated annually and is provided to each employee during new hire orientation and on an annual basis thereafter. Employees may contact their supervisor or the Safety Officer with questions or for additional information at any time. As PCI normally works in open field locations, no physical alarms are possible. Direct communication by supervisors will be used. In the unlikely event that PCI employees are working in the confines of a factory setting, employees will abide by the Emergency Action Plan used by the factory.

Peterson Contractors requires all supervisors shall be trained in First Aid, CPR and Blood Borne Pathogens prior to initial duties and annually thereafter. Training materials from Red Cross are copy write and include, but not limited to:

- The supervisor on each job site shall be certified in First Aid and CPR in compliance with the requirement to provide services in the absence of medical care that is not reasonably accessible.
- First Aid kits shall be found in each supervisor's pickup trucks and in each job site trailer.
- All first aid kits shall be sized for or more than the number of employees on the job site. Contents will include, but not limited to typical first aid supplies such as band aids, antibiotic ointment, eye flush fluid packs, one way breather masks, gauze pads, adhesive tape, scissors, tweezers, and slings.
- Exposures which include, but not limited to blood and bodily fluids.
- Personal protective equipment, including, but not limited to protective gloves and 1-way breather masks.
- Vaccination requirements and availability.
- Proper personal protection.
- Isolation of the contaminated area.
- Proper clean up procedures.
- Proper hazardous material disposal.

Employees are trained on exposures and proper procedures during new hire orientation. The general employee populations are trained/retrained each year during the annual training day. This training includes, but is not limited to:

- Exposures which include, but not limited to blood and bodily fluids.
- Reporting requirements as the result of personal exposure.
- Proper personal protection.
- Isolation of the contaminated area.

Materials used for training shall be form the Red Cross First Aid and CPR training materials. Peterson Contractors has a minimum of two certified First Aid / CPR trainers on staff.

No two emergencies are the same. Each must be treated based on the circumstances that appear.

When an accident happens, employees are trained not to panic and contact the supervisor on the job site. Supervisors are trained in and certified in first aid and CPR. Stocked first aid kits in his truck and in most job trailers. The first person to arrive at the scene of an accident should:

- Survey the scene. Never enter an accident scene if it can't be done safely. Check for fire, falling objects, live electrical wires, etc. Do not enter excavations, pits, or questionable accident scenes.
- Stay calm, panic never helps anyone or anything.
- Contact 911 immediately for fires and/or severe personal injuries.
- Contact the site supervisor next. If the site supervisor is not available, contact the Safety Officer at 319-404-5334. The supervisor will determine the severity of the situation. For severe medical situations, an ambulance will be requested, and employees dispatched to direct the ambulance into the site. In minor cases, the supervisor will transport the injured employee to a company designated medical facility.
- In the rare event that employees are working around hazardous substances, quick drench procedures and facilities will be provided.
- Emergency action plan is included in the Safety Manual. Training for all employees on this manual shall be conducted annually.
- Send someone for help.
- Evacuate the area if necessary or if in doubt. As each job site is different, exit routes and reporting locations must be laid out and employees trained at the beginning of the project. The supervisor on site or the project superintendent shall account for each employee working on the site after the evacuation at the designated reporting location. Any employee who is not accounted for shall be reported to emergency services.
- In cases where a person is injured, keep the victim calm. Perform first aid only if you have been properly trained.
- Do not move the victim unless he/she is in immediate danger.
    - If you must move the victim, grab the victim's clothing at the shoulder, support the victim's head with your arms, and drag the victim to safety by their clothes.

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EXCAVATION AND TRENCHING

General

Excavation/Trenching Plan

An Excavation/Trenching Plan will be submitted and accepted prior to beginning operations. At a minimum, the plan shall include:

a. Conditions: For excavations/trenches less than 5 ft (1.5 m) in depth, a written plan is optional. For excavations or trenches greater than 5 ft (1.5 m) in depth a written plan is required.

b. Identification and credentials of Competent Person.

c. Diagram or sketch of the area where the work is to be done, with adjacent and nearby structures shown.

d. Projected depth of the excavation.

e. Projected soil type and method of testing to determine soil type.

f. Planned method of shoring, sloping and/or benching.

g. Planned method for confined space entry, trench access and egress and atmospheric monitoring processes.

h. Locates. Location of utility shut offs (if required).

i. Proposed methods for preventing damage to overhead utility lines, trees designated to remain, and other man-made facilities or natural features designated to remain within or adjacent to the construction rights-of-way.

j. Plan for management of excavated soil/asphalt/concrete.

k. Plan for traffic control.

l. Digging permits (Excavation permits) if required. All underground lines/utilities (communication lines, water, fuel, electric lines) shall be located and protected from damage or displacement. Utility companies and other responsible authorities shall be contacted to locate and mark the locations and, if they so desire, direct or assist with protecting the underground installations.

m. Certification of UXO clearance. Where excavations are to be performed in areas known or suspected to contain explosives, unexploded munitions, or military ordnance, surface, and subsurface clearance by qualified explosive ordnance disposal (EOD) personnel shall be accomplished prior to excavation work.

n. For Cofferdams: Controlled flooding plan, Fall protection, Access/egress; Evacuation procedures.

o. Employees shall wear fall harnesses and lifelines in circumstances where falls could occur or when they are 6 feet or more above the surface. Follow the Fall Protection program for specifics.

p. Employees shall receive site specific training for each project. Training shall include entry and exit procedures, emergency procedures, as well as project specific information.

Excavation inspection and testing.

a. When persons will be in or around an excavation, a Competent Person shall inspect the excavation, the adjacent areas, and protective systems daily: before each work shift.

throughout the work shifts as dictated by the work being done; after every rainstorm; after other events that could increase hazards, e.g., snowstorm, windstorm, thaw, earthquake, etc.; when fissures, tension cracks, sloughing, undercutting, water bulging at the bottom or other similar conditions occur; when there is a change in size, location or placement of the spoil pile; and where there is any indication or change in adjacent structures.

b. The Competent Person shall be able to demonstrate the following:
(1) Training, experience, and knowledge of:
(a) Soil analysis.
(b) Use of protective systems; and
(c) Requirements of this section, CFR 1926 Subpart P.
(2) Ability to detect:
(a) Conditions that could result in cave-ins.
(b) Failures in protective systems.
(c) Hazardous atmospheres; and
(d) Other hazards including those associated with confined spaces.
(3) And have the Authority to take prompt corrective measures to eliminate existing and predictable hazards and stop work when required.
c. Testing for soil classification shall be of an approved method; pocket penetrometer, plasticity/ wet thread test or visual test and shall be conducted at least daily or if conditions warrant.
d. If evidence of a situation that could result in possible cave in, slides, failure of protective systems, hazardous atmospheres, or other hazardous condition is identified, exposed workers shall be removed from the hazard and all work in the excavation stopped until all necessary safety precautions have been implemented.
e. In locations where oxygen deficiency or gaseous conditions are known or suspected, or in excavations 4 ft (1.2 m) or greater in depth, air in the excavation shall be tested prior to the start of each shift or more often if directed. A log of all test results shall be maintained at the work site.

Protective systems.
a. The sides of all excavations in which employees are exposed to danger from moving ground shall be guarded by a support system, sloping, or benching of the ground, or other equivalent means.
b. Excavations less than 5 ft (1.5 m) in depth and which a Competent Person examines and determines there to be no potential for cave-in do not require protective systems, however, a fixed means of egress shall be provided.
c. Sloping or benching of the ground shall be in accordance with applicable regulations.
d. Support systems shall be in accordance with applicable OSHA standards.
e. Protective systems shall have the capacity to resist without failure all loads that are intended or could reasonably be expected to be applied to the system.
f. Shoring shall be used for unstable soil or depths greater than 5 ft (>1.5 m) unless benching, sloping, or another acceptable plan is implemented by the Contractor.

Stability of adjacent structures.
a. Except in stable rock, excavations below the level of the base of footing of any foundation or retaining wall, or at depths that exceed 20', shall not be permitted unless:
(1) A support system, such as underpinning, is provided to ensure the stability of the structure and to protect employees involved in the excavation work or in the vicinity thereof; or
(2) A Registered Professional Engineer (RPE) has approved the determination that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation and that the excavation will not pose a hazard to employees.
b. If the stability of adjoining buildings or walls is endangered by excavations, shoring, bracing, or underpinning designed by a qualified person shall be provided to ensure the stability of the structure and to protect employees.
c. Sidewalks, pavements, and related structures shall not be undermined unless a support system is provided to protect employees and the sidewalk, pavement, or related structure. Where it is necessary to undercut the side of an excavation, overhanging material shall be safely supported.

Protection from water.
a. Diversion ditches, dikes, or other means shall be used to prevent surface water entering an excavation and to provide good drainage of the area adjacent to the excavation.

b. Employees shall not work in excavations in which there is accumulated water or in which water is accumulating unless the water hazards posed by accumulation is controlled.
(1) Freezing, pumping, drainage, and similar control measures shall be planned and directed by a registered engineer. Consideration shall be given to the existing moisture balances in surrounding soils and the effects on foundations and structures
if it is disturbed.
(2) When continuous operation of ground water control equipment is necessary, an emergency power source shall be provided. Water control equipment and operations shall be monitored by a Competent Person to ensure proper operation.

Protection from falling material.
a. Employees shall be protected (by scaling, ice removal, benching, barricading, rock bolting, wire mesh, or other means) from loose rock or soil that could create a hazard by falling from the excavation wall: special attention shall be given to slopes that may be adversely affected by weather, moisture content, or vibration.
b. Materials, such as boulders or stumps, that may slide or roll into the excavation shall be removed or made safe.
c. Excavated material shall be placed at least 2 ft (0.6 m) from the edge of an excavation or shall be retained by devices that are sufficient to prevent the materials from falling into the excavation. In any case, material shall be placed at a distance to prevent excessive loading on the face of the excavation.

Mobile equipment and motor vehicle precautions.
a. When vehicles or mobile equipment are used or allowed adjacent to an excavation, substantial stop logs, or barricades shall be installed. The use of a ground guide is recommended.
b. Workers shall stand away from vehicles being loaded or unloaded to avoid being struck by spillage or falling materials.
c. Excavating or hoisting equipment shall not be allowed to raise, lower, or swing loads over or adjacent to personnel in the excavation without substantial overhead protection. Personnel shall maintain a safe distance from hoisting operation until the load has been placed.
d. Employees exposed to public vehicular traffic shall be provided with, and shall wear, high visibility apparel as per PCI requirements.
e. When internal combustion engines/equipment is operating in deep excavations or shafts, ventilation equipment shall be provided. A technician shall be always on hand taking/monitoring oxygen and CO levels. Employees shall not be present in these areas unless necessary and air monitoring is present. Employee shall be equipped with emergency retraction equipment such as lifelines.

Employees shall not be permitted to work on the faces of sloped or benched excavations at levels above other employees except when employees at lower levels are adequately protected from the hazard of falling material or equipment.

When operations approach the location of underground utilities, excavation shall progress with caution until the exact location of the utility is determined. Workers shall be protected from the utility and the utility shall be protected from damage or displacement.

Employees entering excavations classified as confined spaces or that otherwise present the potential for emergency rescue such as bell-bottom pier holes or similar deep and confined footing, shall wear rescue equipment and maintain communication with the (confined space) attendant.

SAFE ACCESS
Protection shall be provided to prevent personnel, vehicles, and equipment from falling into excavations. Protection shall be provided according to the following hierarchy:

Perimeter protection: Class I, Class II, and Class III.
a. If the excavation is exposed to members of the public or vehicles or equipment, then Class I perimeter protection is required.
b. If the excavation does not meet the requirements for Class I perimeter protection but is (1) routinely exposed to employees, and (2) either is deeper than 6 ft (1.8 m) or (3) contains hazards (e.g., impalement hazards, hazardous substances), then Class II perimeter protection is the minimum protection required. When workers are in the zone between the warning barricades/flagging and the excavation, they shall be provided with fall protection.
c. If the excavation does not meet the requirements for either Class I or Class II perimeter protection, then Class III perimeter protection is the minimum protection required. All wells, pits, shafts, etc., shall be barricaded or covered.
Excavations shall be backfilled as soon as possible. Upon completion of exploration and similar operations, test pits, temporary wells, calyx holes, etc., shall be backfilled immediately.
Walkways or bridges shall be provided with standard guardrails where people or equipment are required or permitted to cross over excavations.
Where personnel are required to enter excavations/trenches over 4 ft (1.2 m) in depth, sufficient stairs, ramps, or ladders shall be provided to require no more than 25 ft (7.6 m) of lateral travel.
a. At least two means of exit shall be provided for personnel working in excavations. Where the width of the excavation exceeds 100 ft (30.4 m), two or more means of exit shall be provided on each side of the excavation.
b. When access to excavations more than 20 ft (6 m) in depth is required, ramps, stairs, or mechanical personnel hoists shall be provided.

Ramps
a. Ramps used solely for personnel access shall be a minimum width of 4 ft (1.2 m) and provided with standard guardrails.
b. Ramps used for equipment access shall be a minimum width of 12 ft (3.6 m). Curbs not less than 8-in x 8-in (20.3-cm x 20.3-cm) timbers, or equivalent protection, shall be provided. Equipment ramps shall be designed and constructed in accordance with accepted engineering practice.

Ladders used as access ways shall extend from the bottom of the excavation to not less than 3 ft (0.9 m) above the surface.

SLOPING AND BENCHING.
Sloping or benching of the ground shall be in accordance with one of the systems outlined in a through d below as per OSHA (*29 CFR 1926, Subpart P, Appendix B)*
a. For excavations less than 20 ft (6 m) in depth, the maximum slope shall be 34° measured from the horizontal (1-1/2 horizontal to 1 vertical).
b. All excavations less than 20 ft (6m) in depth which have vertically lowered portions shall be shielded or supported to a height at least 18 in (.5 m) above the top of the vertical side with a maximum allowable slope of 1-1/2:1.
c. The design shall be selected from and be in accordance with written tabulated data, such as charts and tables approved by an RPE. At least one copy of the tabulated data shall be maintained at the job site during excavation. The tabulated data shall include:
(1) Identification of the parameters that affect the selection of a sloping or benching system drawn from the data.
(2) Identification of the limits of use of the data, to include the magnitude and configuration of slopes determined to be safe.
(3) Explanatory information as may be necessary to aid the user in correctly selecting a protective system from the data; and
(4) The identity of the RPE who approved the data.
d. The sloping or benching system shall be designed by an RPE. At least one copy of the design shall be maintained at the job site during excavation. Designs shall be in writing and include:

(1) The magnitudes and configurations of the slopes that were determined to be safe for the excavation, and
(2) The identity of the RPE who approved the design.

SUPPORT SYSTEMS

Support systems shall be in accordance with one of the systems outlined in a through c below:

a. Designs drawn from manufacturer's tabulated data shall be in accordance with all specifications, limitations, and recommendations issued or made by the manufacturer.

(1) Deviation from the specifications, recommendations, and limitations are only allowed after the manufacturer issues specific written approval.

(2) A copy of the manufacturer's specifications, recommendations, and limitations (and the manufacturer's approval to deviate from these, if required) shall be in written form and maintained at the job site during excavation.

b. Designs shall be selected from and be in accordance with tabulated data (such as tables and charts). At least one copy of the tabulated data shall be maintained at the job site during excavation. The tabulated data shall include:

(1) Identification of the parameters that affect the selection of the protective system drawn from such data,

(2) Identification of the limits of use of the data, and

(3) Explanatory information as may be necessary to aid the user in correctly selecting a protective system from the data, and

(4) The identity of the RPE who approved the data.

c. Designed by an RPE. At least one copy of the design shall be maintained at the job site during excavation. Designs shall be in writing and include:

(1) A plan indicating the sizes, types, and configurations of the materials to be used in the protective system, and

(2) The identity of the RPE who approved the design.

Materials and equipment used for protective systems.

a. Materials and equipment shall be free from damage or defects that might impair their proper function.

b. Manufactured materials and equipment shall be used and maintained in a manner consistent with the recommendations of the manufacturer and in a manner that will prevent employee exposure to hazards.

c. When material or equipment is damaged, a Competent
Person shall examine the material or equipment and evaluate its suitability for continued use.

Support Systems

a. Members of support systems shall be securely connected together to prevent sliding, falling, kick outs, or other predictable failure.

b. Support systems shall be installed and removed in manners that protect employees from cave-ins, structural collapses, or from being struck by members of the support system.

c. Individual members of a support system shall not be subjected to loads exceeding those for which they were designed to withstand.

d. Before temporary removal of individual members, additional precautions shall be taken to ensure the safety of employees, such as installing other structural members to carry the loads imposed on the support system.

e. Removal shall begin at and progress from the bottom of the excavation. Members shall be released slowly as to note any indication of possible failure of the remaining members or possible cave-in of the sides of the excavation.

f. Backfilling shall progress together with the removal of support systems from excavations.

g. For trench excavations: excavation material shall be permitted to a level not greater than 2 ft (.6 m) below the bottom of the members of a support system, only if the system is designed to resist the forces calculated for the full depth of the trench, and there is no indication while the trench is open of a possible loss of soil from behind or below the bottom of the support system.

Shield systems.
a. Shield systems shall not be subjected to loads exceeding those that the system was designed to withstand.
b. Shields shall be installed in a manner to restrict lateral or other hazardous movement of the shield in the event of the application of sudden lateral loads.
c. Employees shall be protected from the hazard of cave-ins when entering or exiting the area protected by shields.
d. Employees shall not be allowed in shields when shields are being installed, removed, or moved vertically.
e. For shield systems used in trench excavations: excavations of earth material to a level not greater than 2 ft (.6 m) below the bottom of the shield shall be permitted, only if the shield is designed to resist the forces calculated for the full depth of the trench, and there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the shield.

Additional requirements for trenching.
a. Installation of support systems shall be closely coordinated with excavations of trenches.
b. Bracing or shoring of trenches shall be carried along with the excavation.
c. Backfilling and removal of trench supports should progress together from the bottom of the trench. Jacks or braces shall be released slowly, and, in unstable soil, ropes shall be used to pull out the jacks or braces from above after personnel have cleared
the trench.
d. Excavation of material to a level no greater than 2 ft (0.6 m) below the bottom of the members of a trench support system (including a shield) shall be permitted, only if the system is designed to resist the forces calculated for the full depth of the trench and there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the support system.

COFFERDAMS
1. If over topping of the cofferdams by high water is possible, design shall include provisions for controlled flooding of the work area.
2. If personnel or equipment are required or permitted on cofferdams, standard railings, or equivalent protection, shall be provided.
3. Walkways, bridges, or ramps with at least two means of rapid exit, with standard guardrails, shall be provided for personnel and equipment working on cofferdams.
4. A plan (including warning signals) for evacuation of personnel and equipment in case of emergency and for controlled flooding shall be developed and posted.
5. Cofferdams located close to navigable shipping channels shall be protected from vessels in transit.

SOIL CLASSIFICATION

Soil Type Criteria Other Considerations
Natural solid mineral that can be excavated with vertical sides and remain intact while exposed.

Stable Rock
Type A
Cann**ot** be Type A if soil is:
1) fissured.
2) subject to vibration from heavy traffic, pile driving, etc.
3) previously disturbed.
4) part of sloped, layered system where layers dip into excavation on a slope of 4H:1V or greater; or
5) subject to other factors requiring it to be classified as less stable material. Cohesive soil with an unconfined compressive strength of 1.5 tons per square foot (tsf) or greater.

Type B
Cohesive soil with an unconfined compressive strength greater than 0.5 tsf (48 kPa) but less than 1.5 tsf (144 kPa).
Type B soil can also be:
1) granular cohesionless soils such as angular gravel, silt, silt loam, sandy loam, and in some cases, silty clay loam and sandy clay loam.
2) previously disturbed soils except those which would otherwise be classed as Type C soil.
3) soil that meets the requirements of Type A, but is fissured or subject to vibration; 4) dry rock that is not stable; or
5) part of sloped, layered system where layers dip into excavation on a slope of 4H:1V, but only if the soil would otherwise be classed as Type A.

Type C
Cohesive soil with an unconfined compressive strength of 0.5 tsf (48 kPa) or less.
Type C soil can also be:
1) granular soils including gravel, sand, and loamy sand.
2) submerged soil or soil from which water is freely seeping.
3) submerged rock that is not stable; or
4) part of sloped, layered system where layers dip into excavation on a slope of 4H:1V or steeper.

Peterson Contractors, Inc.		
Job Safety Analysis	**Activity Description:** Drilling various diameter holes to specified depth	
	Required Equipment: Mobile Ram or Excavator	
Principal Activity Steps	**Potential Hazards**	**Recommended or Required Controls**
Move onto site - unload from trailer, track to start location.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.
Excavator operations	Swing radius of excavator boom and counterweights	Barricade counterweight and boom radius with cones
	Open excavation	Operators, supervisors, and other personnel must watch for unauthorized persons Set up barricade fence or caution tape as is appropriate.
	Ingress and egress of haul trucks	Ensure haul trucks approached and depart from specific direction. Rotate excavator boom in opposite direction of haul truck routes.
	Spectators	Operators, supervisors, and other personnel must watch for unauthorized persons in or approaching operational areas.

Fall Protection Policy

Work activities where employees may be exposed to falls and falling objects shall be conducted safely with associated exposures eliminated and/or controlled.

2.0 Purpose

To ensure that employees are protected from the hazards associated falls and falling objects.

3.0 Scope

Applies to all Peterson Contractors Inc. work sites where construction activities involve exposure to heights greater than or equal to six (6) feet and/or falling objects exist. In general industry (e.g., service/repair/maintenance, shops, warehouses, cleaning, etc.) exposure to heights greater than or equal to four (4) feet shall be in place of all references to the construction six (6) foot reference.

4.0 Definitions

Anchorage means a secure point of attachment for lifelines, lanyards, or deceleration devices that can support 5,000 lbs. per employee or two times the intended impact load, whichever is greater, or for a positioning system, 3,000 lbs. without failure.

Aerial Personnel Lifts (reference Aerial Lift Section of Safety Program)

Approved means, for the purpose of this section, authorized by the Business Unit Safety Coordinator, tested, and certified by the manufacturer or any recognized national testing laboratory to possess the strength requirements specified in this section.

Centenary Line – see **Horizontal Lifeline**.

Competent Person means an individual knowledgeable (through experience and/or training) of fall protection equipment, including the manufacturer's recommendations and instructions for the proper use, inspection, and maintenance; who is capable of identifying existing and potential fall hazards; who has the authority to take prompt corrective action to eliminate those hazards; and who is knowledgeable of the rules contained in this section regarding the erection, use, inspection, and maintenance of fall protection equipment and systems.

Controlled Access Zone means an area in which certain work may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems and access to the zone is controlled.

Deceleration Device means a device manufactured (fall) shock-absorbing device whereby the forces of the fall are rapidly reduced to meet acceptable levels.

Drop Line means a vertical lifeline secured to an upper anchorage for the purpose of

attaching a lanyard or device.

Employee means every laborer regardless of title or contractual relationship.

Fall Arrest System (Personal) means the use of multiple, approved safety equipment components such as body harnesses, shock absorbing lanyards, deceleration devices, droplines, horizontal and/or vertical lifelines and anchorages, interconnected and rigged to one's body as to arrest a free fall.

Fall Protection Work Plan means a written planning document in which the employer identifies all areas in the work area where a fall hazard of 6 feet or greater exists, whereby conventional Fall Restraint and Fall Arrest Systems cannot be utilized.

Fall Restraint System means an approved device and any necessary components that function together to restrain an employee in such a manner as to prevent that employee from falling to a lower level.

Fall Distance means the actual distance from the employee's work platform (area) to the level where a fall would stop (ground level or otherwise).

Full Body Harness means a configuration of connection straps to distribute a fall arresting force over at least the thighs, shoulders, and pelvis, with provisions for attaching a lanyard, lifeline, positioning rings, or deceleration devices.

Full Body Harness System means a Class III full body harness and shock absorbing lanyard attached to an anchorage or attached to a horizontal or vertical lifeline which is properly secured to an anchorage(s) capable of withstanding the forces specified in the applicable sections.

Hardware means snap hooks, D-rings, buckles, carabiniers, and adjusters used to attach the components of a fall protection system together.

Holes (floor, roof or walking surface) means any opening in the floor greater than two inches whereby falling objects or an employee fall of greater than six foot is possible.

Holes (wall) – see Wall Opening.

Horizontal Lifeline means a rail, rope, or synthetic cable installed in a horizontal plane between two anchorages and used for attachment of an employee's lanyard or lifeline device while moving horizontally.

Lanyard means a flexible line of webbing, rope, or cable (usually in two-, four- or six-foot lengths) used to secure a harness to a lifeline or an anchorage point.

Leading Edge means the advancing edge of a floor or roof, where a fall of more than six foot is possible to the ground or to another level.

Lifeline (vertical or horizontal) means a vertical line from a fixed overhead anchorage or horizontal line between two horizontal anchorages, independent of walking or working surfaces, to which a lanyard or device is secured.

Restraint Line means a line from a fixed anchorage or between two anchorages to which an employee is secured in such a way as to restrict the employee from reaching a point where falling to a lower level is possible.

Safety Line – see Lifeline.

Shock Absorbing Lanyard means a flexible line of webbing or rope used to secure a harness to a lifeline or anchorage point that has an integral shock absorber of either a rip-stitch or retractable configuration.

Snap hook – means a 'locking' hook at the end of a lanyard or restraining/positioning line that has a double-action locking mechanism intended to eliminate unintentional unhooking from the D-ring of a body harness. Non- locking snap hooks are prohibited.

Standard Guardrail means a top rail at 42 inches high (plus or minus three inches), a mid-rail installed midway the top edge of the guardrail system and the surface.

Static Line – see Lifeline.

Toe board means a barrier at the base of the guardrail system to prevent material and objects from falling off the surface. They are at least four (4) inches of nominal height with no less than one (1) inch clearance from the surface.

Unprotected Sides and Edges means any side or edge (except at entrances to points of access) of a floor, roof, ramp, or runway where there is no wall or guardrail system.

Walking/Working Surface means for the purpose of this section, any area whose dimensions are 45 inches or greater in all directions through which employees pass or conduct work and can include scaffolding and aerial lifts regardless of surface dimensions.

Wall Opening means a gap in a wall where the outside bottom edge is 6 feet or more above lower levels, and the inside bottom edge (e.g., parapet wall) is less than 39 inches above the walking/working surface.

Work Area means that portion of a walking/working surface where work activities are being performed.

5.1 Requirements

5.1 Training

Fall Protection training formats and requirements shall include:

- New employees will be oriented to the Peterson Contractors Inc. Fall Protection Program (and any local addendums) as part of the 'new employee orientation program'.

- Thereafter, every foresee ably exposed employee will be trained

annually, with training duration of not less than one hour, and include the following:

- The nature of fall hazards in the typical work area
- The correct procedures for erecting, maintaining, disassembling, and inspecting fall protection systems
- The use and operation of conventional and non-conventional fall protection systems
- The role of each employee in the safety monitoring system when such a system is in use
- The limitations on the use of mechanical equipment during the performance of roofing work on low-slope roofs
- The correct procedures for equipment and materials handling and storage, and the erection of overhead protection
- The correct fit, maintenance and use of all (personal) fall arrest system components, as determined by the manufacturer(s)
- Rescue procedures in the event an individual falls
- All other details in this section (and local addendums)

Toolbox talks for related issues of this manual section shall be covered periodically.

Any employee who has not received orientation or annual training (as previously outlined) shall not be allowed to work at heights identified by this section.

5.2 Conventional Fall Arrest and Fall Restraints Systems shall be utilized where the exposure to falls greater than 6 foot and from falling objects is reasonably foreseen. The following systems shall be utilized:

5.2.1 Guardrail System (fall restraint and potentially from falling objects)

Top rails and mid rails of guardrail systems constructed of wood shall be at least ¼-inch diameter or thickness to prevent cuts and lacerations.

If wire rope is used for top rails, it shall be flagged at not more 6 feet intervals with high-visibility material. Steel and plastic banding are prohibited for use as top rails or mid rails.

The top edge height of top rails, or (equivalent) guardrails shall be 42

inches, plus or minus 3 inches, above the walking/working level.

When employees are using ladders in distance proximity equivalent to the maximum use-length of the ladder, the top edge height of the top rail, or equivalent member, shall be increased an amount equal to the maximum use-length height of the ladder, or see Special Control Procedures (5.4.5) portion (for ladders) of this manual section for other options.

Screens, mid rails, mesh, intermediate vertical members, or equivalent intermediate structural members shall be installed between the top edge of the guardrail system and the walking/working surface when there are no walls or parapet walls at least 21 inches high. When mid rails are used, they shall be installed at a height midway between the top edge of the guardrail system and the walking/working level. When screens and mesh are used, they shall extend from the top rail to the walking/working level. Intermediate members, such as balusters, when used between posts, will not be more than 19 inches apart.

The guardrail system shall be capable of withstanding a force of at least 200 pounds of force applied within 2 inches of the top edge in any outward or downward direction. When the 200 pounds is applied in a downward direction, the top edge of the guardrail shall not deflect to a height less than 39 inches above the walking/working level.

Mid rails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members will be capable of withstanding a force of at least 150 pounds of force applied in any downward or outward direction at any point along the mid rail or other member.

Guardrail systems shall be free of sharp edges and burrs to protect against punctures or lacerations and to prevent clothing from snagging.

The ends of top rails and mid rails shall not overhang terminal posts, except where such an overhang does not constitute a projection hazard.

When guardrail systems are used at hoisting areas, a chain, gate, or removable guardrail section shall be placed across the access opening between guardrail sections when hoisting operations are not taking place.

At uncovered holes, guardrail systems shall be set up on all unprotected sides or edges. When holes are used for the passage of materials, the hole shall have not more than two sides with removable guardrail sections. When the hole is not in use, it shall be covered or provided with guardrails along all unprotected sides/edges.

If guardrail systems are used around uncovered holes that are used as access points (such as ladder ways), gates shall be used, or the guardrail shall be offset at a 45-degree angle to prevent accidental walking into the hole. Toe boards shall be utilized around the edges not utilized as the

actual access point.

If guardrails are used at unprotected sides or edges of ramps and runways, they shall be erected on each unprotected side/edge.

When guardrail systems, in combination with netting, is used to prevent materials from falling from one level to another, openings shall be small enough to prevent passage of potential falling objects.

5.2.2 Covers for holes (fall restraint and from falling objects)

Covers (or a guardrail system with toe boards…see Guardrail Systems within this section) shall be installed over holes in floors, roofs and walkways that are more than 6 feet above lower levels.

Hole covering material shall support at least two times the potential weight that will cross over it. If plywood is chosen as the cover material, it shall be of at least ¾ inch in thickness.

All hole covers shall be secured in place in such a manner as to not easily be displaced. Examples of securing methods include, but are not limited to nailing, attached cleats, wire, etc.

Such covers shall have the word 'HOLE' or 'COVER' predominately marked on the top surface. Where covers are too small for such marking, they shall be painted or significantly marked in orange.

5.2.3 Restraining/Positioning System (fall restraint)

Only full body harness systems with positioning rings are to be utilized with any Restraining/Positioning system.

Restraint line (rope) length shall not exceed the distance to fall exposure and shall be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3,000 pounds, whichever is greater.

Requirements for body harness systems, snap hooks, D-rings, and other connectors used with positioning device systems shall meet the same criteria as those for fall arrest systems (5.2.4) of this section.

Body belts are prohibited.

5.2.4 (Personal) Fall Arrest System (fall arrest)

(Personal) Fall Arrest Systems shall do all of the following:

- Limit maximum arresting force on an employee to 1,800 pounds. Note:

total body weight including tools cannot exceed 310 lbs. to stay under arresting force limit

- Be rigged so that an employee can neither free fall more than 6 feet nor contact any lower level
- Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet
- Have sufficient strength to withstand 5000 lbs. (excluding horizontal lifelines which require a safety factor of at least two times the potential impact energy)
- All components of the (personal) fall arrest system (lanyards, body harness and attached hardware, and shock-absorbing devices) shall meet the design specifications of OSHA 1926.502 Subpart M

The following items/actions are prohibited for use with (personal) fall arrest systems:

- body belts
- non-locking snap hooks
- lanyards without shock absorbers
- tying back to the lanyard (once around another object) for a means of an anchorage point, unless the lanyard was designed for this purpose by the manufacturer, the object tied around can support the anticipated fall force and the object does not have sharp edges or burrs

5.2.5 (Personal) fall arrest systems shall be utilized in the following manner:

5.2.5.1 Pre-Use Inspection

All components shall be inspected prior to each use for wear damage, and other deterioration (see equipment inspection and maintenance procedures of this section).

5.2.5.2 General Proper Body Harness Fit Guidelines (two employees are usually required to completely fit each other)

The body harness type and size shall meet the physical needs of

its user (male/female or small, medium, large, etc.).

Follow the manufacturer's guidelines on proper fit.

Shoulder, thigh, button, and chest straps shall be fit snugly whereas it is slightly difficult to slide the hand underneath.

All loose straps end shall be folded back under.

D-ring placement should be between the shoulder-blades. Chest

straps should be positioned across the mid-chest area.

5.2.5.3 Sufficient Anchorage Points Utilized

Anchorages shall be used under the supervision of a competent person, as part of a complete (personal) fall arrest system that maintains a safety factor of at least two

(i.e., capable of supporting at least twice the weight expected to be imposed upon it).

Anchorages used to attach (personal) fall arrest systems will be independent of any anchorage being used to support or suspend platforms and shall be capable of supporting at least 5,000 pounds of force per person attached.

Anchorage points can include:

- Lifelines (horizontal and vertical)
- Designed anchorage points on aerial lifts
- Eyebolts listed for use by the manufacturer
- Specially designed anchorage tools specifically designed to meet fall force requirements, including:
  - Wrap-around lanyards as approved by the manufacturer
  - I-beam clamps designed specifically as an anchorage point

Prohibited anchorage points include, but are not limited to:

- Standard guardrails and railing
- Ladders/rungs

- Scaffolding, unless approved by the manufacturer for/with anchorage points
- Light fixtures, ductwork, conduit, pipe vents, wiring/duct/piping harnesses, other roof stacks, vents, or fans
- C-clamps
- Piping (unless capable of meeting the criteria of an anchorage point)
- To a lanyard (around a solid object), unless the lanyard and hardware is manufactured for that purpose

5.2.5.4 Lifeline/Lanyard Applications

6 Lanyards shall only be attached to anchorage points sufficient to meet the fall force requirements.

7 Shock-absorbing lanyards are required to limit the fall force to less than 1800 pounds.

8 Self-retracting lanyards (retractable) capable of withstanding the tensile load of 3,000 lbs. that limit the free fall distance to two (2) feet or less are required when the fall distance is less than nineteen and one-half (19.5) feet.

9 Lanyards that do not limit free fall distance to 2 feet or less, such as rip stitch lanyards and tearing/deforming lanyards will be capable of sustaining a minimum tensile load of 5,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.

10 Horizontal lifelines will be designed, installed, and used under the supervision of a Competent Person, as part of a complete (personal) fall arrest system. Lifelines shall be protected against being cut or abraded. Horizontal lifelines cannot exceed sixty feet in length.

11 Vertical lifelines shall be utilized with leading edge work, shall reach the ground, and the method of anchorage attachment shall be of proper design (i.e., no knots).

12 5.2.6 Safety Net System (fall arrest and potentially from falling objects)

13

14 When utilized, safety nets shall be installed as close as practicable under the walking/working surface on which employees are working and never more than 30 feet below such levels.

15 Safety nets will be inspected at least once a week for wear, damage, and other deterioration. The maximum size of each safety net mesh opening will not exceed 36 square inches nor be longer than 6 inches on any side, and the openings, measured center-to-center, of mesh ropes or webbing, will not exceed 6 inches.

16 Defective/unfit nets are not to be used and are to be taken from service and immediately destroyed by cutting into unusual sizes and properly disposed.

17 All mesh crossings will be secured to prevent enlargement of the mesh opening. Each safety net or section will have a border rope for

webbing with a minimum breaking strength of 5,000 pounds. Connections between safety net panels will be as strong as integral net components and be spaced no more than 6 inches apart.

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 surface.	Minimum required horizontal distance of outer edge of net from edge of working surface.
Up to 5 feet	8 feet
More than 5 feet up to10 feet	10 feet
More than 10 feet	13 feet

Safety nets shall be tested at the beginning of each workday and shall be capable of absorbing an impact force of a drop test consisting of a 400-pound bag of sand 30 inches in diameter dropped from the highest walking/working surface at which workers are exposed, but not from less

than 42 inches above that level. Employees shall not be allowed in work areas controlled with safety nets until this test is complete.

If safety nets are utilized for the dual purpose of employee fall protection and the protection of other workers from fall objects, the net webbing opening shall be small enough to prevent passage of potential falling objects.

Items that have fallen into safety nets, such as materials, scrap, equipment, and tools, shall be removed as soon as possible and at least before the next work shift.

5.3 Where conventional fall restraint and fall arrest methods cannot be utilized (or utilized safely), the following non-conventional methods can be utilized

A written work plan shall be developed when a project or task possesses a fall exposure whereby these systems are utilized. A sample written plan format can be found in 29 CFR 1926 Subpart M Appendix E.

A Competent Person will develop and implement a written Fall Protection Work Plan including each area of the workplace where the employees are assigned and where fall hazards of 6 feet or more will exist. The Risk Assessment for this project/task should be reviewed for this document.

The written Fall Protection Work Plan shall include:

- Identification of all fall hazards in the work area
- Describe the non-conventional method (or in combination with conventional method) of fall protection to be provided
- Describe the correct procedures for the assembly, maintenance, inspection, and disassembly of any fall protection system to be used
- Describe the correct procedures for the handling, storage, and securing of tools and materials
- Describe the method of providing overhead protection for workers who may be in or pass through the area below the work site
- Describe the method for prompt, safe removal of injured workers
- Describe the method for destruction of personal fall arrest system equipment subjected to the forces of any fall
- Be always available on the jobsite

5.3.1 Controlled Access Zone System

Controlled access zone systems shall be set up as follows:

- Zone shall be established no closer than six (6) feet or further than twenty-five (25) feet from any leading edge
- Control line shall extend parallel along the entire length of the unprotected or leading edge
- Only trained employees are allowed in the Zone
- The Zone shall have signage marking it as a 'Controlled Access Zone'

5.3.2 Warning Line System (pitches of ≤4:12 and flat surfaces only)

Warning line systems consist of ropes, wires, or chains, and supporting stanchions and are set up as follows:

- Flagged at not more than 6-foot intervals with high-visibility material
- Rigged and supported so that the lowest point including sag 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, will 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 will have a minimum tensile strength of 500 pounds, and after being attached to the stanchions, shall support without breaking the load applied to the stanchions as prescribed above
- Line will be attached to each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in the adjacent section before the stanchion tips over
- Warning lines will be erected around all sides of roof work areas. When mechanical equipment is being used, the warning line will 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 shall be erected not less than 6 feet from the roof edge.

The warning line system shall be used in conjunction with one of the following:

- safety monitoring system (most common); or
- (personal) fall arrest system; or
- safety net system; or
- guardrails

5.3.3 Safety Monitoring System

A competent person will appoint the 'safety monitor' and will ensure that the safety monitor:

Is competent in the recognition of fall hazards

- Is capable of warning workers of fall hazard dangers and in detecting unsafe work practices
- Is operating on the same walking/working surfaces of the employees and can see them
- Is close enough to work operations to communicate orally with the employees and has no other duties but the monitoring function
- Has the authority to stop work

Only employees engaged in roof/surface work and the safety monitor shall be allowed in an area where an employee is being protected by a safety monitoring system.

5.4 Specific Fall Hazard Procedures

5.4.1 Aerial Personnel Lifts

Employees utilizing aerial personnel lifts (e.g., scissor lifts, genie lifts, cherry-pickers, boom-lifts, etc.) shall use a restraint/positioning system or (personal) fall arrest system, even though a guardrail system is in place.

Attachment points for these systems shall be capable of withstanding 5,000 pounds and shall be maintained in the floor of the lift or where designed by the manufacturer.

Rails of such lifts shall not to be used as attachment points unless designed for that purpose by the manufacturer.

5.4.2 Excavations

Employees who work at the edge of an excavation 6 feet or more deep will be protected from falling into the excavation by guardrail systems or covers.

Where walkways are provided to permit employees to cross over excavations, guardrails are required on the walkway if the fall would be 6 feet or more to the lower level.

5.4.3 Hoist Areas

Each employee in a hoist area will be protected from falling 6 feet or more by guardrail, restraint/positioning or (personal) fall arrest systems.

If guardrail systems (or chain gate or guardrail), or portions thereof, must be removed to facilitate hoisting operations, as during the landing of materials, and a worker shall lean through the access opening or out over the edge of the access opening to receive or guide equipment and materials, that employee shall be protected by a (personal) fall arrest system.

5.4.4 Falling Objects (additional protection from)

Except for scaffolding and aerial lifts, no materials or equipment shall be stored within 6 feet of working edges.

When canopies are used as protection from falling objects, canopies shall be strong enough to prevent collapse and to prevent penetration by any objects that may fall onto them.

When toe boards are used as protection from falling objects, they shall be erected along the edges of the overhead walking or working surface for a distance sufficient to protect persons working below. Toe boards will be capable of withstanding a force of at least 50 pounds of force applied in any downward or outward direction at any point along the toe board. Toe boards will be a minimum of four (4) inches tall from their top edge to the level of the walking/working surface, have no more than one (1) inch clearance between its bottom and the surface.

5.4.5 Ladders (where work height (due to leaning out) exposure exceeds six foot and/or the maximum ladder height is within the distance to a leading edge)

(Personal) Fall Arrest Systems should be utilized as anchorage points are available.

If anchorage points are not available or other traditional fall control systems are not feasible, a non-conventional system can be utilized (see

5.3 of this manual section).

5.4.5.1 Leading Edge Work

Employees working near a leading edge 6 feet or more above lower levels shall be protected by guardrail, safety net, restraint/positioning, or (personal) fall arrest systems. If these systems are not feasible the systems under 5.3 of this manual section can be utilized.

5.4.6 Roadway/Vehicular Passage Covers

Covers located in roadways and vehicular aisles shall be able to support at least twice the maximum axle load of the largest vehicle to which the cover might be subjected and secured/marked as indicated in 5.2.2 of this manual section.

5.4.7 Roofs (work from or on)

5.4.7.1 Low-sloped (<4:12 pitch)

Employees engaged in roof activities on low-slope roofs with unprotected sides and edges 6 feet or more above lower levels will be protected from falling by guardrail systems, safety net systems, (personal) fall arrest systems or a combination of a warning line system and guard-rail system, warning line system and safety net system, warning line system and (personal) fall arrest system, or warning line system and safety monitoring system.

5.4.7.2 Steep Roofs (>4:12 pitch)

Employees on a steep roof with unprotected sides and edges 6 feet or more above lower levels will be protected by either guardrail systems with toe boards, a safety net system, or a (personal) fall arrest systems.

5.4.8 Wall Openings

Employee working on, at, above, or near wall openings (including those with chutes attached) shall be protected from falling by the use of either a guardrail system, a safety net system, or a (personal) fall arrest system.

5.5 Equipment Inspection and Maintenance Procedures

5.5.1 Inspection, Replacement and Destruction

All equipment hereafter noted shall be visually inspected before each use,

replaced immediately if any of the defective conditions are found, tagged ‘out of service’ and sent back to the central tool room for destruction.

5.5.2 Body Harness Inspection

Beginning at one end, holding the body side of the harness toward you, grasp one area of the harness with your hands six to eight inches apart. Bend the strap in an inverted “U”. Follow this procedure the entire length of the belt or harness. Watch for frayed edges, broken fibers, pulled stitches, cuts, burn marks or chemical damage. Special attention should be given to the attachment of buckles and D-rings to strap webbing. Inspect for frayed or broken strands. Broken webbing strands generally appear as tufts on the webbing surface.

Rivets should be tight and unmovable with fingers. Body-side rivet base and outside rivet burr should be flat against the material. Bent rivets will fail under stress. Especially note condition of D-ring rivets and D-ring metal wear pads (if applicable). Discolored, pitted, or cracked rivets indicate chemical corrosion.

The tongue or billet of bolts receives heavy wear from repeated buckling and unbuckling. Inspect for loose, distorted, or broken grommets. Harnesses using punched holes without grommets should be checked for torn or elongated holes causing slippage of the tongue buckle.

5.5.3 Hardware (Buckles, D-Rings, Snaps and Thimbles)

Buckle tongues should be free of distortion in shape and motion. They should overlap the buckle frame and move freely back and forth in their socket. Roller should turn freely on frame. Check for distortion or sharp edges.

Inspect the friction buckle for distortion. The outer bars and center bars must be straight. Pay special attention to corners and attachment points of the center bar.

Inspect the sliding bar buckle frame and sliding bar for cracks, distortion, or sharp edges. The sliding bar should move freely. Knurled edge will slip if worn smooth. Pay special attention to corners and ends of sliding bar.

Inspect the forged steel D-ring for cracks or other defects. Inspect the assembly of the D-ring to the body pad or D-saddle. If the D-ring can be moved vertically independent of the body pad or D-saddle, the harness should be replaced. Check D-Rings and D-Ring metal wear pad (if any) for distortion, cracks, breaks, and rough or sharp edges. The D-Ring bar should be at a 90-degree angle with the long axis of the belt and should pivot freely.

Inspect closely for hook and eye distortions, cracks, corrosion, or pitted surfaces. The keeper (latch) should seal into the nose without binding and

should not be distorted or obstructed. The keeper spring should exert sufficient force to firmly close the keeper.

The thimble must be unmovable in the eyes of the splice, and the splice should have no loose or cut strands. The edges must be free of sharp edges, distortion, or cracks.

5.5.4 Lanyard (shock-absorbing)

Begin at one end and work to the opposite end. Slowly rotate the lanyard so the entire circumference is checked. Factory spliced ends require particular attention.

5.5.5 Lanyard (Webbing) Retractable

Bend the webbing over a non-lacerating edge; observe each side of the webbed lanyard. This will reveal any cuts or breaks. Swelling, discoloration, cracks, and charring are obvious signs of chemical or heat damage. Closely observe for any breaks in the stitching.

5.5.6 Rope

Rotation of the rope lanyard while inspecting from end to end will bring to light any fuzzy, worn, broken, or cut fibers. Areas weakened by extreme loads will appear as noticeable change in original diameter. The rope diameter should be uniform throughout, following a short break-in period. Strands should be separated and inspected since the rope may wear on the inside if grit or moisture becomes embedded.

5.5.7 Storage/Cleaning

Storage areas shall be maintained as clean, dry, and free of exposure to fumes or corrosive elements.

Cleaning methods established by the manufacturer shall be followed for all components. Generally, the following applies for body harnesses:

- Wipe off all surface dirt with a sponge dampened in plain water. Squeeze the sponge dry. Dip the sponge in a mild solution of water and commercial soap or detergent. Work up a thick lather with a vigorous back and forth motion.
- Wipe the belt dry with a clean cloth. Hang freely to dry but away from excessive heat.
- Bolts and other equipment should dry thoroughly without close exposure to heat, steam, or long periods of sunlight
- Mildly dirty cotton may be cleaned normally. For heavy dirt or

grease, soak belts in a solution of one tablespoon of grease cutter to one gallon of water. DO NOT USE A STRONGER SOLUTION. After soaking, rinse again, then hang to dry

- All fall protection, which is not in the original package, shall be stored in a clean, dry area

5.6 Post-Fall Incidents

All employees involved in a fall with a fall distance of over 6ft shall be required to receive an immediate medical evaluation

All components of a (personal) fall arrest system involved in any fall with a fall distance of over six feet shall be immediately and completely replaced. Such equipment shall be tagged ‘out of service’ and sent back to the central tool room for destruction.

All incidents involving a fall will be investigated by the supervisor and safety team and actions taken to prevent this from happening again.

PETERSON CONTRACTORS, INC.

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P.O. BOX A
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HEAVY & HIGHWAY CONTRACTORS

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Fatigue Management

The purpose of this policy is to establish the requirements for managing fatigue. It is intended that this policy will reduce the risk of fatigue-related injuries and incidents in the workplace.

SCOPE AND COVERAGE

This policy applies to all staff—especially those whose work involves shift work, extended hours, and on-call arrangements.

DEFINITIONS

Employee Assistance: The Employee Assistance Program (EAP) provides confidential counselling and support to staff and their families on a range of issues, such as alcohol and drug related problems, emotional stress, and relationship difficulties. It should not be used for counselling relating to an injury that is the subject of a workers' compensation claim or as post-incident counselling following a traumatic incident in the workplace. Refer to the EAP policy for further details.

Extended hours: Hours that are an extension of the standard working week, as a result of overtime, on-call arrangements, or secondary employment.

Fatigue: A mental or physical exhaustion that prevents a person from functioning normally. In the work environment this can mean that a person is also unable to function safely. It has many causes but is usually related to inadequate restorative sleep.

Restorative sleep: The process by which the body overcomes fatigue. It involves cycles of deep sleep that allow a person to recuperate and wake up refreshed.

Shift work: Work performed outside the hours between 0600 and 1800 hours, Monday to Friday.

Sleep cycles: Sleep cycles are determined by the body's natural biological rhythms (also known as circadian rhythms or the 'body clock'), which are repeated every 24 hours. As well as regulating sleep cycles, biological rhythms also regulate body temperature, digestion, and hormone levels.

POLICY STATEMENT

Peterson Contractors Inc. is committed to providing and maintaining safe systems of work for all its workers, including those whose work involves shifts work, extended hours, or on-call arrangements.

Peterson Contractors Inc. operations are sometimes undertaken outside ordinary working hours. Activities often involve extended hours and on-call arrangements. These working arrangements may contribute to fatigue if not managed appropriately.

Fatigue can be caused by both work and non-work-related factors. Non-work factors include family responsibilities, social activities, health issues—such as sleep disorders— study commitments and sporting commitments. Work factors include shift work— especially night shift— and working extended hours.

While everyone doesn't respond to fatigue in the same way, fatigue can cause reduced concentration, impaired coordination, compromised judgement and slower reaction times, which ultimately increase the risk of incidents and injuries.

RESPONSIBILITIES

Managers and workers of Peterson Contractors Inc. have a responsibility to ensure that fatigue does not impact the safety, health and well-being of themselves and others.

Managers and supervisors are responsible for:

1. Applying risk management in consultation with staff and in accordance with the fatigue risk management system.
2. Ensuring systems of work that minimize the risk of fatigue—for example, reasonable rosters, reasonable overtime practices and adequate recuperation between shifts.
3. Providing opportunities for workers to obtain adequate rest from work by limiting hours and/or controlling job rotation schedules.
4. Monitoring workloads, work patterns and rostering arrangements to ensure workers are not placed at risk from fatigue.
5. Consulting with workers when introducing shift work or new rostering systems.
6. Providing information, instruction, and training about risks to health, safety or welfare of workers involved with shift work, extended hours, and on-call arrangements.
7. Ensuring workers performing shift work are properly supervised and that tasks are undertaken safely and given adequate time for breaks/rest time.
8. Referring workers with non-work fatigue related issues to the EAP.
9. Providing ergonomic friendly equipment for employees to use during their shift.

Workers are responsible for:

1. Participating in risk management processes.
2. Using time off from work to recuperate to be fit and able for the next shift.
3. Participating in education and training to gain an understanding of fatigue during initial training and annually thereafter.
4. Avoiding behaviors and practices that contribute to fatigue and which could place themselves and others at risk—for example, secondary employment or not using time off work to recuperate.
5. Avoiding using chronically, over-the-counter medication, prescription medication and any other product that may affect the ability to perform work safely
6. Recognizing signs of fatigue that could place the health, safety and well-being of themselves or others at risk and reporting this to their manager or supervisor.

RESULTS OF BREACHES OF POLICY

Breaches of this policy and/or any of its associated procedures may result in disciplinary action being initiated in accordance with Peterson Contractors Inc. Discipline Policy.

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First Aid

Peterson Contractors requires all supervisors shall be trained in First Aid, CPR and Blood Borne Pathogens prior to initial duties and annually thereafter. Training materials from Red Cross are copy-write and include, but not limited to:

- The supervisor on each job site shall be certified in First Aid and CPR incompliance with the requirement to provide services in the absence of medical care that is not reasonably accessible.
- First Aid kits shall be found in each supervisor's pickup trucks and in each job site trailer. Kits are accessible to any employee at any time.
- All first aid kits shall be sized for or more than the number of employees on the job site. Contents will include, but not limited to typical first aid supplies such as band aids, antibiotic ointment, eye flush fluid packs, one way breather masks, gauze pads, adhesive tape, scissors, tweezers, and slings. Supplies will be individually packaged for one time use each.
- Supervisors and/or the Safety Officer will inspect each first aid kit monthly to insure proper and adequate supplies.
- Exposures which include, but not limited to blood and bodily fluids.
- Personal protective equipment, including, but not limited to protective gloves and 1-way breather masks.
- Vaccination requirements and availability.
- Proper personal protection.
- Isolation of the contaminated area.
- Proper clean up procedures.
- Proper hazardous material disposal.
- As PCI does not work with corrosive materials, simple eye wash kits are included in each first aid kit as a precaution.

Employees are trained on exposures and proper procedures during new hire orientation. The general employee populations are trained/retrained each year during the annual training day. This training includes, but is not limited to:

- Exposures which include, but not limited to blood and bodily fluids.
- Reporting requirements as the result of personal exposure.
- Proper personal protection.
- Isolation of the contaminated area.

Materials used for training shall be form the Red Cross First Aid and CPR training materials. Peterson Contractors has a minimum of two certified First Aid / CPR trainers on staff.

No two emergencies are the same. Each must be treated based on the circumstances that appear.

When an accident happens, employees are trained not to panic and contact the supervisor on the job site. Supervisors are trained in and certified in first aid and CPR. Stocked first aid kits in his truck and in most job trailers. The first person to arrive at the scene of an accident should:

- Survey the scene. Never enter an accident scene if it can't be done safely. Check for fire, falling objects, live electrical wires, etc. Do not enter excavations, pits, or questionable accident scenes.
- Stay calm, panic never helps anyone or anything.
- Contact 911 immediately for fires and/or severe personal injuries.
- Contact the site supervisor next. If the site supervisor is not available, contact the Safety Officer at 319-404-5334. The supervisor will determine the severity of the situation. For severe medical situations, an ambulance will be requested, and employees dispatched to direct the ambulance into the site. In minor cases, the supervisor will transport the injured employee to a company designated medical facility.
- In the rare event that employees are working around hazardous substances, quick drench procedures and facilities will be provided.
- Emergency action plan is included in the Safety Manual. Training for all employees on this manual shall be conducted annually.
- Send someone for help.
- Evacuate the area if necessary or if in doubt.
- In cases where a person is injured, keep the victim calm. Perform first aid only if you have been properly trained.
- Do not move the victim unless he/she is in immediate danger.
    - If you must move the victim, grab the victim's clothing at the shoulder, support the victim's head with your arms, and drag the victim to safety by their clothes.

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Monitor operation to ensure compliance with specifications and site safety

Required Equipment: Flagger

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Monitor excavations and earth moving operations. Perform labor practices as directed.	Contact with mechanized equipment	Have equipment operator's attention when approaching. Do not approach from the equipment operator's blind side. Be aware of moving equipment. All equipment has the right of way.
	Open excavations	Watch for and approach open excavations with caution. Barricade or use caution tape as is appropriate.
Traffic	Being hit by moving vehicles	Follow all DOT rules and regulations for flagging operations. Only trained and authorized personnel are allowed to flag Insure all barricades,

Peterson Contractors Incorporated

Fleet Safety Program

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Heavy Haul Truck Drivers APPENDICES

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1. Introduction

A. Purpose: To establish fleet policies and procedures that apply to all drivers of owned or leased Peterson Contractors Inc. vehicles and personally owned or leased vehicles used for PCI business.

B. Reason for Issuance: Peterson Contractors, Inc. has established a vehicle program and provides vehicles to eligible drivers for use in the performance of their assigned duties. It is our goal to provide employees with a reliable means of transportation while maintaining company image, safety, and comfort. This manual includes the terms and conditions upon which Peterson Contractors, Inc. will provide assigned company vehicles for employee's business use. Additionally, this manual includes specific rules for personally owned vehicles being used for PCI business purposes.

C. Vehicles Covered by this Policy:
   1. Company-owned vehicles.
   2. Leased vehicles.
   3. Rental/Pool vehicles.
   4. Personally owned or leased vehicles being used for PCI business purposes.

2. Fleet Administration

A. Primary Fleet Manager/Owner Responsibilities
   1. Selection and Acquisition of Vehicles
   2. Proper Replacement and Disposal of Vehicles
   3. Final Accident Resolution
   4. Approve established fleet policies and procedures for Company drivers.
   5. Record Keeping Systems

Peterson Contractors, Inc. owners and Safety Department shall determine driver and vehicle eligibility criteria and will assign vehicles that best fit the needs of PCI. Eligibility standards and vehicle assignments may be changed based on business need, cost, and availability.

Immediate managers of eligible drivers are responsible for approving appropriate vehicle operations, reviewing, and approving business travel and vehicle-related expenses, and ensuring that drivers comply with this policy.

B. Driver Responsibilities
   1. Become familiar with and follow the established PCI policies and procedures in this handbook.
   2. Obey all federal, state, and local laws.
   3. Operate the vehicle in a safe and courteous manner.

3. Rental and/or Other Available Vehicles

When traveling on business, cars and other PCI owned vehicles are available in some areas for use by all eligible PCI employees. Anyone requiring the use of an available vehicle must have a Company Vehicle Employee Agreement Form signed and on file with the Accounting Department.

In the event that a PCI owned vehicle is unavailable or does not meet the needs of the employee, outside rentals may be approved. When completing the rental agreement with the outside rental company, accept and sign for insurance coverage. PCI's vehicle insurance does cover employees and replacement of the rented vehicles but does not cover loss of use. It is important that all rental agreements be rented to, and on behalf of, Peterson Contractors, Inc.

4. Company Vehicle Eligibility

A. Company Owned Vehicle Use Agreement Form (Appendix A)

This agreement summarizes the terms, conditions, and responsibilities that all drivers must accept and acknowledge in regard to the operation of a PCI owned or leased vehicle. A completed copy of this agreement must be on file with the Accounting Department prior to the use of a PCI vehicle.

B. Minimum Mileage / Usage Requirements
To qualify for a PCI vehicle, an employee's job assignment must require that a major responsibility of his or her job assignment requires regular transportation or that being provided with a PCI vehicle is deemed necessary by PCI management.

5. Compliance with Federal, State and Local Government

Each driver must be familiar with and comply with all applicable federal, state, and local laws and regulations relating to the operation of a PCI vehicle. Each driver must also be familiar with and comply with all vehicle and safety regulations of PCI. Use of seat belts and any other safety restraint is required for all drivers and passengers.

A. Moving Violations, Traffic Violations and Parking Tickets
Fines from parking violations, speeding tickets and other moving violations are considered a "personal matter" and are the responsibility of the assigned driver or operator. These expenses should be settled immediately and are not reimbursable, even if the fines have resulted from business use. Vehicles should always be legally parked and the appropriate parking fees paid. If the company is forced to pay fines, late charges, or penalties because an employee does not fulfill his or her responsibility, PCI retains the right to collect reimbursement from the employee. If this occurs, PCI shall be reimbursed through a direct cash payment or by payroll deduction.

All moving violations shall be reported immediately to the driver's supervisor and reported to the corporate Safety Department within 24 hours of the citation. This reporting applies to all violations, whether personal or work related. Each driver must also specifically report to the corporate Safety Department within 24 hours, any instance in which he/she is arrested or charged with a motor vehicle violation. As a follow-up to charges, convictions of motor vehicle violations must also be reported to the corporate Safety Department within 24 hours.

B. Use and/or Transport of Alcohol & Illegal Substances
Peterson Contractors, Inc. prohibits the operation of a Company vehicle while possessing or under the influence of alcohol or controlled substances. Any failure to comply with this policy will result in disciplinary action up to, and including, immediate termination of employment. See the PCI Drug Free Workplace Program in your PCI handbook for details.

It is prohibited for any driver to use alcohol within a minimum of 4 hours of reporting for duty. On-call drivers shall abstain from alcohol consumption during scheduled on-call hours. Under no circumstances shall any person respond to work requests while under the influence of alcohol. Any driver carrying an operator's license or Commercial Driver's License (CDL) that reports for duty with a detected presence of alcohol will require a reasonable suspicion test as required under the Company policy for substance abuse.

C. Carrying of Weapons
PCI prohibits the carrying, transport, or storage of weapons in any Company vehicle or on the body of an employee/driver, with or without a permit to carry, unless specifically authorized by management. This includes guns, firearms, knives, bow & arrows, or explosive devices. Failure to comply with this policy may result in disciplinary action up to, and including, the termination of employment.

6. Business/Personal Usage

In accordance with the PCI Employment Policies and Procedures, PCI vehicle usage is limited to business use only, except for emergencies or if specifically authorized by management. See the Company Owned Vehicle Use Agreement (Appendix A) for details. Drivers are permitted to commute to and from work or as a result of being on call, or when an employee reports from their home directly to a temporary work site. Job-related errands are also permitted as required.

A. Under no circumstances shall Company vehicles be used for the towing of personal trailers, boats, recreational vehicles, or personal goods, nor shall they be used to pull or push another vehicle, trailer, or object, without permission from Company management. A violation of this policy may result in the loss of use of the Company issued vehicle or disciplinary action up to and including termination of employment.

B. Only assigned drivers and other authorized employees are permitted in PCI owned or leased vehicles. No other individual is authorized to operate a PCI vehicle. Family members, friends and other non-employees are strictly prohibited from using or riding in Company vehicles unless authorized by management. PCI strictly prohibits transporting hitchhikers or strangers. This policy is a requirement set forth by PCI's management and insurance carrier and shall be strictly adhered to.

7. Driver Qualifications

A. Driver's License Requirements

Every operator of any Peterson Contractors, Inc. vehicle must have and maintain a valid driver's license, CDL and/or medical card in the state of his/her residence. No person shall at any time have more than one driver's license. If a driver changes residence to another state, that driver has 30 days from establishment of their new domicile to obtain new driver's license. The driver is responsible for all expenses in acquiring and maintaining their license and driver medical card, including conformance with all state restrictions.

B. Driver Insurability and Eligibility

Peterson Contractors, Inc. will verify a potential employee's driving history prior to assignment of a Company vehicle. The prospective employee must sign the MVR release of information (Appendix E). An acceptable motor vehicle record (MVR) is required in order to be employable and insurable. A prospective employee must meet minimum driving requirements to be eligible for hire when driving is or could be one of their job responsibilities. Once driving privileges have been awarded, PCI will continue to verify a driver's MVR on a periodic basis.

PCI utilizes a third-party vendor to provide confidential motor vehicle reports. These reports are reviewed prior to hire and periodically throughout a driver's employment with the Company. PCI reviews at a minimum, a three-year history of motor vehicle reports including violations and convictions related to substance or alcohol abuse. Any violation or conviction resulting from driving under the influence of or illegal possession of alcohol or other controlled substances will be grounds for disqualification of a potential new driver.

C. Driver Ineligibility (Loss of Eligibility/Suspension of License)

1. Vehicle abuse or misuse (beyond normal wear & tear or unauthorized use). A driver is responsible for his equipment. Abuse of equipment will not be tolerated.
2. Failure to comply with applicable Company policies, regulations & instructions.
3. Conviction of operating a Company vehicle under the influence of drugs or alcohol.
4. Conviction for possession of a controlled substance.
5. Motor Vehicle Record (MVR) results insufficient to meet PCI standards.
6. Failure to comply with federal, state & local laws, including seatbelt violations.
7. Transfer to a position not eligible for a Company-provided vehicle.

Note: PCI reserves the right to determine eligibility for participation in the vehicle program and the right to revoke an employee's driving privileges at any time for any reason or for no reason.

D. Peterson Contractors, Inc. utilizes a point system to evaluate a driver's history fairly and impartially as presented on the MVR. The PCI Driver Evaluation Point System Table (Appendix D) is used to assign rating points based on the severity of a violation. Any applicant/driver who receives a rating of 5 to 8 may not be qualified. Pending violations must be documented at the time of hire. Any applicant/driver who receives a rating of 9 to 11 may not be qualified or may have restrictions placed on their driving authority. Any applicant/driver who receives a rating of 12 or more points shall not be qualified to operate PCI vehicles. <u>Not qualified means not allowed to drive a Company-owned or leased, or personal vehicle on behalf of PCI</u>.

The following criteria will be used in considering and determining an unacceptable MVR. This list is not meant to be complete or in any order of priority.

1. More than two (2) moving violations in the past three years
2. More than one at-fault accident (regardless of severity) plus two other moving violations in the past three years.
3. Any incidents involving a PCI owned or leased motor vehicle that is the fault of the driver.
4. More than one major at-fault accident or a major violation in the past three years. Major is defined as an accident involving bodily injury and/or property damage exceeding $2,500. A partial list of major violations includes:
   a. Leaving an accident scene
   b. Eluding or attempting to elude a Law Enforcement Official
   c. Participating in an unlawful speed or racing contest
   d Hit & run
   e. Vehicular homicide or assault with a vehicle
   f. Reckless driving
   g. Driving under the influence (including all alcohol and/or drug related violations)
   h. Refusing an alcohol test
   i. Operating 15 MPH or more over the posted limit
   j. Traffic violation involving a fatality
   k. Operating with a suspended or revoked license

5. Any current PCI employee convicted of an alcohol or controlled substance violation, who is employed by PCI as a driver shall be immediately disqualified from driving a Company owned or leased vehicle and will be subject to disciplinary action up to and including termination of employment. See current DOT regulations and the PCI Drug Free Workplace Policy for details.

8. Department of Transportation Compliance

A. Commercial Motor Vehicle (CMV) - A CMV is a motor vehicle or combination of motor vehicles that weigh(s) 10,000 pounds or more. Refer to Part 383 of the Federal Regulations.

B. In accordance with DOT Federal Motor Carrier Regulations, a person shall not drive a commercial motor vehicle unless he/she is qualified. To comply with the specified regulations, Peterson Contractors, Inc. requires that all DOT drivers meet the following minimum requirements:
   1. Be at least 21 years old.
   2. Read & speak the English language sufficiently to converse with general public, understand highway traffic signs & signals, to respond to official inquiries, and to make entries on reports and records.
   3. Has a valid commercial driver's license (CDL), with appropriate endorsements, issued only by one State or jurisdiction,
   4. Is not disqualified to drive a commercial motor vehicle.
   5. Has prepared and furnished PCI, the following documentation which will be kept in a confidential driver qualification file:
      a) Application for Employment, including having signed the Release of information form.
      b) Inquiry into the driver's employment and driving history, including
         - Inquiry to Past Employers for 10 years previous employment
         - Inquiry to Past Employers for 2 years previous Drug/Alcohol Results
         - Inquiry into driver's historical driving record
      c) Annual inquiry and review of driving record (MVR).
      d) Record of Violations - CDL drivers are required to disclose any moving violations on the annual Certification of Violations form, which is made a part of their permanent DOT record. Failure to report applicable violations will result in disciplinary action.
      e) Road Test & Certification of Road Test
      f) Physical Examination – Upon commencement of employment with PCI, the applicant/driver shall furnish PCI their bi-annual physical examination required to maintain

an additional Operator's License. Should the physical examination reveal any condition that would indicate the applicant or driver is unable to safely perform the duties of the position for which that person has been selected, it will be necessary to reconsider the driver's authorization to drive PCI equipment or application or offer of employment.

The physical condition of the driver must allow him/her to sufficiently perform their duties. A driver who is ill or fatigued will not be required or permitted to work. The use of any medication that would adversely affect the safe operation of a vehicle is prohibited.

C. Additional Operator's License requirements – Under DOT regulations, drivers who operate commercial motor vehicles are required to carry a Commercial Driver's License, depending upon the type of vehicle they are assigned.

CDL – Operators of commercial motor vehicles over 26,000 lbs. must have a valid CDL, current DOT certified physical, and all other driver qualification documents required to comply with the DOT CDL program. The driver must have any additional endorsements as required for the type of vehicle operated or cargo transported.

Drivers who carry these licenses must complete the necessary documents to comply with Federal Motor Carrier Safety Regulations. The corporate fleet department will maintain confidential individual driver files and will assist the driver to ensure that all proper DOT documentation is complete and remains current.

D. Driver Disqualification

Drivers who carry special operator's licenses, CDL are subject to all rules and regulations of driver qualification/disqualification as defined in the Federal Motor Carrier Safety Regulations. Drivers convicted of drug or alcohol-related traffic violations are automatically disqualified from driving under Federal DOT Regulations. Refusal to submit to a drug or alcohol test will be considered the same as a violation or conviction. The authority for revoking driving privileges is also responsible for restoring them, therefore, PCI can make no exceptions.

E. CDL Driver Controlled Substance & Alcohol Testing

All drivers who carry a CDL are required to comply with Federal DOT Regulation Part 382 – Controlled Substances and Alcohol Use and Testing. This includes pre-employment drug testing, random, reasonable suspicion, return to duty, and post-accident testing. Each driver will be informed about the program prior to hire and be required to complete the Driver training program explaining the testing requirements.

F. DOT Driver Post Accident Drug & Alcohol Testing

As soon as practicable following an accident involving a commercial motor vehicle operating on a public road in commerce, each surviving company driver shall be tested for alcohol and controlled substances if the following circumstances are met:

1. The driver was performing safety-sensitive functions with respect to the vehicle, if the accident involved the loss of human life; or
2. The driver receives a citation under state or local law for a moving traffic violation arising from the accident, if the accident involved:
   - Bodily injury to any person who, as a result of the injury, immediately receives medical treatment away from the scene of the accident; or
   - One or more motor vehicles incurring disabling damage as a result of the accident, requiring the motor vehicle to be transported away from the scene by a tow truck or other motor vehicle.

Type of accident involved	Citation issued to driver	Test must be performed
Human fatality	Yes No	Yes Yes

Bodily Injury with immediate medical treatment required away from the scene.	Yes No	Yes No
Disabling Damage to any motor vehicle requiring tow away from the scene.	Yes No	Yes No

If a post-accident alcohol or controlled substance test is required, the supervisor may accompany the driver to the collection site. The alcohol test must be performed within two (2) hours following the accident. The controlled substance test shall be completed within eight (8) hours following the accident.

No PCI driver will be permitted to drive a Company owned or leased vehicle until a negative test result is received. Positive test results will result in disciplinary action up to, and including, termination of employment. Any positive result or refusal to submit to the required test will result in immediate termination. See the PCI Drug Free Workplace Program for details.

9. Accident Reporting and Repairs

A. Definition of Accident

Peterson Contractors, Inc. defines an accident as any occurrence involving a fleet motor vehicle that results in death, injury, or property damage. This includes any vehicle incident even if there was no injury or property damage. Accident reports are required, regardless of the time of day, fault, or damage done.

DOT defines an accident as an occurrence involving a commercial motor vehicle operating on a highway in interstate or intrastate commerce which results in:

1. A fatality.
2. Bodily injury to a person, who as a result of the injury, immediately receives medical treatment away from the scene of the accident; or
3. One or more motor vehicles incurring disabling damage as a result of the accident, requiring the motor vehicles to be transported away from the scene by a tow truck or other motor vehicle.

B. Types of Accidents

Preventable – An accident in which the driver fails to exercise every reasonable precaution to prevent the accident. It has no direct relationship to blame, legal violations, and accident cost or driver liability. The Corporate Safety Department will handle the investigation and along with senior management, will determine fault as applicable.

If the driver fails to meet PCI driver standards, they can be disqualified in accordance with the established driver qualification requirements identified in this manual.

Non-Preventable – An accident that occurs in circumstances entirely beyond the control of the driver in which he or she does everything reasonable to avoid or prevent the accident.

Incident – Damage incurred while the vehicle is legally parked or due to "Acts of God" such as hail damage, storms, floods, fallen trees, or animals.

An incident can become an accident. For example, if the driver legally parks the vehicle but forgets to set the parking brake and the vehicle subsequently moves and causes injury or property damage, the incident is an accident. PCI will determine if the accident was preventable.

PCI will review an employee's motor vehicle record (MVR) each time an incident involving a Company owned or leased vehicle is reported.

C. Accident Packet

Accident packets should be placed in every Company owned or leased vehicle. Replacement kits and/or supplies are available from the Reinbeck office. Each vehicle should contain the following items:

1. Fleet Vehicle Accident Report Forms
2. Insurance Identification Card

Each supervisor's vehicle should also contain a disposable camera.

D. Accident Reporting Procedures

If a Peterson Contractors, Inc. fleet vehicle is involved in an accident and/or damages another person's property, employees are required to following these steps:

1. Make sure all persons are out of immediate danger. Place warning devices as required.
2. Call 911 for emergency assistance if there are any injuries, or if the accident has created a safety hazard to other motorists. Request local law enforcement be dispatched.
3. Immediately notify your supervisor and the corporate Safety department.
4. Never admit fault or liability.
5. Complete the PCI Fleet Vehicle Accident Report form at the scene of the accident. Take pictures of the accident scene and specifically, any damages to all vehicles involved.
6. If there are witnesses to the incident present, ask them to complete a "Witness Card" or at a minimum, get their names, addresses, and telephone numbers.
7. Provide the other party(s) with:
   - Your name and the company's name.
   - Proof of insurance and your fleet vehicle policy number.
8. Obtain insurance information on the other party(s) including:
   - Policy Holder's Name
   - Driver's Name, if different than policy holder's name
   - Agent's Name, Address and Telephone, including area code
   - Insurance Company Name
   - Policy Number
9. Deliver, send, or fax the completed PCI Fleet Vehicle Accident Report Form to the Reinbeck office.
10. Under no circumstances shall the driver or employee discuss the incident with others or the media. Any statement from PCI shall be made via designated Company official.
11. The driver shall remain at the scene until released by the Corporate Safety department or immediate supervisor in situations involving personal injury, vehicle, or property damage.

E. Police/Law Enforcement Reports

When submitting a PCI Fleet Vehicle Accident Report form, the driver or employee shall obtain a copy of any and all applicable police reports available, substantiating the facts of the accident or incident.

F. Disabling Damage Caused by Accident

If a vehicle becomes disabled or unsafe, immediately and safely park the vehicle in accordance with all traffic safety laws. The use of warning devices is required in accordance with applicable laws. If a driver finds it necessary to use any safety equipment with regards to fire extinguishers, flares, or other warning devices, notify the corporate Safety department by phone.

G. Accident Repairs

When the Reinbeck office receives a report that a PCI vehicle has been damaged, the maintenance department will contact the driver or supervisor to coordinate repairs. The maintenance department will assist drivers and supervisors with all associated post-accident repairs, including decals. The PCI Safety department will file claims as required with outside insurance carriers.

H. Accident Review

Senior management and the Safety department will fairly and objectively evaluate a driver's motor vehicle record (MVR) and accident history as it relates to the operation of Company vehicles. A course of action will be determined, with the final decision and any applicable disciplinary action to be taken, by senior management.

10. Vehicle Standards and Specifications

It is the intent of Peterson Contractors, Inc. to standardize the specifications of all Company owned or leased vehicles. Standardized specifications will provide cost savings during vehicle upgrade and purchase. In addition, standard vehicles can be easily transferred between drivers or locations without additional training on vehicle operation.

Vehicle specifications are continually being developed for each specific job type. The final design of each vehicle will be decided upon by senior management to determine the best vehicle for each job type.

A. Vehicle Purchasing and Replacement

1. Vehicle Replacement Schedule. Depending upon the type of vehicle, senior management determines when a vehicle should ideally be replaced. When a vehicle's repair costs become excessive, replacement of the vehicle will seriously be considered. Therefore, it is so important to regularly report mileage, repairs, and maintenance performed on vehicles. Without complete information, it is difficult to make a determination on vehicle replacement.

2. Vehicle Options. Each model year, the corporate fleet department will decide which vehicles and equipment options will be provided on vehicles that are due to be replaced.

B. Vehicle Modification and Intended Use

1. PCI vehicles shall not be modified, changed, or altered from their original delivery specifications, in any way, without the expressed consent of senior management.

This includes, but is not limited to:

- Disconnecting emission control devices, airbags, seatbelts, and shoulder harnesses, warning systems.
- Removal of any fixed or secured item including, but not limited to, toppers, ladder racks, strobes, cargo shelving, bulkheads, seats, mirrors, etc. is strictly prohibited.
- PCI prohibits the employee's attachment of trailer hitches, towing or pushing packages, and any other device that would alter the vehicle's basic transportation use.
- No additional equipment will be permitted if it permanently defaces the vehicle, internally or externally, in any way. This includes, but is not limited to, radios, CD players, running boards, cage framing, etc.

2. New Vehicle Delivery and Vehicle Operation. Every employee assigned a fleet vehicle must read the owner's manual and become familiar with the proper operation and care of the vehicle and its equipment. No driver will be permitted or expected to operate a vehicle that he is unfamiliar with. Special care must be taken to become familiar with the use of different braking and fueling systems found on different vehicles. The use of wheel chocks is required when an unsafe parking condition exists and on all commercial motor vehicles.

C. Documents to be Carried in All Vehicles

The following documents shall be always carried in Company owned or leased vehicles.

- Daily Vehicle Inspection Report (DVIR)
- Insurance Cards
- Vehicle registration cards
- Other permits required by local or state jurisdictions (driver's responsibility)
- Accident Packet
- Owner's and Equipment Operations Manual(s)

In addition, Commercial Motor Vehicles should also carry the following items:

- Vehicle Inspection
- Logbook/Driver Hours of Service
- 150-Mile radius drivers – proof of hours-of-service statement

D. Vehicle Markings & Labeling
In accordance with DOT regulations, all vehicles defined as Commercial Motor Vehicles and operating in interstate commerce must display prescribed identification information.

Vehicle markings must show:

- Company name.
- City and state in which the vehicle is based.
- The motor carrier ID number (USDOT 260974)

These markings shall appear on both sides and be readily legible in daylight from 50 feet.

All Peterson Contractors, Inc. vehicles shall display the Company-approved logo, which is the standard for all Company owned or leased vehicles. The maintenance department can assist drivers and employees in obtaining the correct identification decals.

All PCI vehicles are assigned a vehicle unit number, which should be referred to on all correspondence, billings/invoices, automotive inventories, etc. The unit number is assigned by senior management and shall be placed as follows:

- Driver and passenger side, front hood, or bumper
- On vehicle rear above the bumper.

11. Vehicle Maintenance Program

A. The purpose of the Vehicle Maintenance Program is to:
1. Improve equipment reliability and reduce costly and preventable downtime
2. Reduce overall fleet operation costs and prevent unscheduled repairs
3. Provide a system of fleet maintenance that is consistent, monitored, and continuously improving
4. Promote timely vehicle inspection and maintenance practices that improve fleet operations
5. Ensure compliance with DOT Motor Carrier Safety Regulations.

B. Employees will be responsible for proper daily maintenance for their assigned vehicle. Repair work shall be performed by the maintenance department and documented. Preventive maintenance shall be performed in accordance with company standards. Annual vehicle inspections (safety inspections) shall be documented on the appropriate inspection form and filed with the vehicle maintenance file, located in the maintenance department.

Each vehicle garaged and maintained at remote locations shall have its own Lubrication and Preventative Maintenance Record. This file shall contain all maintenance and repair records from the time of purchase until the vehicle is transferred or sold. The record should include a complete identification of the vehicle including:

- Company Unit Number
- Make
- Serial Number or VIN
- Year of Manufacture
- Tire Size
- A record of each inspection, repair and maintenance including date and nature.

In the event the vehicle is transferred, the file and Daily Vehicle Inspection Report (DVIR) file should be forwarded with the unit. If the vehicle is sold, all files related to the vehicle should be forwarded to the maintenance department in Reinbeck.

C. Condition & Appearance – The cleaning of all vehicle interior and exterior surfaces, including glass, is the responsibility of the driver. The maintenance department will periodically clean and polish vehicles as they receive maintenance in one of the established facilities. The Company expects the operators to keep PCI vehicles looking appropriate to represent PCI to the public.

D. Preventive Maintenance (scheduled vs. unscheduled) – Each driver is responsible for the operating condition of his or her vehicle, including coolant and oil levels, vehicle lighting, horns, wipers, steering, tires, controls, and other appropriate equipment.

A preventive maintenance schedule has been designed for each type of vehicle in the fleet based on type of use, mileage, and the manufacturer's recommended maintenance program. Peterson Contractors, Inc. requires light duty vehicles and heavier trucks, to receive appropriate maintenance required at specific mileage intervals. The preventive maintenance schedule is not meant to replace the guidelines set forth by the manufacturer of any vehicle or equipment. It is simply to provide a more preventive means of maintaining company vehicles.

E. Pre-approval of maintenance or repairs: Pre-approval is required from senior management or the maintenance department in Reinbeck when the vehicle is to receive maintenance or repair from an outside vendor.

F. All repairs and maintenance services performed on Company vehicles shall be authorized by senior management and provided by authorized mechanics or other certified technicians licensed and insured to provide such services.

G. Fuel and other Vehicle-Related Purchases

1. Fuel should be primarily obtained by using the Company-provided fueling points and tank trucks. When traveling on authorized PCI business and a Company owned fuel source is not available, fuel should be purchased from commercial self-service stations and gas pumps. Receipts for fuel should be attached to a weekly expense report and forwarded to the main office in Reinbeck. For gasoline-powered vehicles, only unleaded regular and ethanol-based fuel should be purchased. Premium/super unleaded fuel products are not necessary to ensure a vehicle's good performance and therefore, should not be purchased.

2. Incidental items, such as fuses, oil, antifreeze, batteries, wiper blades, windshield washer fluid, tires, etc. should be obtained prior to travel from the maintenance department in Reinbeck.

12. Operating Expenses for Company-Provided Vehicles

Properly pre-approved and documented expenses may be reimbursed by PCI for all Company-provided vehicles including, but not limited to:

- Parking meters or ramp fees
- Highway/Freeway or EZ-Pass Tolls
- Repairs & maintenance
- Fuel Purchases

All driver out-of-pocket expenses should be kept to a minimum. This will allow the Company to accurately track vehicle related expenses and reduce the time needed to process expense reports. These procedures will also help drivers reduce record keeping and personal cash flow demands. If out-of-pocket expenses are necessary, the expense receipts should be reported on and receipts attached to your weekly expense report.

13. Vehicle Inspections

A. Daily Vehicle Inspection Report (DVIR)

Every vehicle with a combined GVWR of 8000 lbs. or more, must have a pre-trip and post-trip inspection report completed by the driver each time a vehicle is operated. If a driver operates more than one vehicle during the day, a report shall be prepared for each vehicle operated. If a defect that would make the operation of the vehicle unsafe, or result in a breakdown or accident, is discovered, and reported on the DVIR, the vehicle cannot be driven until the defect is corrected. Corrected defects must be documented by a mechanic's

signature and driver signature before the vehicle is driven. These records shall be maintained in the local driver's office, in an individual file for each vehicle, for a period of six months. Report books are available from the regional fleet department.

B. Annual Vehicle Inspection
All CMV are subject to an annual chassis inspection by a qualified mechanic or state official. In addition, several states require annual inspection of all vehicles. Knowledge of individual state requirements is the responsibility of both drivers and managers. A copy of the completed inspection form shall be kept in the vehicle maintenance folder.

C. Vehicle Inspection Form
Qualified mechanics and inspectors will maintain a supply of inspection forms that can be used to document vehicle inspections. Any form is acceptable providing it meets applicable DOT regulations. Copies of completed inspection forms shall be kept in the vehicle maintenance file located in the maintenance department. Statements or invoices are not an acceptable means of recording a vehicle inspection. The vehicle inspection shall contain an itemized listing of all vehicle components evaluated.

D. Vehicle Searches
In accordance with established Company policy, PCI reserves the right to question drivers and/or inspect, at any time, all vehicles owned or leased by the Company. Vehicles are the property of Peterson Contractors, Inc and are issued for the use of employees only during their employment with PCI.

14. Vehicle Insurance, Titles, Registrations and Permits

A. Vehicle Insurance - All company vehicles have liability, collision, comprehensive, and bodily injury insurance. Each vehicle will be issued an insurance ID card, which is renewed as required. Keep the card in the glove compartment inside the Fleet Accident Instructions envelope. Many state laws require that this card be presented at the request of law enforcement. All questions regarding insurance coverage shall be directed to the Reinbeck office.

B. Vehicle Titles - Titles for vehicles owned by PCI are kept in the Reinbeck offices. If, for some reason, a title is mailed to a remote location, it should immediately be sent to the Reinbeck office. If the vehicle is relocated to another state, the driver should notify the Reinbeck office to begin transfer of the title.

C. Vehicle Registrations (Initial & Renewals) – The Reinbeck office will handle registration renewals directly with the state.

D. Operation of vehicles outside US – Company owned, or leased vehicles shall not be operated in Mexico and Canada without the expressed permission of your manager. If the Company vehicle needs to be used outside the United States, at least four weeks' notice must be given prior to the proposed entry in order to review the requirement and obtain and verify proper insurance coverage.

E. IRP (International Registration Plan) or Apportioned Registrations - An apportioned vehicle is a vehicle used or intended for use in two or more jurisdictions that meet specific weight and/or axle requirements. Vehicles, or combinations thereof, having a gross weight of 26,000 pounds or less and two axle vehicles may be proportionally registered from the state the vehicle is based in. Contact the Reinbeck office for additional information regarding potential IRP registrations if needed.

15. Vehicle Reassignment

If a vehicle is transferred or reassigned, it shall be in good working condition and ready for immediate use. If a driver is re-assigned to another vehicle, the previous driver or supervisor shall ensure that the vehicle has proper and current documentation (registration, inspection requirements, insurance ID). If they are not in order, contact the Reinbeck office.

16. Vehicle Disposal

Senior PCI management will handle disposal of Company vehicles. At the time of replacement, the driver will receive instructions on where to leave the vehicle for disposal.

If the new vehicle requires any transfer of special fixed equipment from the replaced vehicle, the driver should make arrangements to schedule the equipment transfers with the maintenance department.

When a vehicle is to be sold or replaced, the driver should remove all paper information relating to the Company and Company's insurance carrier. All parts, tools, advertising literature, vehicle decals and personal items should also be removed either by the driver of the maintenance department. The vehicle should be swept clean and be free of debris. Weather permitting, the vehicle's exterior should also be reasonably clean and presentable.

17. Safety

A. Defensive Driving

1. The Peterson Contractors, Inc. Safety Department will provide comprehensive defensive driving training to drivers who need improvement in various areas of vehicle operation
2. Drive defensively by assuming that the other driver will not always do what is expected and by making allowances for the possible lack of skill and knowledge in the other driver.
3. Modify driving to compensate for adverse weather conditions. Be alert to hazards created by weather, poor roads, pedestrians, and other drivers. Remember that bridges and overpasses may be more slippery due to water, frost or ice accumulation.
4. Use turn signals for parking, lane changes, entry onto freeways, and all turns.
5. Ensure that all cargo and/or equipment is securely fastened or attached to the vehicle.

B. Cellular Telephone Usage – Peterson Contractors, Inc. provides eligible employees and drivers with this necessary means of communication. Additionally, personal cellular telephones are subject to these same requirements. For safety and liability reasons, PCI expressly prohibits the use of a cellular phone while the vehicle is being driven. Cellular phones shall be used only when the vehicle is stopped or parked in an area that is both safe and non-traffic obstructive. A "hands-free" feature is not acceptable while the vehicle is being driven.

C. Prescription Medication - Employees taking medication prescribed by a licensed medical professional shall immediately advise their supervisor if the use of the medication would adversely affect the safe operation of a vehicle is prohibited.

D. Safe Driving Practices

1. Rear-End Collisions – This is the most preventable type of crash, as it generally shows carelessness and negligence on the part of the driver. Drivers should slow down and allow enough room and time to react, and brake to a full stop.

2. Backing – Drivers often back into or out of a parking space without knowledge of obstacles behind or alongside the vehicle. Drivers should always familiarize themselves with the area by walking around the vehicle before backing up. This helps ensure awareness of any new hazards that have developed while the vehicle was parked. This will also help the driver identify potential hazards that could develop while backing. Once backing begins, the driver should stay alert and continually check all mirrors. Backing incidents can be further prevented if it is possible to drive forward out of a parking area. Use a spotter when backing if possible and/or turn on any vehicle mounted strobe or beacon lights when backing if visibility is limited.

3. Incidents Involving Parked Vehicles – Often drivers will want to park immediately adjacent to the work environment to gain easy access to the building, project, or equipment. Restricted parking area or no parking zones should be avoided. Parking in restricted or improper parking areas frequently results in hit-and-run collisions.

4. Improper passing – Always exercise caution when passing. Be wary of slow-moving vehicles and/or drivers who appear tentative as to their direction of travel. Give questionable drivers plenty of room when passing.

5. Failure to use turn signals – The proper use of turn signals aids a driver's predictability. Always use turn signals well in advance of making any turns or lane changes.

6. Failure to maintain an assured distance – Leave plenty of distance between vehicles when traveling in heavy traffic. Under normal driving conditions, a driver should leave at least a two-second driving time distance between the company vehicle and the vehicle we are following. This will generally allow enough room to slow or stop the vehicle without impacting the followed vehicle. Maintaining an assured clear distance may also help create an escape route to avoid a collision.

7. Speeding – Speeding increases the frequency and severity of crashes. Drivers should always adhere to all posted speed limits and reduce speed to match driving conditions.

E. Safety Equipment to be in each PCI vehicle.
   1. One 2-1/2 lb. dry chemical fire extinguisher.
   2. Flares or other reflective marking devices.
   3. Contact the Reinbeck maintenance department or the Safety department to obtain or replace safety equipment.

F. Safety Programs – It is intent of Peterson Contractors, Inc. to reward drivers who exhibit good driving habits and have a commendable accident-free driving record.

1. Driver Safety - Each driver is responsible for his or her cargo – report any problems to the immediate supervisor. At no time should any action be taken to stop any theft from occurring if such action may endanger the safety of the employee. Be patient and immediately report the theft to the proper law enforcement agency and senior management at the Reinbeck office or to the Safety department.
2. ALL operators shall comply with the Driver Safety Rules of Peterson Contractors, Inc. This list is in no specific order of importance and is not meant to be all-inclusive. See appendix C.

Heavy Haul Truck Drivers

Safe driving is essential to PCI business. Being a courteous driver who follows all regulations is mandatory to maintain employee safety and PCI's public image. Heavy haul truck drivers and all other persons who operate Company vehicles, including but not limited to cars, pickup trucks, and vans shall at a minimum observe the following rules.

All drivers, including those operating heavy trucks, cars, and pickups shall comply with Company, Insurance Company, and DOT regulations at all times.

1. A pre-trip inspection and a post-trip inspection are required before leaving and upon returning to the yard. All heavy haul truck drivers must document the post-trip inspection in writing. Any deficiency must be corrected before leaving the yard. This includes but is not limited to, checking fluid levels, lights, brakes, airlines, etc. Drivers are to notify the mechanic of any deficiencies on either inspection.

2. Drivers shall always observe the posted speed limits. Maintain speeds that allow stopping within a safe distance. An unacceptable driving record will jeopardize the driver's employment and/or ability to drive Company vehicles. Employees will lose their driving privilege when their driving record reflects:
   OWI conviction (Alcohol or drugs) within a 5-year window
   Reckless or Careless driving conviction within a 5-year window
   Speeding conviction of 20mph or over within a 5-year window
   (3) Speeding or other moving violation convictions within a 3-year window
   Deferred sentences on convictions count as convictions.

3. Drivers shall observe all stop and yield signs or lights. Running through a yellow or red light is not acceptable. Complete stops are required at stop signs. Rolling stops are not acceptable.

4. Maintain a safe distance between the PCI unit and the vehicle in front of you.

5. Report any incident or accident to the supervisor immediately.

6. In the event of an accident, contact the supervisor and safety director immediately. Do not discuss blame or liability with anyone.

7. **Use of a cell phone is prohibited while driving. If a phone call must be made or taken, pull over and stop first. Let incoming calls go to voice mail and return the call at a safe time. Hands free devices including speaker phones, blue tooth devices, etc. are not allowed. <u>Texting while driving is strictly prohibited</u>!**

8. Seat belts shall be always worn.

9. The doors of belly dump trailers shall be **<u>pinned or blocked open</u>** before anyone can stand between them. Failure to do so shall be cause for immediate dismissal.

10. The doors of belly dump trailers shall be pinned or chained shut if necessary while traveling loaded to avoid accidental dumping on roadways.

11. Rear doors of tub trailers shall be chained to prevent accidental opening while in transit.

12. Drivers shall be alert, vigilant, and courteous always. You represent PCI to the motoring public.

13. Drivers are responsible for their loads. It is the driver's responsibility to ensure their loads do not overflow the top of the trailers, skid plates are clean, load is within weight limits, and other debris will does not fall from the truck or trailer.

    It is the driver's responsibility to ensure the vehicle/power unit is/are of the correct size and are designed for the intended use.

14. Be sure your vehicle has an insurance packet and registration in the glove compartment or in the unit file.

15. It is the driver's responsibility to comply with logbook requirements when driving over 100 miles away from their home base.

16. Never leave keys in a vehicle. Keep the vehicle locked when parked.

17. Do not leave attractive items such as laptop computers, GPS units, or cameras in parked vehicles.

18. Drivers must ensure that current copies of their CDL and medical cards are provided to the office for their Driver File as required by DOT.

19. DOT physicals are the driver's responsibility. Physicals must be kept current and be obtained from a qualified and Company approved medical provider. Medical cards from chiropractors, physicians not trained by DOT, or cards obtained by doctor shopping from unqualified providers will not be accepted.

20. Drivers will not operate licensed equipment if either their CDL or Medical Card is expired.

21. Under no circumstances shall a driver operate any PCI vehicle or piece of mobile equipment while under the influence of alcohol, illegal drugs, or prescription drugs that may alter their safe driving ability.

Vehicle Policy

1. Authorized Use
    a. Use of company vehicles is authorized for business purposes only and only to authorized drivers.
    b. Personal use of a company vehicle must be approved in advance by management, except in cases of emergency. Emergency use must be noted on the weekly Employee Expense Account & Mileage Accounting sheet. Mileage fees must be reimbursed by the employee to the company at the posted per mile rate.
    c. If you are authorized to drive a company vehicle, you may be issued a company gas credit card or credit card. These credit cards are to be used for business purposes only. Personal purchases, including food or drink are not allowed.
2. Unauthorized Use
    a. Operation of a company vehicle by non-employees or others, including employees who are not authorized and approved drivers by management is expressly prohibited.
3. Safety Issues
    a. Vehicles shall be operated in a safe, lawful, and courteous manner always.
    b. Use of seatbelts by all occupants of company owned vehicles and other vehicles, including rented vehicles used for company business is mandatory.
    c. Use of cellular phones is prohibited while driving. This includes the use of ear buds, blue tooth devices, hand free devices, and texting.
    d. Use of distracting electronic devices, such as, but not limited to DVD players, computers, and CB radios are prohibited while driving. Programming of GPS units is not allowed while driving.
    e. Reading books, magazines, or any other printed materials is prohibited while driving
    f. Under no circumstances shall a driver operate any PCI vehicle or piece of mobile equipment while under the influence of alcohol, illegal drugs, or prescription drugs that may alter their safe driving ability.

4. Care, Maintenance, and Appearance
    a. Scheduling of routine maintenance on your company vehicle is your responsibility and shall be in accordance with the manufacturer's recommendations. In cases where the company vehicle is in remote states, routine maintenance shall be scheduled at a local service facility.

b. You shall report any needed repairs, including but not limited to tires, brakes, windshield damage, etc., or other non-routine maintenance to the shop supervisor in Reinbeck or your supervisor.
c. Vehicles shall be always neat and clean to reflect the proper image of Peterson Contractors, Inc.
d. It is your responsibility to make sure the license plates, annual tags, DOT ID stickers, required testing, proof in insurance, required safety inspections, etc. are current and are in or on the vehicle at all times.

5. Use of a Personal Vehicle for Company Business
    a. Employees who use their personal vehicle for company business must have permission from company management prior to using it. Employees who are on a suspended driving status with the company shall not use their personal vehicle for company business unless prior approval is obtained from company management.
    b. Employees using their personal vehicle for company business shall meet the same driving requirements as those driving company issued vehicles.
    c. Prior to using a personal vehicle for company business, you must submit evidence of personal insurance on that vehicle. Minimum liability insurance requirements with vehicle limits of at least $500,000.00 and $1,000,000. Additionally, the insurance company shall issue a certificate of insurance listing Peterson Contractors, Inc. as an additional insured to that policy.
6. Driver's License Status and MVR Reports
    a. Employees who are to be issued or will drive a company vehicle must have an acceptable driving record of:
        i. Current valid driver's license or CDL, that is not under suspension.
        ii. Not more than 3 moving violations in a determined amount of time.
        iii. No major violations such as, but not limited to: OWI, DUI, Careless Driving, Reckless Driving, speeding of over 20+ miles per hour, in a determined amount of time.
    b. Employees who are to be issued a company vehicle must submit a copy of their driver's license or CDL and proof of personal vehicle insurance.
    c. MVR reports will be checked at least annually by management. If the information obtained in the MVR report indicates that your driving record does not meet the requirements listed above, you will be placed on suspended driving status. This may result in your being transferred to a different job or your employment being suspended or terminated if you are required to drive in the course of your job.
    d. Employees are required to immediately report any major moving violations they receive to their supervisor or management, whether in a company issued vehicle or in their personal vehicle, during the course of their employment or when off duty. Any employee who is cited for DUI, DWI,

OWI, reckless or careless driving, or speeding in excess of 20mph must immediately report the citation to management. Under no circumstance shall the employee operate any company vehicle after being issued the citation. The cited employee will immediately lose their driving privilege to operate a company issued vehicle or operate their personal vehicle for company business. If you are required to operate a company vehicle in the course of your employment, the consequences may include transfer, suspension of employment, or termination.

e. The company, at its discretion may seek a variance to the length of the driving privilege suspension.

Appendix A

Peterson Contractors, Inc.
Company Owned Vehicle Use Agreement

Agreement between Peterson Contractors, Inc. and the employee named below, for the assignment of a Company – Owned vehicle for business use, with emergency personal use provisions.

_____

Employee – Printed Name

A Company-Owned vehicle is hereby assigned to the above-named employee under the following conditions:

1. Only current employees in good standing of Peterson Contractors, Inc. shall drive Company-owned vehicles. The operator of any PCI vehicle shall comply with all provisions of the Flee Safety Program.
2. Any driver of a Company-Owned vehicle shall, always be properly licensed to drive in any area in which the vehicle is driven.
3. The vehicle shall be operated and maintained according to PCI's standards.
4. Accurate records and reports as may be required by PCI, covering mileage, expense, accidents, maintenance, etc. shall be maintained and filed in a timely manner as required.
5. Any driver of PCI vehicles shall, always, follow safe and courteous driving practices.
6. Under no circumstances will any employee be impaired or under the influence of any drug or alcohol while operating a Company owned vehicle. See the Drug Free Workplace program for details.
7. PCI will pay all operating expenses such as registration, insurance, taxes, state registration fees, gasoline, oil, greasing, repairs, etc. Parking and toll charges may be reimbursed when such charges are properly recorded on a weekly expense report and include the appropriate receipts.
8. Personal use of the vehicle is not allowed, unless authorized in advance by management, except for personal emergencies. The employee will reimburse PCI for emergency mileage at the rate listed on the current expense report and will pay for parking and toll charges incurred while driving the vehicle in personal emergency situations.
9. The employee is responsible for safe, overnight parking of the vehicle in a private driveway, garage, or other safe and legal areas. PCI will pay for safe overnight parking for vehicles on out-of-town business trips.
10. Hitchhikers are not permitted to ride at any time in PCI owned vehicles. The carrying of known passengers may be allowed with prior approval from management.
11. The employee assumes full responsibility for any traffic and parking violations arising out of the use of any PCI vehicle. If the Company is required to pay any fine after the employee terminates employment with PCI, the employee agrees to reimburse PCI within 5 days of receiving written notice.
12. It is PCI's policy that all persons who drive or ride in PCI vehicles always use the available passenger restraints (seat belts) while the vehicle is in motion.
13. Cellular telephones shall not be used while driving.
14. The employee shall not allow any passenger(s) to ride in the box of any pickup truck at any time.
15. PCI shall be notified immediately of any and all accidents in which the driver is involved while driving any PCI owned vehicle and as soon as possible after any accident in which the employee was driving.
16. Any accident, regardless of severity or cause shall be reported to the appropriate law enforcement agency and an appropriate police report obtained.
17. PCI may revoke any employee's driving privilege or the assignment of a PCI vehicle at any time or for any reason. PCI further reserves the right to change vehicle assignments, as it deems necessary.

I have read, understand, and agree to comply with the above listed conditions and penalties for my being issued a PCI owned vehicle.

_____ _____

Date Employee Signature

Appendix B

Peterson Contractors, Inc.
Personally Owned Vehicle for PCI Business Use Agreement

Agreement between Peterson Contractors, Inc. and the employee named below, for the use of a Personally Owned vehicle for PCI business use.

_____

Employee – Printed Name

The use of a Personally Owned vehicle being used for PCI business, owned by the above-named employee, is agreed to, under the following conditions:

1. Any driver of a Personally Owned vehicle shall, at all times be properly licensed to drive in any area in which the vehicle is driven.
2. The vehicle specified below, that is being used for PCI business, shall be owned, or leased by the employee listed above.
3. The personally owned vehicle being used for PCI business shall be insured for an amount consistent with PCI's risk management standards for bodily injury, liability, and property damage. As evidence of insurance required, the employee-owner of the vehicle shall have their insurance carrier issue a certificate of insurance naming PCI as an additional insured, stating the amounts of coverage.
4. The vehicle shall be operated according to PCI's standards.
5. Accurate records and reports as may be required by PCI, covering mileage, expense, accidents, maintenance, etc. shall be maintained and filed in a timely manner as required.
6. Any driver representing PCI shall, at all times, follow safe and courteous driving practices.
7. Under no circumstances will any employee be impaired or under the influence of any drug or alcohol while operating a Personally owned vehicle while on PCI business. See the Drug Free Workplace program for details.
8. PCI will pay specified operating expenses such as gasoline, as agreed to between the vehicle owner and PCI management. Parking and toll charges may be reimbursed when such charges are incurred while driving on business for PCI and are properly recorded on a weekly expense report and include the appropriate receipts.
9. Hitchhikers are not permitted to ride at any time in while the vehicle is being used on PCI business. The carrying of known passengers while on PCI business is allowed with prior approval from management.
10. The employee assumes full responsibility for any traffic and parking violations arising out of the use of any vehicle at any time. If the Company is required to pay any fine after the employee terminates employment with PCI, the employee agrees to reimburse PCI within 5 days of receiving written notice.
11. It is PCI's policy that all persons who drive or ride in any vehicle while on PCI business always use the available passenger restraints (seat belts) while the vehicle is in motion.
12. Cellular telephones shall not be used while driving.
13. The employee shall not allow any passenger(s) to ride in the box of any pickup truck at any time.
14. PCI shall be notified immediately of any and all accidents in which the driver is involved while driving any personally owned vehicle while on PCI business and as soon as possible after any accident in which the employee was driving.
15. Any accident, while the personally owned vehicle is being used on PCI business, regardless of severity or cause shall be reported to the appropriate law enforcement agency and an appropriate police report obtained.
16. PCI may revoke this agreement at any time for any reason, at it deems appropriate.

The undersigned is the lawful owner of: _____ _____

Make of Vehicle **Model of Vehicle**

_____ _____

Year **VIN Number**

I have read, understand, and agree to comply with the above listed conditions and penalties for my being allowed to use a personally owned vehicle for PCI business.

_____ _____

Date **Employee Signature**

APPENDIX C

DRIVER SAFETY RULES

1. **Peterson Contractors, Inc. endorses, as Company rules, all applicable State Motor Vehicle regulations relating to driver responsibility.**
2. **All accidents, regardless of severity or fault, must be reported to the police and the main office immediately.**
3. **All drivers and passengers, operating or riding in Company vehicles shall wear seat belts.**
4. **Passengers are never allowed to ride in the beds of pick-up trucks.**
5. **No unauthorized riders, hitchhikers, etc., are allowed to ride in Company vehicles.**
6. **Under no circumstances is a PCI vehicle to be driven by a non-employee, except in an emergency, in the case of repair and testing by a mechanic, or other use as permitted by management.**
7. **Company vehicles are not to be used for non-work-related activities, unless authorized by management. Driving to and from work is considered to be approved mileage.**
8. **Any driver who has a driver's license revoked or suspended shall immediately discontinue use of the PCI vehicle and notify the main office.**
9. **Any driver shall report the conviction of any motor vehicle violation to the main office within 48 hours.**
10. **Drivers should not operate a vehicle for at least 8 hours after working 15 continuous hours.**
11. **No driver shall operate any PCI equipment when his/her ability to do so safely has been impaired by alcohol, drugs, medication, illness, fatigue, or injury. Refer to the Company's Drug Free Workplace Program for additional details.**
12. **Each driver is responsible to ensure that their vehicle is in safe operating condition, perform, pre-trip inspections, and is not allowed to operate any vehicle with defective steering, brakes, or any other defect that would inhibit safe operations.**
13. **Drivers are responsible to ensure the security and safety of their Company vehicle. The engine must be shut off, ignition keys removed, transmission in park or in reverse, parking brake applied, and doors locked when the vehicle is left unattended. If the vehicle is left with a parking attendant, only the ignition key is to be left.**
14. **Drivers must honor the posted speed limit. In the event of adverse driving conditions due to weather, road conditions, light, traffic, etc., drivers must reduce their speed appropriately.**
15. **Drivers must always maintain a safe following distance. Drivers should keep a two second interval between their vehicle and the vehicle immediately ahead. During slippery or other adverse road conditions, the following distance must be increased appropriately.**
16. **Drivers must yield the right of way at all traffic controls signals and signs requiring them to do so. Drivers should be prepared to yield for safety's sake at any time. Pedestrians and bicycles always have the right of way.**
17. **Drivers are required to always stay in the right lane, except when passing in a legal passing zone, preparing to make a left-hand turn, or where specific road regulations dictate otherwise. Truck drivers swinging wide to make right hand turns must be additionally conscious of oncoming traffic as well as traffic that may attempt to "sneak" up beside the truck.**
18. **Drivers must ensure there is clearance to sides, behind, and overhead before backing. This may require that the driver physically walk around the vehicle and/or seek assistance.**
19. **The use of cellular telephones is prohibited while driving, including any "hands-free" accessories.**

This list of rules is not intended to be all-inclusive, nor is it listed an order of importance. Rather, it is a listing of general rules, which will be added to as circumstances dictate.

I have read, understand, and agree to the rules listed above while operating any PCI vehicle, on or off road.

_____ _____

Date Signature

Appendix D

DRIVER EVALUATION POINT SYSTEM

POINTS	EXPLANATION
3	Under 25 years of age; Lack of driving experience.

NON-SPEED RELATED MOVING VIOLATIONS

1	Improper "U" turn
1	Operating where prohibited
1	Improper turn
1	Failure to keep in proper lane
1	Improper parking
1	Driving on road shoulder, in ditch, or on sidewalk
1	Making improper entrance to, or exit from, freeway
1	Starting improperly from a parked position
1	Improper backing
1	Failure to signal
2	Failure to yield right-of-way at stop sign
2	Failure to yield right-of-way to emergency or other authorized vehicle
2	Failure to follow instruction of police officer
2	Failure to yield right-of-way in any manner required at unsigned intersection
2	Spilled load (solid object)
2	Failure to obey traffic instructions stated on traffic signs or shown by traffic control devices
2	Driving wrong way on one-way street
3	Passing school bus taking or discharging passengers

SPEED-RELATED MOVING VIOLATIONS

1	Improper lane change
1	Speeding - controlled access freeway in thinly populated area
2	Driving in an improper lane
2	Following too closely
2	Passing on the wrong side
2	Driving too fast for conditions
2	Speeding < 15mph over the limit, urban / suburban
3	Speeding > 15mph over the limit, urban / suburban
3	Speeding in densely populated area
3	Passing where prohibited by posted signs, pavement markings, or on hill, curve, or bridge.
4	Speeding in school zone

ACCIDENTS

0	Accident - non-preventable, as indicated by accident review board or police report.
3	Accident with a parked vehicle or fixed object
2	Accident - ran off roadway (excluding rollovers)
3	Accident - all others

ALCOHOLIC, DRUGS, AND/OR RECKLESS DRIVING: OTHER MAJOR OFFENSES

6	Reckless driving is included because it is frequently a reduction from an alcohol or drug related charge.
6+	Other major offenses must be considered on an individual basis, but generally disqualify the driver, such as first offence DWI
9	Second offence DWI, etc.

NON-MOVING VIOLATIONS

Non-moving violations are not normally considered in evaluating the individual driver.

EVALUATION

The best and most desirable drivers will have 0 to 3 points.

The average, professional driver will have 4 points.

5 to 8 points indicate a questionable rating as a driver, and management should issue a letter of concern, indicating that the employee has a probationary status and the potential of this individual losing their driving privilege.

9 or 10 points indicate that action is needed on the part of management. The individual should have their PCI driving privilege revoked and be offered the opportunity to furnish their own personal vehicle, with a Personally Owned Vehicle for PCI Business Use Agreement.

Drivers with 12 or more points are not acceptable and will not be considered for employment or continued employment.

A driver without a valid license is obviously not acceptable.

PETERSON CONTRACTORS, INC.

ADDRESS REPLY TO:
104 BLACKHAWK STREET
P.O. BOX A
REINBECK, IOWA 50669

HEAVY & HIGHWAY CONTRACTORS

PHONE: (319) 345-2713

FAX: (319) 345-2658

GENERAL WASTE CONROL MANAGEMENT

1. **An adequate number of waste receptacles shall be provided in the general work area(s) and used for the disposal of, but not limited to waste food, cans, bottles, paper, and general trash. Receptacles shall be appropriate for the trash that is anticipated. Receptacles shall be constructed of smooth, corrosion-resistant, easily cleanable, or disposable materials, provided with solid tight-fitting covers, emptied at least daily and maintained in a sanitary condition.**

2. **Receptacles used for solid or liquid waste or refuse shall be constructed to prevent leakage and to allow thorough cleaning and sanitary maintenance. Such receptacles shall be equipped with solid tight-fitting covers unless they can be maintained in sanitary conditions without covers.**

3. **All sweepings, solid or liquid wastes, refuse, and garbage shall be removed in a manner which avoids creating a menace to health and should be discarded as often as necessary or appropriate to maintain sanitary conditions in the place of employment.**

4. **All employees shall be trained in proper waste disposal prior to the start of operations. PCI does not work with hazardous wastes. Employees will be instructed on sorting wastes for disposal to appropriate landfills or recycling centers.**

Hazard: Ground Personnel

Peterson Contractors, Inc.		
Job Safety Analysis	**Activity Description:** Monitor operation to ensure compliance with specifications and site safety	
	Required Equipment: Ground Personnel / Labor	
Principal Activity Steps	**Potential Hazards**	**Recommended or Required Controls**
Monitor excavations and earth moving operations. Perform labor practices as directed.	Contact with mechanized equipment	Have equipment operator's attention when approaching. Do not approach from the equipment operator's blind side. Be aware of moving equipment. All equipment has the right of way.
Elevated surfaces	Falls	Be sure hand / guard rails are in place. Beware of fall potential
	Open excavations	Watch for and approach open excavations with caution. Barricade or use caution tape as is appropriate.
Lifting	Strain	Use proper lifting techniques Get another person or machine to help lift
Climbing	Slips - Falls	Use ladders for climbing.

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Grading

Required Equipment: Bulldozer

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Move onto site - unload from trailer, track to start location.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.
Move material as required	Ingress and egress	Ensure dozer approaches and departs from specific direction. Rotate excavator boom in opposite direction to allow ingress from dozer.

PETERSON CONTRACTORS, INC.

ADDRESS REPLY TO:
104 BLACKHAWK STREET
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REINBECK, IOWA 50669

HEAVY & HIGHWAY CONTRACTORS

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FAX: (319) 345-2658

Ground–Fault Protection on Construction Sites

Peterson Contractors has no qualified employees and does no electrical work. During normal operations PCI employees may come into contact or near contact to electrically live lines. The following training is provided to each new employee during new hire orientation and the annually thereafter. No PCI employee is authorized to perform electrical installation or maintenance.

Insulation and Grounding

Insulation and grounding are two recognized means of preventing injury during electrical equipment operation. Conductor insulation may be provided by placing nonconductive material such as plastic around the conductor. Grounding may be achieved through the use of a direct connection to a known ground such as a metal cold water pipe.

Consider, for example, the metal housing or enclosure around a motor or the metal box in which electrical switches, circuit breakers, and controls are placed. Such enclosures protect the equipment from dirt and moisture and prevent accidental contact with exposed wiring.

However, there is a hazard associated with housings and enclosures. A malfunction within the equipment—such as deteriorated insulation—may create an electrical shock hazard. Many metal enclosures are connected to a ground to eliminate the hazard. If a "hot" wire contacts a grounded enclosure, a ground fault results which normally will trip a circuit breaker or blow a fuse. Metal enclosures and containers are usually grounded by connecting them with a wire going to ground.

This wire is called an equipment-grounding conductor. Most portable electric tools and appliances are grounded by this means. There is one disadvantage to grounding: a break in the grounding system may occur without the user's knowledge.

Insulation may be damaged by hard usage on the job or simply by aging. If this damage causes the conductors to become exposed, the hazards of shocks, burns, and fire will exist. Double insulation may be used as additional protection on the live parts of a tool, but double insulation does not provide protection against defective cords and plugs or against heavy moisture conditions.

The use of a ground–fault circuit interrupter (GFCI) is one method used to overcome grounding and insulation deficiencies.

What is a GFCI?
The ground–fault circuit interrupter (GFCI) is a fast–acting circuit breaker which senses small imbalances in the circuit caused by current leakage to ground and, in a fraction of a second, shuts off the electricity. The GFCI continually matches the amount of current going to an electrical device against the amount of current returning from the device along the electrical path. Whenever the amount "going" differs from the amount "returning" by approximately five milliamps, the GFCI interrupts the electric power within as little as 1/40 of a second.

However, the GFCI will not protect the employee from line–to–line contact hazards (such as a person holding two "hot" wires or a hot and a neutral wire in each hand). It does provide protection against the most common form of electrical shock hazard—the ground fault. It also provides protection against fires, overheating, and destruction of insulation on wiring.

What Are the Hazards?
With the wide use of portable tools on construction sites, the use of flexible cords often becomes necessary. Hazards are created when cords, cord connectors, receptacles, and cord– and plug–connected equipment are improperly used and maintained.

Generally, flexible cords are more vulnerable to damage than is fixed wiring. Flexible cords must be connected to devices and to fittings so as to prevent tension at joints and terminal screws. Because a cord is exposed, flexible, and unsecured, joints and terminals become more vulnerable. Flexible cord conductors are finely stranded for flexibility, but the strands of one conductor may loosen from under terminal screws and touch another conductor, especially if the cord is subjected to stress or strain.

A flexible cord may be damaged by activities on the job, by door or window edges, by staples or fastenings, by abrasion from adjacent materials, or simply by aging. If the electrical conductors become exposed, there is a danger of shocks, burns, or fire. A frequent hazard on a construction site is a cord assembly with improperly connected terminals.

When a cord connector is wet, hazardous leakage can occur to the equipment-grounding conductor and to humans who pick up that connector if they also provide a path to ground. Such leakage is not limited to the face of the connector but also develops at any wetted portion of it.

When the leakage current of tools is below one ampere, and the grounding conductor has a low resistance, no shock should be perceived. However, should the resistance of the equipment-grounding conductor increase, the current through the body also will increase. Thus, if the resistance of the equipment-grounding conductor is significantly greater than one ohm, tools with even small leakages become hazardous.

Preventing and Eliminating Hazards
GFCIs can be used successfully to reduce electrical hazards on construction sites. Tripping of GFCIs—interruption of current flow—is sometimes caused by wet connectors and tools. It is good practice to limit exposure of connectors and tools to excessive moisture by using watertight or sealable connectors. Providing more GFCIs or shorter circuits can prevent tripping caused by the cumulative leakage from several tools or by leakage from extremely long circuits.

Employer's Responsibility
OSHA ground–fault protection rules and regulations have been determined necessary and appropriate for employee safety and health. Therefore, it is this company's responsibility to provide either:

1. Ground–fault circuit interrupters on construction sites for receptacle outlets in use and not part of the permanent wiring of the building or structure; or
2. A scheduled and recorded assured equipment grounding conductor program on construction sites, covering all cord sets, receptacles which are not part of the permanent wiring of the building or structure, and equipment connected by cord and plug which are available for use or used by employees.
3. Supervisors on each job site are designated as the competent person and are responsible for enforcing and following this program.

Ground–Fault Circuit Interrupters
This company will provide ground–fault circuit interrupters for all 120–volt, single phase, 15 and 20 ampere receptacle outlets on construction sites which are not a part of the permanent wiring of the building or structure, and which are in use by employees. Receptacles on the ends of extension cords are not part of the permanent wiring and, therefore, must be protected by GFCIs whether the extension cord is plugged into permanent wiring.

These GFCIs monitor the current–to–the–load for leakage to ground. When this leakage exceeds five mA. ± one mA, the GFCI interrupts the current. They are rated to trip quickly enough to prevent electrocution. This protection is required in addition to, not as a substitute for, the grounding requirements of OSHA safety and health rules and regulations, 29 CFR 1926.

The requirements that the employer must meet, if he or she chooses the GFCI option, are stated in 29 CFR 1926.404(b)(1)(ii) and will be made available to any employee who wishes to review it.

Electrical Safety: Electricity flows to the equipment on a hot (+) wire that is usually red, blue, or black. It flows back from the equipment on a grounded (-) wire that is usually white or gray. If the amount of power returning is not equal to the amount of power going in, or is short, some electricity has gotten loose and can be dangerous. Loose electricity will follow the path of least resistance to get to ground. A grounding or insurance wire that is usually green or bare copper, connected to the ground pin, provides the path of least resistance for loose power to follow to ground. A piece of equipment that has had the ground pin removed can be dangerous. A ground fault circuit interrupter (GFCI) measures the flow of electricity on a line. If the two are not equal the GFCI will immediately shut off the flow of power. Do not make repairs to equipment, cords, plugs, etc., unless you are qualified to do so. The most common cause of electrocutions on the job is from using the wrong type or damaged extension cords. Check cords before each use, remove a damaged cord from service. Do not use cords that have damaged insulator covering or damaged plugs. Use only extension cords that have grounding pins and grounding pin receptacles. Use only cords that are approved for hard and extra hard service. These cords will be marked with approved codes: S, ST, SO, STO, SJ, SJO, SJT, and SJTO. If a cord is damaged in any way, missing a ground pin, has damaged insulative covering, remove it from service immediately. Keep yourself and all equipment at least 10 feet from any power line. Distance increases as the

voltage increases. See your supervisor for safe distances. Treat all power lines as if they are energized. Do not assume the lines are de-energized. PCI employees will not enter any structures or vaults with exposed energized parts – day or night.

Lockout / Tagout: In a situation where the unexpected startup of machinery or release of stored energy could occur, Lockout / Tagout rules apply. To isolate a piece of equipment:

- Turn the equipment off using the normal controls. Press the stop button, flip the toggle switch, close the valve, etc. Allow the unit to stop.
- Ensure area personnel are aware you are taking the unit out of service and will be working on it.
- Isolate the equipment's energy source. Unplug it, turn off the circuit breaker, close the valve, etc.
- Preferably apply a padlock with identification tag - Lockout. Use a tag only if a padlock application is not possible – Tag Out.
- Relieve stored energy from springs, hydraulic systems, air pressure, elevated parts, etc.
- Make sure moving parts such as rotating blades, fly wheels, etc. have come to a complete stop. Block items that may move or rotate.
- Perform the needed work.
- When finished and ready to resume work, ensure tools and extra materials have been removed, guards have been replaced, area personnel are aware you are about to restart the machine.

NEVER remove or tamper with some else's lock or tag. Removing another employee's lock or tag will result in immediate termination.

Ladder Safety:
Ensure ladders are loaded in such a way to not exceed their rated capacity. Ladders must be inspected prior to each use. Feet must be in place and in good condition. Rails and rungs must not be bent or damaged. Rungs must be uniformly spaced and meet OSHA requirements. Homemade ladders are not allowed unless prior approval is obtained, and the ladder is inspected after construction and prior to use to insure it meets OSHA requirements. When extension ladders are set up, use a ratio of 1 foot out from the base for every 4 feet of height. If the ladder is set up on a ledge that is 12 feet high, the foot of the ladder should be 4 feet out from the base. The top of the ladder must extend 3 feet above the landing area. Tie or otherwise attach the ladder near the top to prevent movement. Never reach more than an arm's length beyond the side rails of the ladder. Never use bricks, blocks, or other unstable footing materials. Never jump from a ladder. Climb all the way down. Do not sit, stand, or climb on the top two steps of a stepladder. Never use a stepladder like a straight ladder. Make sure stepladders are fully open and the spreaders are in the locked position before climbing. Ladders must be insulated and electrically non-conductive.

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Grouted Pier Removal

Required Equipment: Pneumatic jack hammer, excavator, demo saw

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Remove top of pier with saw and/or chipping hammer	Noise	Hearing protection required
	Flying particulates	Face protection required
	Vibration	Padded palm gloves required
Clean, form, and pour concrete to bring pier to height	Shovel, brush, and wash top of pier.	Proper ergonomics
	Form pier with appropriate form	Proper ergonomics. Wear gloves
	Pour concrete	Wear gloves Proper traffic controls for vehicular traffic - Concrete mixer trucks Provide spotters

HAND AND POWER TOOLS

GENERAL

1. Power tools shall be of a manufacture listed by a nationally recognized testing laboratory for the specific application for which they are to be used.
2. Use, inspection, and maintenance.

a. Hand and power tools shall be used, inspected, and maintained in accordance with the manufacturer's instructions and recommendations and shall be used only for the purpose for which designed. A copy of the manufacturer's instructions and recommendations shall be maintained with the tools.

b. Hand and power tools shall be inspected, tested, and determined to be in safe operating condition before use. Continued periodic inspections shall be made to assure safe operating condition and proper maintenance.

c. Hand and power tools shall be in good repair and with all required safety devices installed and properly adjusted. Tools having defects that will impair their strength or render them unsafe shall be removed from service.

3. Guarding.

a. Power tools designed to accommodate guards shall be equipped with such guards. All guards must be functional.

b. Reciprocating, rotating, and moving parts of equipment shall be guarded if exposed to contact by employees or otherwise create a hazard.

4. When work is being performed overhead, tools not in use shall be secured or placed in holders.
5. Throwing tools or materials from one location to another or from one person to another, or dropping them to lower levels, shall not be permitted.
6. Only non-sparking tools shall be used in locations where sources of ignition may cause a fire or explosion.
7. Tools requiring heat treating or redressing shall be tempered, formed, dressed, and sharpened by personnel who are experienced in these operations.
8. The use of cranks on hand-powered winches or hoists is prohibited unless the hoists or winches are provided with positive self-locking dogs. Hand wheels with exposed spokes, projecting pins, or knobs shall not be used.
9. Hydraulic fluid used in powered tools shall retain its operating characteristics at the most extreme temperatures to which it will be exposed.
10. Manufacturers' safe operating pressures for hydraulic hoses, valves, pipes, filters, and other fittings shall not be exceeded.
13. All hydraulic or pneumatic tools that are used on or around energized lines or equipment shall have non-conducting hoses of adequate strength for the normal operating pressures.
12. When fuel-powered tools are used in confined or enclosed spaces, the requirements for concentrations of toxic gases as outlined in Sections 5 and 34 of this manual, shall apply.
13. Clothing.

a. PPE shall be used as outlined in Sections 5 of this manual.

b. Loose and frayed clothing, loose long hair, dangling jewelry (including dangling earrings, chains, and wrist watches) shall not be worn while working with any power tool.

14. See OSHA and state regulations for grounding requirements.
15. The electrical power control shall be provided on each machine/power tool to make it possible for the operator to cut off the power for the machine/power tool without leaving the point of operation.
16. Where injury to the operator may result if motors were to restart after power failures, provisions shall be made to prevent machines/power tools from automatically restarting upon restoration of power.
17. Floor- and bench−mounted power tools shall be anchored or securely clamped to a firm foundation. Anchoring or securing shall be sufficient to withstand lateral or vertical movement.

GRINDING AND ABRASIVE MACHINERY

1. With the exception of the following, abrasive wheels shall be used only on machines provided with safety guards: ***> See ANSI B74.2 for descriptions of abrasive wheel types.***

a. Wheels used for internal work while within the work being ground.

b. Mounted wheels, 2 in (5 cm) and smaller in diameter, used in portable operations.

c. Types 16, 17, 18, 18R, and 19 cones and plugs and threaded hole pot balls where the work offers protection or where the size does not exceed 3 in (7.6 cm) in diameter by 5 in (12.7 cm) long.

d. Type 1 wheels not larger than 2 in (5 cm) in diameter and not more than ½ in (1.2 cm) thick, operated at peripheral speeds less than 1800 surface-feet per minute (ft/min) (9.1 surface-m/s) when mounted in mandrels driven by portable drills.

e. Type 1 reinforced wheels not more than 3 in (7.6 mm) in diameter and ¼ in (6 mm) in thickness, operating at peripheral speeds not exceeding 9500 surface-ft/min (48.3 surface-m/s), if safety glasses and face shield protection are worn.

2. Tongue guards on bench/stand grinders shall be adjustable to within ¼ in (6 mm) of the constantly decreasing diameter of the wheel at the upper opening.

3. Grinders shall be supplied with power sufficient to maintain the spindle speed at safe levels under all conditions of normal operation.

4. Work or tool rests shall not be adjusted while the grinding wheel is in motion.

5. Work/tool rests on power grinders shall not be more than 1/8 in (3 mm) distance from the wheel.

6. Abrasive wheels shall be closely inspected and ring-tested before mounting. Cracked or damaged grinding wheels shall be destroyed.

7. Grinding wheels shall not be operated in excess of their rated safe speed.

8. Floor stand and bench-mounted abrasive wheels used for external grinding shall be provided with safety guards (protective hoods).

a. The maximum angular exposure of the grinding wheel periphery and sides shall be not more than 90°, except that when work requires contact with the wheel below the horizontal plane of the spindle the angular exposure shall not exceed 125°; in either case, the exposure shall begin not more than 65° above the horizontal plane of the spindle.

b. Safety guards shall be strong enough to withstand the effect of a bursting wheel.

POWER SAWS AND WOODWORKING MACHINERY

1. Woodworking machinery shall be operated and maintained in accordance with ANSI 01.1.

2. Guarding.

a. Circular saws shall be equipped with guards that automatically and completely enclose the cutting edges, splitters, and anti-kickback devices.

b. Portable power-driven circular saws shall be equipped with guards above and below the base plate or shoe.

(1) The upper and lower guards shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts and for the minimum arc required to allow proper retraction and contact with the work, respectively.

(2) When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to the covering position.

c. Blades of planers and jointers shall be fully guarded and have cylindrical heads with throats in the cylinder.

d. Band saw blades shall be fully enclosed except at the point of operation.

3. Automatic feeding devices shall be installed on machines whenever possible. Feeder attachments shall have the feed rolls or other moving parts covered or guarded so as to protect the operator from hazardous points.

4. The operating speed shall be permanently marked on circular saws more than 20 in (50.8 cm) in diameter or operating at over 10,000 peripheral ft/minute (min) (50.8 peripheral m/s).

a. Any saw so marked shall not be operated at a speed other than that marked on the blade.

b. When a marked saw is re-tensioned for a different speed, the marking shall be corrected to show the new speed.

5. Radial arm power saws shall be equipped with an automatic brake.

13.C.06 The table of radial arm or swing saws shall extend beyond the leading edge of the saw blade.

7. Radial arm power saws shall be installed in such a manner that the cutting head will return to the starting position when released by the operator. All swing cutoff and radial saws or similar machines that are drawn across a table shall be equipped with limit stops to prevent the leading edge of the tool from traveling beyond the edge of the table.
8. Each hand-fed crosscut table saw and each hand-fed circular ripsaw shall have a spreader to prevent the material from squeezing the saw or being thrown back on the operator.
9. Operating procedures.
a. Band saws and other machinery requiring warm-up for safe operation shall be permitted to warm up before being put into operation whenever the temperature is below 45 °F (7 °C).
b. A push-stick, block, or other safe means shall be used on all operations close to high-speed cutting edges.
c. The use of cracked, bent, or otherwise defective parts such as saw blades, cutters, or knives is prohibited.
d. A brush shall be provided for the removal of sawdust, chips, and shavings on all woodworking machinery.
e. Power saws shall not be left running unattended.

PNEUMATIC TOOLS
1. Safety clips or retainers shall be installed and maintained on pneumatic impact tools to prevent dies and tools from being accidentally expelled from the barrel.
2. Pressure shall be shut off and exhausted from the line= before disconnecting the line from any tool or connection.
3. Safety lashing shall be provided at connections between tool and hose and at all quick makeup type connections.
4. Hoses shall not be used for hoisting or lowering tools.
5. Airless spray guns of the type which atomize paints and fluids at high pressures (1,000 lb. (453.5 kg) or more) shall be equipped with automatic or visible manual safety devices that will prevent pulling of the trigger to prevent release of the paint or fluid
until the safety device is manually released. In lieu of the above, a diffuser nut that will prevent high-pressure velocity release while the nozzle tip is removed plus a nozzle tip guard that will prevent the tip from coming into contact with the operator, or other equivalent protection may be provided.
6. Impact wrenches shall be provided with a locking device for retaining the socket.

EXPLOSIVE-ACTUATED TOOLS
1. Explosive-actuated (powder-actuated) tools shall meet the design requirements of ANSI A10.3.
2. Only qualified operators shall operate explosive-actuated tools. A qualified operator is one who has:
a. Been trained by an authorized instructor (one who has been trained, authorized, and provided an authorized instructor's card by the tool manufacturer or by an authorized representative of the tool manufacturer).
b. Passed a written examination provided by the manufacturer of the tool; and
c. Possesses a qualified operator's card supplied by the manufacturer and issued and signed by both the instructor and the operator.
3. Each tool shall be provided with the following:
a. A lockable container with the words "**POWDERACTUATED TOOL**" in plain sight on the outside and a notice reading "**WARNING - POWDER-ACTUATED TOOL TO BE USED ONLY BY A QUALIFIED OPERATOR AND KEPT UNDER LOCK AND KEY WHEN NOT IN USE**" on the inside.
b. Operator’s instruction and service manual.
c. Power load and fastener charts.
d. Tool inspection record; and
e. Service tools and accessories.
4. Inspection and testing.
a. Daily inspection, cleaning, and testing shall be performed as recommended by the manufacturer.
b. Explosive-actuated tools shall be tested, in accordance with the manufacturer's recommended procedure, each day before loading to see that safety devices are in proper working condition.

c. Explosive-actuated tools shall be inspected, thoroughly cleaned, and tested after each 1,000 fastenings.
5. Explosive-actuated tools and the charges shall be always secured to prevent unauthorized possession or use.
6. Explosive-actuated tools shall not be loaded until just before the intended firing time. Neither loaded nor empty tools are to be pointed at any employees. Hands shall be kept clear of the open barrel end.
7. The use of explosive-actuated tools is prohibited in explosive or flammable atmospheres.
8. Fasteners shall not be driven:
a. Into soft or easily penetrable materials unless they are backed by a material that will prevent the fastener from passing through to the other side.
b. Into very hard or brittle material, such as cast iron, hardened steel, glazed or hollow tile, glass block, brick, or rock.
c. Into concrete unless the material thickness is at least three times the penetration of the fastener shank; or
d. Into salted concrete.
9. The tool operator shall wear safety goggles or other face and eye protection.

CHAIN SAWS
1. Chain saws shall have an automatic chain brake or kickback device.
2. The idle speed shall be adjusted so that the chain does not move when the engine is idling.
3. Operators will wear proper PPE. Eye, ear, hand, foot (safety shoes), and leg protection are required as a minimum.
4. Chain saws will not be fueled while running, while hot, or near an open flame. Saws will not be started within 10 ft (3 m) of a fuel container.
5. The operator will hold the saw with both hands during all cutting operations.
6. A chain saw must never be used to cut above the operators' shoulder height. requirements.

ABRASIVE BLASTING EQUIPMENT
1. Hose and hose connections shall be designed to prevent buildup of static electricity.
2. Connections and nozzles shall be designed to prevent accidental disengagement. All connections shall be equipped with safety lashings.
3. Nozzle attachments shall be of metal and fit on the outside of the hose. A dead man-type control device shall be provided at the nozzle to cut off the flow if the operator loses control of hose. A support shall be provided on which the nozzle may be mounted when it is not in use.

POWER-DRIVEN NAILERS AND STAPLERS
1. This section applies to hand-held electric, combustion or pneumatically driven nailers, staplers, and other similar equipment (heretofore referred to as “nailers” in this section) which operate by ejecting a fastener into the material to be fastened when a trigger, lever, or other manual device is actuated. This does not apply to common spring-loaded “staple guns”.
2. Nailers shall have a safety device on the muzzle to prevent the tool from ejecting fasteners unless the muzzle is in contact with the work surface. The contact trip device or trigger shall not be secured in an “on” position.
3. Nailers shall be operated in a way to minimize the danger to others and the operator from ricochets, air-firing, and firing through materials being fastened.
a. Except when used for attaching sheet goods (sheathing, sub-flooring, plywood, etc.) or roofing products, nailers shall be operated with a sequential trigger system that requires the surface contact trip device to be depressed before the firing trigger can be activated and that limits ejection to one nail per trigger pull before resetting.
b. When used for sheet goods and roofing materials, nailers may be operated in the contact trip mode (bump or bounce nailing) only as allowed by the manufacturer. This mode may only be used when the operator has secure footing, such as on a work platform, floor, or deck, and shall not be used when the operator is on a ladder, beam, or similar situations where the operator’s balance and/ or reach may be unstable.

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Hazard Identification & Risk Assessment

Based upon the study of past accidents and industry recommendations, a safety-training program has been implemented. Employees will be specifically trained on the hazard identification process during the new hire orientation and training and then annually thereafter. In addition, to other preventative practices, there will be a group discussion of the cause of any accident and methods to avoid the type of accidents and injury situations experienced in the past. JSA's for the appropriate machinery and work practice will be reviewed prior to the start of operations. Work rules will be reviewed and modified based upon the study of these accidents.

In addition to historical information, workplace safety depends on workplace observation. Foremen are responsible for inspecting the work area daily; before, during, and after each shift. Employees are also responsible for inspecting the work area during every shift as well. Each day, before beginning work, employees are to inspect the work area for any dangerous or questionable conditions and inform the foreman of anything significant or suspicious. In the unlikely event that Sub- contractors are used, the sub-contractors' employees will be required to participate in the programs prior to the start of operations. Employees may be given written communications regarding unsafe conditions or serious concealed dangers.

All employees are to review this communication carefully and adjust their workplace behavior to avoid any danger or hazards. If unclear or unsure of the significance of this written communication, they are to contact their foreman and review planned actions or instructions before starting to work. It is better to wait and check, than to go ahead and possibly cause an injury or accident.

Merely identifying the problem is not sufficient. The danger must be reported to the foreman and to the Site Safety Director, who will then correct/mitigate the problem. If multiple hazards exist, the hazards will be classified, addressed, and mitigated on a worst first basis. If the danger cannot be corrected, all workers will be warned to take protective action so that the danger will not result in any injuries.

Peterson Contractors, Inc.

Hazardous Energy Control Program

(Lock Out / Tag Out)

I. PURPOSE

The purpose of this program is to protect employees from injuries while servicing and maintaining equipment.

II. SCOPE

The program establishes requirements for hazardous energy control. It is to be used to ensure that machines and equipment are isolated from the release of all potentially hazardous energy sources whenever servicing or maintenance activities are in progress. Lockout is the preferred method of hazardous energy control. Tag Out should only be used when lockout procedures are not possible.

III. RESPONSIBILITY

1. The Safety Officer is designated as the Program Coordinator for Peterson Contractors, Inc. Specific responsibilities include:

a. Provide Hazardous Energy Control training to employees.

b. Maintain a current listing of employees who have completed lockout training (Attachment 1).

c. Maintain a current listing of all equipment/machines which fall under the Hazardous Energy Control program (Attachment 2). Listing is to be updated each time a change occurs.

d. Implementation and enforcement of this program.

e. Maintain an adequate supply of padlocks and DANGER tags for use each time a lockout process is performed. Padlocks and tags are located at the machine site.

f. Conduct the annual inspection & review.

2. Each supervisor is responsible for the effective use of this program at the work site and to see that all required procedures are followed in every instance.

3. Each employee is responsible for learning and following the procedures and practices developed under this program. Notify the Program Coordinator in the event that a lockout process deviates from or is not adequate for the prescribed lockout procedure.

IV. BASIC LOCKOUT PRINCIPLES

All equipment must be locked out to protect against accidental or inadvertent operation or release of energy when operation or release of energy could cause injury to personnel. Locks are to be applied and removed only by authorized employees who are performing the servicing or maintenance.

No one should attempt to operate locked out equipment.

Disciplinary action will be applied if any employee violates these procedures, regardless of whether or not physical harm or equipment damage results.

Lockout devices (padlocks) with an appropriate DANGER warning tag shall be used only for energy control. Prior to the servicing or maintenance of equipment, the employee shall obtain a padlock and DANGER warning tag. Each padlock will be keyed differently with no master key or duplicate keys available.

V. TRAINING

Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.

Each affected employee shall be instructed in the purpose and use of the energy control procedure.

All other employees who do not work in areas where lockout may be used will be provided a brief overview of the lockout program.

Training in lockout will be given to all new employees as a part of their orientation. Retraining will be conducted annually, whenever there is a change in job assignment, a change in machinery or equipment or process change that presents a new hazard.

Names of authorized employees who have received appropriate lockout training will be identified on the Hazardous Energy Control Training Record (Attachment 1).

VI. LOCKOUT

A. SEQUENCE OF LOCKOUT:

The following are specific procedures to be followed for lockout.

1. Notify the site supervisor.

2. Notify all affected employees that lockout is going to be utilized and the reason why.

3. If the machine/equipment is in operation, shut it down by the normal shutdown procedure.

4. Operate the appropriate switch, valve, etc., so that the machine/equipment is isolated from the energy source.

5. Lock the energy isolating devices, using assigned locks and danger tags. Each authorized employee shall apply a lock.

6. Release, restrain, or dissipate any stored energy.

7. Verify that energy isolation is complete, by attempting to start the affected machinery or equipment in the normal manner.

8. After testing, return all operation controls to the "neutral" or "off" positions.

B. RESTORATION TO NORMAL:

1. After service or maintenance is complete, check the area to ensure that no employees are exposed.

2. Remove all tools and repair equipment.

3. Ensure that all guards have been replaced and all safety interlocks reactivated (if so equipped).

4. Verify that the operating controls are in the "off" or neutral position.

5. Remove all lockout and tag devices and activate the energy isolation devices to restore energy.

VII. PROGRAM INSPECTION AND REVIEW

At least annually, a designated representative will verify the effectiveness of the energy control procedures. These inspections shall provide for a demonstration of the procedures and may be carried out through random audits and observations.

The inspector must review the Hazardous Energy Control Procedure with all authorized employees and observe the use of the Hazardous Energy Control Procedure. This inspection must be certified and documented by the inspector using a Hazardous Energy Control Lockout Program Inspection form. (Attachment 3).

These inspections are to ensure that the energy control procedures are being properly used, and to provide a check on the continued adherence to the procedures. Management must certify that the prescribed inspections have been performed. Any deficiencies must be corrected immediately, either by modification of the procedure, retraining of employees, or a combination of both.

VIII. OUTSIDE CONTRACTORS

Outside personnel or contractors involved in lockout of equipment or machinery that affects PCI employees must submit their energy control procedures, in writing, to the Program Coordinator. All affected employees must be trained in and familiar with the contractor's submitted procedure. The contractor must assure compliance with proper work procedures, energy isolation procedures and contractor employee compliance.

Contractors failing to adhere to the provisions of the OSHA Hazardous Energy Control standard will be asked to terminate their work until their program is brought into compliance.

Peterson Contractors, Inc.

Attachment 1

HAZARDOUS ENERGY CONTROL

PROGRAM TRAINING RECORD

The following company employees have received Hazardous Energy Control (Lockout) training.

All new hire employees shall receive LOTO training and verification can be found on their Receipt of Handbook sign off.

Annual Retraining can be verification can be found on the Receipt of Handbook sign off.

Peterson Contractors, Inc.

Attachment 2

HAZARDOUS ENERGY CONTROL

LOCKOUT EQUIPMENT LISTING

The following machines and equipment fall under the requirements of 29 CFR 1910.147, the Control of Hazardous Energy (Lockout/Tagout). For this reason, appropriate lockout procedures must be performed each time servicing or maintenance is performed.

EQUIPMENT/MACHINE

Portable Crusher Number 1

Portable Crusher Number 2

Grain Elevator / Dryer Facility

Peterson Contractors, Inc.

Attachment 3 - 1

HAZARDOUS ENERGY CONTROL

ANNUAL LOCKOUT PROGRAM INSPECTION

DATE: _____

EQUIPMENT IDENTIFICATION: _____

INSPECTION:

AUTHORIZED EMPLOYEES (JOB TITLES)

1. _____ _____

2. _____ _____

3. _____ _____

4. _____ _____

5. _____ _____

6. _____ _____

PROCEDURES BEING FOLLOWED: Y / N

COMMENTS/DEFICIENCIES: _____

_____

_____

_____

DEFICIENCY FOLLOW-UP:_____Date: _ /_____/ ____

COMMENTS: _____

REVIEWED BY:_____DATE:_____/_____/ ____

COMMENTS: _____

Peterson Contractors, Inc.

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HAZARD COMMUNICATION PROGRAM

HAZARD COMMUNICATION PROGRAM

GENERAL PURPOSE & SCOPE

The Hazard Communication Program has been developed to:

1. Provide information to employees about the hazardous chemicals to which they may be exposed, in order to safeguard their health and wellbeing.
2. Address comprehensively the issues of evaluating the potential hazards of chemicals and communicating information concerning hazards and appropriate protective measures to safeguard employees.
3. Addresses the list of hazardous chemicals present; the labeling of containers in the workplaces; distribution of Safety Data Sheets to employees upon request; locations and availability of SDS and the Hazard Communication Program.

The Hazard Communication Program has been developed and implemented pursuant to requirements set forth in the Federal Occupational Safety and Health Standard 29 CFR 1910.1200, 1926.59, and 30CFR Part 42.

TABLE OF CONTENTS

RESPONSIBILITIES

SAFETY MANAGER

- Provides training materials
- Provides training for routine and non-routine tasks
- Reviews methods to detect the presence of hazardous chemicals
- Inspects first aid kits
- Reviews the location of the Hazard Communication posting or books
- Reviews the locations and availability of the written Hazard Communication program
- Monitors and maintains documentation of employer training
- Audits container labeling to ensure compliance
- Maintains copies of SDS for the facility or job site
- Ensures the contractors are given access to the SDS of chemicals they may be exposed to

SUPERVISORS

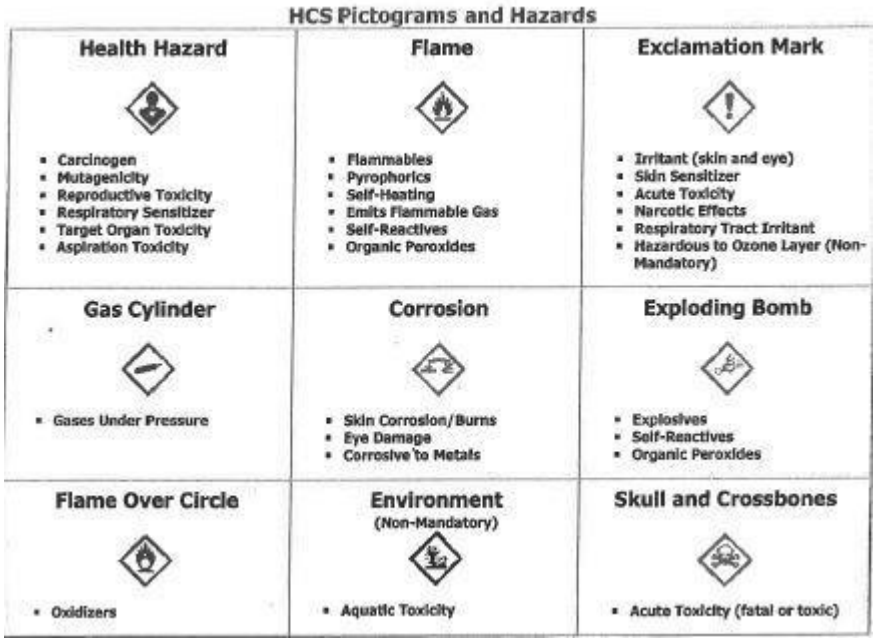
- Ensures SDS are available to employees upon request
- Audit container labeling to ensure compliance
- Ensures accurate documentation is maintained for chemicals employees are to handle
- Ensures employees receive non-routine training when required
- Ensures SDS are received before use of chemicals, including single use products
- Ensures SDS are received from the supplier and forwarded to the Safety Department office
- Ensures employees read and follow manufacturers use recommendations

Paints, fuels, lubricants, concrete, coatings, etc. are all “hazardous substances” that you may come into contact with while on the job site. For this reason, PCI has a written Hazard Communication Program that includes.

- Hazard Evaluation: Chemical manufacturers are required to evaluate their products and publish a Safety Data Sheet (SDS). The SDS must be furnished with each shipment of their product to the customer. SDS details the chemical properties, hazards, PPE, and clean up procedures for their product.
- Container Labeling: All shipping containers must have product warning labels. Labels will provide initial information about the

product, the manufacturer, its uses, hazards, and required PPE. More detailed information is found of the SDS.

- Safety Data Sheets (SDS); SDS are filed in a three-ring notebook, located in the supervisor's truck and in most cases also in the site job trailers. They are filed alphabetically by product name. SDS give information about the product, its hazards, proper use, clean up, and disposal.
- In the event that work will be performed on a site where exposure to benzene is possible, additional training by a third party is required. Monitoring equipment and additional PPE may also be required.



All new SDS will have a uniform layout throughout the industry. Sections are:

Section 1: Identification includes product identifier, manufacture or distributor name, address phone, emergency phone, recommended use, and restriction on use.
Section 2: Hazard(s) Identification includes all hazards regarding the chemical and required label elements.
Section 3: Composition/Information on Ingredients includes information on chemical ingredients and trade secret claims.
Section 4: First-Aid Measures includes important symptoms/effects, acute or delayed and required treatment.
Section 5: Fire-fighting Measures lists suitable extinguishing techniques, equipment, and chemical hazards from fire.

Section 6: Accidental Release Measures lists emergency procedures, protective equipment, proper methods of containment, and cleanup.
Section 7: Handling and Storage lists precautions for safe handling and storage, including incompatibilities.
Section 8: Exposure Controls/Personal Protection lists OSHA's Permissible Exposure Limits (PEL's), Threshold Limit Values (TLV's), appropriate engineering controls, and personal protective equipment (PPE).
Section 9: Physical and Chemical Properties lists the chemical's characteristics.
Section 10: Stability and Reactivity lists chemical stability and possibility of hazardous reactions.
Section 11: Toxicological Information includes routes of exposure, related symptoms, acute and chronic effects, and numerical measures of toxicity.
Section 12: Ecological Information.
Section 13; Disposal considerations.
Section 14: Transport Information.
Section 15: Regulatory Information.
Section 16; Other Information, including the date of preparation or last revision.

HAZARDOUS CHEMICALS IDENTIFICATION

There is a master list, which contains all chemicals used throughout the Company. Chemicals are listed in alphabetical order by product name.

CHEMICAL FORMAT

- Product name
- Date of the SDS
- Manufacturer
- Distributor

In many instances, a chemical or product is known by a common name rather than the chemical or product name. The common name may be included in the chemical list with the common name listed under the General Description section. For example, ammonia gas or liquid ammonia are the common names for anhydrous ammonia.

MASTER CHEMICAL LIST

The Safety Department maintains the original master list of all hazardous chemicals in the Company. The hazardous chemical list is updated whenever new chemicals are introduced or SDS's are revised. Copies of this Master Chemical List and SDS's are located at the following locations:

- Safety Office
- Supervisors' pick-up trucks
- Job trailers as appropriate

SAFETY DATA SHEET (SDS)

The SDS must be included with every hazardous chemical that enters the work site. This SDS is the source for providing detailed hazard information and ensuring the user's safety. How the SDS are obtained and maintained are as follows:

NEW CHEMICAL

All new chemical purchases should be evaluated and approved by the Safety Department prior to purchasing or use. This includes one-time use products and samples. The hazardous chemical which presents the least hazardous exposure should be purchased whenever possible.

HOW TO OBTAIN SDS(s)

The purchaser is responsible for obtaining a SDS for a new chemical prior to use or at the time of delivery of the chemical. The following procedure will be utilized to ensure that a SDS is present for all chemicals received:

- The supervisor will review the master list present in the SDS book to verify the chemical is on the list.
- When a SDS is received by the supervisor, the issue date of the newly received SDS will be compared to the SDS on file to ensure the most current SDS is present.
- If the chemical is not on the master chemical list or the SDS is not present, the supervisor will not use the chemical until the SDS has been received. Additionally, the supervisor will make a copy of the SDS and insert it into his book(s). The original will then be forwarded to the Safety Department.

The supervisor will be responsible to ensure SDS(s) are present for all chemicals.

MISSING SDS

- If an SDS that does not accompany a new chemical being introduced, the chemical will <u>not</u> be used until the SDS has been received.
- The supervisor will attempt to obtain a fax of the SDS by notifying the manufacturer or distributor by phone. An original must follow the faxed SDS.
- If a fax of the SDS cannot be obtained, the product will not be used and is to be returned to the vendor.

LABELS

Labels are a form of warning to employees of the hazards related with chemical(s) they may be exposed to. Labels are intermediaries to the SDS, which provides detailed information.

CONTAINER LABELING

All containers that are received must have a label that is readable and complete prior to use. All labels, tags or marking shall contain the following:

1. The identity or contents of the hazardous chemical as identified on the SDS.
2. Hazard warning (which identify the affected target organs such as lungs, liver, etc.) to enable an individual who would be working with the chemical to obtain the correct personal protective equipment.
3. The manufacturer's name and address from whom additional chemical information can be obtained. This additional information may be obtained from the distributor and so stated on the container.

The safety department will be contacted when labels are damaged or do not contain the required hazard information.

AUDITING OF PRODUCT LABELING

The job site supervisors are responsible for ensuring containers of hazardous chemicals are labeled properly within their area(s) of control. This will be accomplished by the following:

1. Audits by the superintendent and safety director.
2. Audits by each supervisor of their respective area with reports to the safety dept.
3. Deficiencies will be addressed and corrected.

SECONDARY CONTAINERS

All secondary containers will be labeled to include the following elements:

1. Chemical name
2. Manufacturer

SHIPPING CONTAINERS

These containers leaving the job site will meet the same requirements as containers entering the facility.

PIPE LABELING

All pipes containing hazardous chemicals will be labeled as to contents.

ROUTINE TRAINING

Every employee who works with or has a potential to be exposed to a hazardous chemical(s) while working will receive routine training. The routine hazard communication training elements consist of the following:

The Occupational Safety and Health Administration (OSHA) and the Mine Safety and Health Administration have developed a Hazard Communication Standard (29 CFR 1910.1200, 1926.59, and 30 CFR Part 42). Peterson Contractors Inc. has SDS's for all hazardous chemicals that are present at the work sites. These SDS's are available to our employees who have the potential of exposure to these hazardous chemicals.

The locations where all SDS's can be found are:

- Supervisors' pick-up trucks
- Jobsite trailers as is appropriate
- Safety office

The location of the master written program is in the HR / Safety Office.

Routine training shall include the following:

1. Locations and availability of the written Hazard Communication Program
2. Locations of Hazard Communication book
3. Review all sections of the Safety Data Sheets, which include the physical and health hazards.
4. Review container labeling
5. Review personal protective equipment
6. Review first aid kit locations
7. Review methods to detect the presence of hazardous chemicals
8. Review routing and non-routine tasks which include safe work practices
9. Review of emergency procedures

NON-ROUTINE TRAINING

All employees who will be using hazardous chemical on an infrequent basis will be properly trained on the safe use and handling by a complete review of the SDS. The immediate supervisor is responsible to ensure the employees receive this training. All employees will be trained/retrained at the time of their initial assignment and/or whenever a new chemical is introduced into the work site.

SAFETY DATA SHEET FORMAT

All SDS's have a minimum of nine sections, which contain important information concerning the hazardous chemical. The following identifies what is typically contained in these sections, although each manufacturer's SDS can vary.

Section 1 - Product Information

- SDS Date
- Manufacturer's Name

- Address
- Emergency Phone Number
- Distributor
- Chemical Name
- Formula
- Part Number
- Category
- Brief Description

The important point to remember is that the manufacturer's name on the container must match the name on the SDS.

Section 2 - Hazardous Ingredients and Exposure Limits

- Hazardous Component(s)
- Case Number
- Ingredients Percent
- Exposure Limit Values
- Permissible Exposure Limits (PEL's)
  (Are time weighted averages (TWA) concentrations that must not be exceeded during any 8-hour work shift, unless noted otherwise.)
- Short Term Exposure Limit (STEL)
  (Is a 15-minute TWA exposure that should not be exceeded at any time during a workday.)
- Immediately Dangerous to Life or Health (IDLH)
  (Represents the maximum concentration from which, in the event of respirator failures, one could escape within 30 minutes without a respirator and without experiencing any escape-impairing or irreversible health effects.)

Normally, the SDS will list the Hazardous Materials Identification System (HMIS) hazard ratings. These ratings range from a low of 0 to a high of 4.

This information is very important. Exposure to hazardous chemicals is based on the exposure limit values identified on the SDS. If your job would require a longer period or at a higher concentration, you will know that additional safety measures such as respiratory equipment may be necessary.

The monitoring equipment utilized will detect as follows:

- O_2 Oxygen
- LEL Combustible Gas
- H_2S Hydrogen Sulfide
- CO Carbon Monoxide

Section 3 - Typical Physical Properties

- Boiling Point
- Vapor Pressure
- Vapor Density
- Solubility in Water
- Appearance and Order
- Specific Gravity

- Percent Volatile / Volume

Miscellaneous Information: Chemtech Phone Number

This information enables the employee to determine how the hazardous chemical will react to a specific temperature or when it is exposed to water. Also, the vapor density of the chemical will determine whether it will fall to a low point. Any chemical with a vapor density of over 1.0 will fall to the low point and will displace oxygen or cause asphyxiation.

By reading the SDS on Ammonia for example, it has a low boiling point, a high vapor pressure, low vapor density and a high percent of volatility. This makes it very likely to present an inhalation hazard, which could require special ventilation or the wearing of self- contained breathing apparatus or other suitable respiratory protection.

Section 4 - Fire and Explosion Hazard Data

- Flash Point
- Lower Explosive Limit (ELL)
- Upper Explosive Limit (EL)
- Special Fire Fighting Procedure
- Unusual Fire and Explosion Hazards

It is necessary to have a proper fuel-to-air (oxygen) ration (% fuel in air) to allow combustion. The SDS give you the range from LEL to UEL for that chemical. Fuel concentrations between LEL and UEL are optimum for starting an explosion. Example: LEL for Hydrogen Sulfide is from 4.0% and the UEL is 44%, the combustible range is from 4% to 44%.

The SDS identifies the type of protective clothing or respiratory equipment needed to fight a fire. It also includes the types of extinguishing material that would be used in case of fire.

Normally the SDS will list the National Fire Prevention Association ratings. These range from a low of 0 to a high of 4.

Section 5 - Health Hazard Data

- Effects of overexposure to: Eyes, Skin, Ingestion, Inhalation
- First aid procedures for: Eyes, Skin, Ingestion, Inhalation

This section describes the routes of entry of the chemical, as well as immediate and long-term health effects. Also, it informs the employee what immediate action must be taken to reduce the severity of the injury. As an example, if a chemical that contains acid splashes into the eyes, the faster the acid is flushed out your eyes with water, the greater probability that the eyesight will be saved.

- Skin Contact and Ingestion:
  Some materials pass through your skin to cause tissue or internal organ damage. The employee could ingest small quantities or material by eating, drinking, or smoking in an area where the chemical is handled.

- Inhalation:
  Normally this is the primary route of entry into the body. There are many chemicals that cannot be detected by an odor. Hydrogen sulfide rapidly fatigues the sense of smell, and the odor cannot be relied upon to warn the employee of continuous presence of H_2S.

Section 6 - Reactivity Data

- Hazardous Polymerization
- Conditions to Avoid
- Incompatibility
- Hazardous Decomposition Products

This information enables the employee to determine where to store and how to handle chemicals in order to prevent a chemical reaction with itself (called polymerization), which causes an accelerated increase in heat and pressure that could result in an explosion.

Ammonia mixed with hypochlorite's (bleach) will produce ammonia or hydrogen chloride gases. Some chemicals will react with metal or non-metal materials. For example, some chemicals will react with rubber, so obviously, the wearing of rubber gloves should be avoided.

Section 7 - Spill or Leak Procedure / Waste Disposal

This section provides the employee with the necessary safety precautions in the event a spill or leak occurs. Also, it provides the necessary steps to be taken for transportation, storage, treatment, and disposal in order to be in compliance with all applicable Federal, State and Local regulations.

Section 8 - Special Protection

- Local Exhaust
- Special Exhaust
- Other Exhaust
- Mechanical Protective Gloves
- Eye Protection
- Respiratory Protection

These protective measures, where applicable, will prevent employee exposure when working with a chemical. It is the responsibility of the employer to provide the employee with the appropriate safety equipment. It is the employee's responsibility to wear this equipment when handling hazardous chemicals.

Section 9 - Special Precautions

- Precautions in Handling and Storage
- Other Precautions
- Additional Information to Add About Product

For example, when working with ammonia, do not wear contact lenses. This could result in blindness. The chemical could become trapped between the surface of the contact lens and the eye, preventing the effectiveness of emergency flushing of the eye.

HAZARD COMMUNICATION OUTLINE OF TRAINING

1. Locations and availability of the written Hazard Communication Program
2. Locations of Hazard Communication book
3. Review all sections of the Safety Data Sheets, which include the physical and health hazards.
4. Review container labeling
5. Review personal protective equipment
6. Review eyewash locations if product requires
7. Review methods to detect the presence of hazardous chemicals
8. Review routing and non-routine tasks which include safe work practices
9. Review of emergency procedures

HAZARD COMMUNICATION QUIZ & VARIFICATION OF TRAINING

True False

_____ _____ 1. SDS sheets are available only from the Safety Office in Reinbeck.

_____ _____ 2. The SDS sheets contain more detailed information than does the container label.

_____ _____ 3. All containers must be labeled with the products name and manufacturer.

_____ _____ 4. SDS sheets tell what personal protective equipment must be worn while using the product.

_____ _____ 5. An HMIS hazard rating of 1 is more hazardous than a rating of 3.

_____ _____ 6. The diamond shaped NFPA label reflects flammability hazards.

_____ _____ 7. The SDS sheet will give first aid information for exposure victims.

_____ _____ 8. The written Hazard Communication Program is found in all SDS books.

Verification of Training

Yes No

_____ _____ I am familiar with SDS sheets and container labeling.

_____ _____ I understand where to find and how to determine what personal protective equipment is needed when working with hazardous products or chemicals.

_____ _____ I know where the SDS sheets and written program are kept.

_____ _____ I have been instructed on how to read the SDS and product labels.

_____ _____ I know where first aid supplies are kept.

_____ _____ I know where the emergency phone numbers are and how to report an emergency or injury.

I have received training in the Hazard Communications Program. I certify that I understand the requirements and penalties of this program and have had my questions answered to my satisfaction and agree to follow the requirements of this Program.

_____ _____

Employee Signature Date

SUB-CONTRACTORS

PURPOSE

All sub-contractors who will be performing work on work sites will be informed of all hazardous chemicals which their employees may be exposed to. PCI will make available SDS for these chemicals.

All sub-contractors will provide PCI with a copy of their written Hazard Communication Program and all SDS's for hazardous chemicals that they are utilizing in the course of their work on all work sites.

Approval for all hazardous chemicals used on PCI work sites must come from the PCI Safety Director.

A copy of the PCI Hazard Communication Program is available to all subcontractors upon their request. The contractor signs off form will be utilized (Attachment A).

DEFINITION OF TERMS

CHEMICAL NAME
The scientific designation of a chemical.

COMBUSTIBLE
Any liquid having a flash point at or above 100º F, but below 200º F.

COMMON NAME
Any designation or identification such as a code name or number, trade, brand, or generic name used to identify a chemical other than by the chemical name.

CONTAINER
Any bag, barrel, bottle, box, can, cylinder, drum, storage tank or similar container that contains a hazardous chemical. Pipes or piping systems and engine fuel tanks are not considered to be containers.

EXPLOSIVE
A chemical that causes sudden, almost instantaneous release of pressure, gas and heat when subjected to sudden shock, pressure, or high temperature.

EXPOSURE
An employee who is subjected to a hazardous chemical in the course of employment through any route of entry (inhalation, ingestion, skin contact and absorption) and includes potential exposure.

FLAMMABLE
Aerosol / Gas

FLASH POINT
The minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite.

HAZARDOUS CHEMICAL
Any chemical which is a physical or health hazard.

IDENTITY
Any chemical or common name which is indicated on the safety data sheet for the chemical.

LABEL
Any written, printed, or graphic material displayed or affixed to containers of hazardous chemicals.

SAFETY DATA SHEET (SDS)
Any written or printed material concerning a hazardous chemical which is prepared in accordance with 1910.1200, 1926.59, and 30CFR Part 42 standards.

Peterson Contractors, Inc.

FROM: **Mr.**

Peterson Contractors, Inc.
P.O. Box A
Reinbeck, Iowa 50669

DATE:

TO:

Dear Sir:

The Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1910.1200, 1926.59, and Mine Safety and Health Administration (MSHA) 30 CFR Part 42, require employers to have a Safety Data Sheet (SDS) for each hazardous chemical which they use. Also, employers are required to make these SDS's available to all employees who are potentially exposed to those hazardous chemicals.

I am requesting that you send SDS's for the chemicals/product listed below. If this product, which Peterson Contractors Inc. is requesting the SDS sheet for is not available, please respond in writing to us.

PCI requests that you provide the SDS to us within 7 days.

Sincerely,

_____

Peterson Contractors, Inc.

Chemical/Product:

PETERSON CONTRACTORS, INC.

ADDRESS REPLY TO:
104 BLACKHAWK STREET
P.O. BOX A
REINBECK, IOWA 50669

HEAVY & HIGHWAY CONTRACTORS

PHONE: (319) 345-2713

FAX: (319) 345-2658

Hearing Conservation

The PCI Hearing Conservation Program is designed to preserve and protect the hearing of all PCI employees and to comply with OSHA 29 CFR1926.52. PCI maintains this program in compliance with OSHA 1910.95(c)(1) that requires a continuing Hearing Conservation program when a time weighted noise exposure level exceeds 8 hours at a noise level of 85dB. The administration of this program is the responsibility of the PCI Safety Officer, all Supervisors, and all PCI employees.

Administrative Responsibilities Include:

1. Coordination of and supervision of noise exposure monitoring.
2. Identification of employees to be included in the Hearing Conservation Program.
3. Coordination and supervision of audiometric testing program.
4. Supervision of hearing protector selection.
5. Development of employee training programs.
6. Supervision of employee training programs.
7. Coordination and supervision of record keeping.
8. Evaluation of overall program.

1. Employee Monitoring

PCI has monitored noise exposure levels associated with its equipment, trucks, and other specific job assignments. Noise exposure levels are listed in table A-1. Additional noise exposure measurements will be conducted whenever noise levels are expected to change, or a change is noticed due to new equipment or procedures. All noise levels between 80dB and 130dB will be included in the noise measurements.

2. Affected Employees

All PCI employees assigned to field operations are included in the program and will be provided with appropriate hearing protection at no cost to the employee. Employees performing tasks that have a noise exposure level above that which is permitted by table D-2, 1926.52(d)(1) will be required to wear the hearing protection provided by PCI.

3. Audiometric Testing

A baseline audiogram will be conducted as part of each employee's pre-employment physical. This audiogram will be conducted in accordance with established procedures that include, but no limited to a 14-hour restriction of noise exposure prior to the test. Annual audiometric testing will be made available to PCI employees through Allan Occupational Health. Allen will perform the testing on site, will review the results and forward them to PCI. Audiograms will be included in new hire physicals.

In the event that an employee shows a standard threshold shift:

- The employee will be notified of the threshold shift within 21 days of the determination, in writing, by mail.

- The employee will be informed of the need for further evaluation if a medical problem is suspected.
- The use of hearing protection will continue to be enforced
- The employee will be refitted or retrained in the use of hearing protection

Testing will be conducted with equipment that meets the specification of ANSI S.1969

Tests shall be pure tone, air conduction, hearing threshold examinations at test frequencies of 500, 1000, 2000, 3000, 4000, and 6000 Hz. Each ear will be tested separately.

The functional operation of the audiometer will be checked by biological calibration prior to each day's use. An acoustic check will be performed if the biological calibration indicates deviations of 10dB or greater, and an exhaustive calibration performed if the biological calibration indicates deviations of 15 dB or greater.

4. Hearing Protectors

OSHA 1926.52(a) requires noise protection be provided to employees when despite engineering controls, sound levels exceed an 8-hour time weighted average of 85dB. PCI will provide several different types of hearing protection at no cost to the employee, regardless of noise exposure levels. These typed include, but are not limited to:

- Corded, reusable earplug with carrying case
- Earmuff, both behind the head and hard hat attached
- Two types of disposables, 1 time use throw away ear plugs

Most employees will be encouraged to wear the disposable type of ear plugs. In the event that the noise level exceeds the NRR of the plugs, the employee will be required to wear earmuffs over the top of the ear plugs. Operation of heavy equipment with open cabs will require hearing protection as stated above. Equipment with environmentally engineered closed cabs do not require additional hearing protection.

5. Employee Training

Annual employee training will be provided for all employees. This training will include, but is not limited to:

- The effects of noise exposure on hearing.
- The purpose and use of hearing protectors.
- The advantages and disadvantages of various types of hearing protectors
- Instructions in the selection, fitting, use, and care of the protectors.
- The purpose of audiometric testing and an explanation of the test procedures.

6. Record Keeping

- Audiometric test records will be retained for the duration of the affected employee's employment, plus 5 years.
- All records will be provided to the employee upon request in writing.

Peterson Contractors, Inc.

Job Safety Analysis	Activity Description: Mobilization Required Equipment: Heavy equipment such as excavators, trucks, dozers, scrapers, etc.	
Principal Activity Steps	**Potential Hazards**	**Recommended or Required Controls**
Move onto site - unload from trailer, track to start location.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas. Use caution tape or barricade fence as is appropriate.
	Pinch points	Wear leather gloves to avoid pinch injuries from chain and chain binders
	Blind area	Provide spotters if operational blind spots are present when unloading equipment
Move material as specified	Swing radius of excavator boom and counterweights	Barricade counterweight and boom radius with cones if necessary
	Open excavations	Be aware of equipment location. Do not approach too close to shelf. Be aware of soil type.
	Moving equipment	Be aware of moving equipment. Loaded equipment has right of way.
	Ingress and egress of skid loader or trucks	Ensure skid loaders or trucks approach and depart from specific direction. Rotate excavator boom in opposite direction to allow ingress from skid loader or truck.
Move off of site - load onto trailer.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.
	Pinch points	Wear leather gloves to avoid pinch injuries from chain and chain binders
	Blind area	Provide spotters if operational blind spots are present when unloading equipment

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Hot work - Welding - cutting

Required Equipment: Welder, torch, fire extinguisher

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Welding - cutting	Fire	Obtain Hot work permit Keep flammable materials away from hot work area Have charged fire extinguisher on hand Have spotter if necessary Wear appropriate PPE: Helmet, face shield, gloves, sleeves, apron, etc.

Hydrogen Sulfide

Air quality standards.

a. Whenever air monitoring indicates the presence of 5 ppm or more of hydrogen sulfide, a test shall be conducted in the affected underground work areas, at least at the beginning and midpoint of each shift, until the concentration of hydrogen sulfide has been less than 5 ppm for 3 consecutive days.

b. Whenever hydrogen sulfide is detected in an amount exceeding 10 ppm, a continuous sampling and indicating hydrogen sulfide monitor shall be used to monitor the affected work areas.

c. Employees shall be informed when a concentration of 10 ppm hydrogen sulfide is exceeded.

d. The continuous sampling and indicating hydrogen sulfide monitor shall be designed, installed, and maintained to provide a visual and aural alarm when the hydrogen sulfide concentration reaches 10 ppm to signal those additional measures might be necessary to maintain hydrogen sulfide exposure below the PEL.

e. When the competent person determines, on the basis of air monitoring results or other information, that air contaminants may be present in sufficient quantities to be dangerous to life, the employer shall:

(1) Prominently post a notice at all entrances to the underground area to inform all entrants of the hazardous condition, and

(2) Ensure that the necessary precautions are taken.

f. Whenever 5% or more of the lower explosive limit for methane or other flammable gases is detected in any underground work area or in the air return, steps shall be taken to increase ventilation air volume or otherwise control the gas concentration, unless operations are conducted in accordance with the potentially gassy or gassy operation requirements. Such additional ventilation controls may be discontinued when gas concentrations are reduced below 5% of the lower explosive limit.

g. Whenever 10% or more of the lower explosive limit for methane or other flammable gases is detected in the vicinity of welding, cutting, or other hot work, such work shall be suspended until the concentration of such flammable gas is reduced to less than 10% of the lower explosive limit.

h. Whenever 20% or more of the lower explosive limit for methane or other flammable gases is detected in any underground work area or in the return:

(1) All employees, except those necessary to eliminate the hazard, shall be immediately withdrawn to a safe location above ground; and

(2) Electrical power, except for acceptable pumping and ventilation equipment, shall be cut off to the area endangered by the flammable gas until the concentration of such gas is reduced to less than 20% of the lower explosive limit.

i. When ventilation has been reduced to the extent that hazardous levels of methane or other flammable gas may have accumulated, all affected areas shall be tested after ventilation has been restored and before any power, other than for acceptable equipment, is restored or work is resumed and shall determine whether the atmosphere is within flammable limits.

j. Whenever the ventilation system has been shut down with all employees out of the underground area, only competent persons authorized to test for air contaminants shall be allowed underground until the ventilation has been restored and all affected areas have been tested for air contaminants and declared safe.

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Geopier installation of impact piers - H Pile Driver

Required Equipment: Tracked excavator power unit equipped with impact pier insertion attachment

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Loading/unloading unit from transport	Traffic	If unloading near traffic hazard, provide reflective barricades or personnel to direct traffic away or around loading/unloading activity.
	Ground personnel Loading - unloading - assembly	If ground personnel are present, provide barrier or personnel to direct persons on ground away from loading/unloading or assembly activity.
Tracking unit to/from point of delivery to operational site		When unit is being assembled to or removed from the power unit, persons on the ground must stay a minimum distance of 50 feet away from the unit. Safety cables must be attached.
	Ground personnel Vehicular traffic	While tracking to or from sites, operators shall be vigilant for ground personnel and other vehicular traffic. When tracking backwards a dedicated spotter must be present to watch for obstacles, obstructions, or personnel.
Transporting casings between work areas.	Stress on unit pivots	Insert unit may be stored in a vertical position for short periods of time, such as between pier insertions only if the lifting/safety cables are attached and the bottom of the insertion unit is sitting firmly on a reasonably flat surface. The operator of the tracked excavator equipped with the insertion unit shall not carry the insertion unit with the bottom end more than 6-8" above the ground except to avoid obstacles in its path.
Installation of casings	Rock bridging inside of mandrel	If rock becomes stuck/bridges inside of mandrel, insertion unit will lift mandrel an appropriate distance and insertion unit will then hold the mandrel securely from slipping while a hammer is used to dislodge the stuck rock from the mandrel. If this fails to dislodge the bridged rock, the unit will then have to laid down on the ground and dislodges by other means.

In-plant Rail Safety

INTRODUCTION

The object of the In-Plant Rail Safety program is to provide PETERSON CONTRACTORS, INC. employees awareness training and their responsibility for safety and health compliance in customer facilities, and to provide an understanding and awareness of the causes of injuries and illnesses, and preventive measures that can be taken. Customer work facilities contain hazards not normally associated with the Heavy and Highway construction industry.

FEDERAL LAWS AND REGULATIONS

Occupational Safety and Health and Act

The declared Congressional purpose of the Occupational Safety and Health Act (OSH Act) of 1970 is to "assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources." Under the Act, the federal government is authorized to develop and set mandatory occupational safety and health standards applicable to any business affecting inter-state commerce.

The responsibility for promulgating and enforcing occupational safety and health standards rests with the Department of Labor's Occupational Safety and Health Administration (OSHA). The OSH Act requires OSHA to develop standards for recognized hazards. It also requires Federal departments to establish safety and health programs.

It is the responsibility of Peterson Contractors personnel to follow and abide by both all State and Federal requirements when working in general industry environment as opposed to the construction industry.

Hazard Reporting

Employees are required to report unsafe, questionable, or unhealthful working conditions to their supervisors. Reported hazards must be investigated, inspected, and coordinated with the customer representative by the supervisor at the workplace, and any unsafe or unhealthful working conditions eliminated before work begins.

.

Special Hazards

Although Peterson Contractors, Inc. may not have the authority to require abatement of hazardous conditions in a private sector workplace, PCI must assure safe and healthful working conditions for its employees. This shall be accomplished using administrative controls, personal protective equipment, or withdrawal of employees from the private sector facility to the extent necessary to assure the protection of the employees.

All Peterson Contractors, Inc. employees who work within 25 feet of any rail line shall be trained by and will possess an e-rail safe card. The e-rail safe training consists of required PPE, including, but not limited to hard hats, safety glasses meeting the Z-87 standard, high visibility railroad vests, etc. The employee must have in their possession and be able to present the e- rail safe card to prove that they possess knowledge and training concerning safety around rail lines. The e-rail safe card is valid for a 2-year period and must be renewed at the end of the 2-year period. Under the e-rail safe program conditions, retraining is required in the event that the employee displays a lack of knowledge or fails to perform their duties in a safe manner. Records if the e-rail safe training is available to the appropriate railroad through the e-rail safe system. The e-rail safe system provides security screenings and clearances for all employees who enter the system. Additionally, the e-rail safe system covers:

- Designated rail crossing rules.
- Crossing rails at location not designated as rail crossings.
- Restrictions on working or crawling under or over rail cars.
- Crossing distances between rail cars.
- Stop, look, and listen rules.
- Avoiding pinch points.
- Form B restrictions, EIC, and other requirements when working within 25 feet of the rail line.

Occupational Health and Safety

Employee health and safety is a primary concern for the Company. The Company is committed to prevention of occupational accidents and illness. We pursue this commitment through engineering, ergonomic applications, safety committees, medical department training, and safety awareness. **It is MANDATORY that all employees, as a condition of their employment observe, follow, and comply with ALL OSHA and PCI rules and regulations. Failure to comply with safety rules and regulations will result in disciplinary action, up to and including discharge for the first offense.**

Injury and loss control. The efficiency of any department or crew can be measured by its ability to control unnecessary loss. An accident that results in personal injury, property damage, or equipment loss is a needless waste. It is essential that all employees know about and understand their responsibility to control these losses and take the necessary actions to do so. If you observe an unsafe condition or work practice, you must report it to your supervisor. If the supervisor does not respond to your concern, contact the Safety Officer at the Reinbeck office.

During your orientation, and with your supervisor, you will learn about safety rules and regulations, housekeeping rules, job hazard recognition, and personal protective equipment and requirements. You will receive a copy of the rules and will sign a statement that you have received them and agree to abide by them. This statement will be part of your personnel file. The rules are also posted in the work area. Violations of the rules are subject to disciplinary action, up to and including, termination, even for the first offense.

Reporting injuries. All injuries that occur on Company job sites, even if they seem insignificant, are to be immediately reported to your supervisor and/or the Company Safety Director. Failure to report an injury in a timely manner will be considered a refusal to carry out the reasonable request of management and, as such, is a violation which may result in your claim being denied and in disciplinary action. Employees who are injured or cause injury, no matter how minor, through their own neglect, carelessness, and disregard of safety are subject to disciplinary action, up to and including discharge for the violation of Company policies and Safety Program.

In order for an injury or illness to be compensable under the workers compensation system, the injury or illness must be directly related to compensated work at Peterson Contractors, Inc. Injuries, illnesses, aches, pains, strokes, heart attacks, cancers, respiratory problems, etc. that do not have a definite source / incident directly related to your work at Peterson Contractors, Inc. are not compensable and are not covered by the workers compensation system.

Affective January 01, 2002, OSHA significantly changed the reporting requirements and rules concerning workplace injuries. The reporting paper trail has been totally replaced with new forms and logs and “work related injuries” has been redefined. Aggravation of pre-existing conditions has been defined. Irritation of existing conditions is no longer covered under the workers compensation system. Only a significant aggravation of a pre-existing condition is considered compensable under the new system. Each claim is evaluated on a case-by-case basis.

In cases of job-related illness or injury, you and/or your supervisor are required to contact the Safety Director to receive pre-authorization and scheduling of treatment through a Company medical provider, regardless of the time of day or day of the week. As of this printing, the Safety Officer is available 24/7 at 319-415-5240. In the event that this number changes, a current number is available from the office in Reinbeck or other member of management. Failure to do so will result in denied payment of the medical bill, the entire claim denied, and disciplinary action up to and including discharge. Payment for services not specifically authorized by the Company will be denied. Any treatment must be provided through a Company authorized provider. Treatment by personal physicians or other unauthorized providers will not be accepted under **any** circumstances. If the employee begins treatment for a personal injury or personal illness through the employee's personal physician, the injury/illness cannot be converted to a workers compensation claim. The Company will not approve treatment of personal medical problems or conditions not compensable under the reporting guidelines. Any injury must be directly and clearly related to your employment. Submitting a fraudulent claim will put your employment status in jeopardy and the claim will be denied. Additionally, submitting a fraudulent claim is legally considered to be insurance fraud and may result in prosecution under the law. The Company reserves the right to require an employee to submit to a fitness for duty physical evaluation after personal illness, injury, absences, or if there is doubt about an employee's ability to perform a specific task.

Accidents or injuries during uncompensated traveling to or from the work site are not covered under workers compensation. Compensability begins when the employee begins compensated work, including compensated work-related travel during the workday and ends when the employee ceases compensated work. Accidents and injuries that happen while traveling for non-work-related reasons, such as lunch, after hours activities, to and from hotels, to and from home, etc., are detailed under the "Coming and Going Rule" and are not covered under the workers comp system. In all cases, any injury or illness must be directly related to compensated work to be compensable under workers compensation. Injuries that happen on a job site but are not related to work or are without a specific incident of causation, such as heart attacks, strokes, aches or pains, injuries, or illnesses of unknown origin, etc. are not covered under the workers compensation system.

Injury claims from employees who have second jobs or own their own businesses away from PCI will be denied unless the cause of the injury obviously and occurred in the course of employment on a Peterson Contractors, Inc. job site. Injuries of unknown or questionable cause or those not definitely and obviously related to work at Peterson Contractors, Inc. will be denied and shall be the responsibility of the employee and/or another employer. Examples of questionable or indefinite injuries are back pain, cumulative trauma injuries, hearing loss, joint pains, etc. or alleged injuries that occurred without a witness.

Work restrictions issued by the physician for work related injuries must be followed both while at work and at home. It is your responsibility to follow all restrictions and inform your supervisor or the Safety Officer if your job assignment exceeds your restrictions. In the event that an injury is aggravated by the employee away from the PCI work site, the employee becomes responsible for all treatment and costs from that time. If the employee refuses light duty as directed by a physician, the employee will not receive light duty wages.

Work may be available for employees with work restrictions issued by their personal physician for personal injuries / illnesses at the discretion of the Company. The Company is not required to furnish work for employees with personal work restrictions.

PETERSON CONTRACTORS, INC.

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Ladder Safety

Ensure ladders are loaded in such a way to not exceed their rated capacity. Ladders must be inspected prior to each use. Feet must be in place and in good conditions. Rails and rungs must not be bent or damaged. Rungs must be uniformly spaced and meet OSHA requirements. Homemade ladders are not allowed unless prior approval is obtained, and the ladder is inspected after construction and prior to use to insure it meets OSHA requirements. Any ladder that has any defect shall be taken out of service and tagged for repair or replacement. When extension ladders are set up, use a ratio of 1 foot out from the base for every 4 feet of height. If the ladder is set up on a ledge that is 12 feet high, the foot of the ladder should be 4 feet out from the base. The top of the ladder must extend 3 feet above the landing area. Tie or otherwise attach the ladder near the top to prevent movement. Never reach more than an arm's length beyond the side rails of the ladder. Never use bricks, blocks, or other unstable footing materials. Never jump from a ladder. Climb all the way down. Do not sit, stand, or climb on the top two steps of a stepladder. Never use a stepladder like a straight ladder. Make sure stepladders are fully open and the spreaders are in the locked position before climbing.

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: LayPipe

Required Equipment:

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Move onto site - unload from trailer, track to start location.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.
Excavator operations	Swing radius of excavator boom and counterweights	Barricade counterweight and boom radius with cones, use spotters, etc. if on an unsecured site.
	Open excavation	Operators, supervisors, and other personnel must watch for unauthorized persons Set up barricade fence or caution tape as is appropriate.
	Ingress and egress of haul trucks	Ensure haul trucks approached and depart from specific direction. Rotate excavator boom in opposite direction of haul truck routes.
	Spectators	Operators, supervisors, and other personnel must watch for unauthorized persons in or approaching operational areas.
	Slopes	Ensure slopes are appropriate for soil type
Back Fill	Dozer	Ensure no spectators are in work area
	Roller	Ensure no spectators are in work area

Lead Awareness Program

Purpose

The purpose of the Company's Lead Safety Program is to protect both our employees and the environment from lead contamination from our facility operations. The intent of our program is to be in full, continuous compliance with OSHA Standard 29 CFR 1910.1025 and all other local, State and Federal requirements for our industry.

Responsibilities

Management will implement, maintain & monitor effectiveness of:

• entire lead safety program, including semi-annual revisions and updates to reflect the status of the program
• engineering & administrative controls for lead exposure
• employee training and awareness• medical surveillance program
• respiratory protection program
• lead disposal program
• housekeeping program
• protective clothing issue, storage, and disposal

Supervisors will:

• provide effective and continuous control of all lead operations
• immediately inform management of any deficiencies in engineering or administrative controls
• conduct routine assigned inspections and monitoring
• immediate correct any deviation from operational safety requirements
• provide immediate on-the-spot training for any employee who shows lack of knowledge or application of required operational lead safety requirements
• ensure all employees are properly trained before commencing any operation that may contribute to lead exposure

Employees will:

• follow all operational and lead safety procedures
• seek immediate supervisor guidance to resolve questions
• conduct operations in accordance with company provided training
• immediately report to a supervisor any deficiency in engineering or administrative controls
• properly use, store, and dispose of issued and assigned personal protective clothing.
• maintain change and shower areas neat and orderly

Process, Control & Technical Information

The following information that describes facility specific information concerning processes and controls are maintained as an addendum to this written program:
a. Description of each operation in which lead is emitted, e.g., machinery used, material processed, controls in place, crew size, employee job responsibilities, operating procedures, and maintenance practices.
b. Description of the specific means used to achieve compliance, including engineering plans and studies used to determine methods selected for controlling exposure to lead.
c. Report of the technology considered in meeting the permissible exposure limit.
d. Air monitoring data which documents the source of lead emissions.
e. A detailed schedule for implementation of this program, including documentation such as copies of purchase orders for equipment, construction contracts, etc.
f. Records of Employee Training and Notifications
g. Specific work practice program and controls for each operation involving lead exposure
h. Administrative control schedule
i. All other relevant information

Hazards

Pure lead (Pb) is a heavy metal at room temperature and pressure and is a basic chemical element. It can combine with various other substances to form numerous lead compounds. The Permissible Exposure Limit (PEL) set by OSHA is 50 micrograms of lead per cubic meter of air (50 ug/m (3)), averaged over an 8-hour workday.

Lead can be absorbed by inhalation (breathing) and ingestion (eating). Lead is not absorbed through your skin. When lead is scattered in the air as a dust, fume or mist it can be inhaled and absorbed through the lungs and upper respiratory tract. Lead can also be absorbed through the digestive system if swallowed. Handling food, cigarettes, chewing tobacco, or make-up which have lead contamination or handling them with hands contaminated with lead, will contribute to ingestion.

A significant portion of inhaled or ingested lead goes into the blood stream. Once in the blood stream, lead is circulated throughout the body and stored in various organs and body tissues. Some of this lead is quickly filtered out of the body and excreted, but some remains in the blood and other tissues. As exposure to lead continues, the amount stored in the body will increase. Lead stored in body tissues can cause irreversible damage, first to individual cells, then to organs and whole-body systems.

Short-term (acute) effects of overexposure to lead

Lead is a potent, systemic poison. Taken in large enough doses, lead can kill in a matter of days. A condition affecting the brain called acute encephalopathy may arise which develops quickly to seizures, coma, and death from cardiorespiratory arrest. There is no sharp dividing line between rapidly developing acute effects of lead, and chronic effects which take longer to acquire. Lead adversely affects numerous body systems and causes forms of health impairment and disease which arise after periods of exposure as short as days or as long as several years.

Long-term (chronic) effective of overexposure to lead.

Chronic overexposure to lead may result in severe damage to blood-forming, nervous, urinary, and reproductive systems. Some common symptoms of chronic overexposure include loss of appetite,

metallic taste in the mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint pain or soreness, fine tremors, numbness, dizziness, hyperactivity, and colic. In lead colic there may be severe abdominal pain.

Monitoring

Initial determination. The company has made an initial determination of lead work areas and exposure levels and will conduct subsequent "initial determinations" in the event of changes to hazard control methods or operational processes that affect employee or environmental exposure. Initial determinations are conducted to determine if any employee may be exposed to lead at or above the action level of 30 micrograms per cubic meter of air (30 ug/m (3)) averaged over an 8-hour period.

Where a determination is made that no employee is exposed to airborne concentrations of lead at or above the action level, the company shall maintain a written record. The record shall include quantitative sampling data, date of determination, location within the worksite, and the name and social security number of each employee monitored.

Monitoring requirements

Monitoring and analysis methods shall have an accuracy (to a confidence level of 95%) of not less than plus or minus 20 percent for airborne concentrations of lead equal to or greater than 30 ug/m (3).

Where a determination shows the possibility of any employee exposure at or above the action level, the company shall conduct monitoring which is representative of the exposure for each employee in the workplace or process area who is exposed to lead.

For the purposes of monitoring requirements, employee exposure is that exposure which would occur if the employee were not using a respirator.

Monitoring and sample collection shall cover full shift (for at least 7 continuous hours) personal samples including at least one sample for each shift for each job classification in each work area.

Full shift personal samples must be representative of the monitored employee's regular, daily exposure to lead.

Monitoring Frequency

At or Above Action Level and Below PEL. Every 6 months ff the initial determination or subsequent monitoring reveals employee exposure to be at or above the action level but below the permissible exposure limit. This monitoring (6-month frequency) will continue until at least two consecutive measurements, taken at least 7 days apart, are below the action level.

Above PEL. If the initial monitoring reveals that employee exposure is above the permissible exposure limit the company will repeat monitoring quarterly. Quarterly monitoring will continue until at least two consecutive measurements, taken at least 7 days apart, are below the PEL but at or above the action level.

Additional monitoring. Whenever there has been a production, process, control, or personnel change which may result in new or additional exposure to lead, or whenever any other reason to suspect a

change which may result in new or additional exposures to lead, additional monitoring will be conducted.

Employee Notification of Monitoring Results.

Within 5 working days after the receipt of monitoring results, each employee will be notified in writing of the results which represent that employee's exposure.

Whenever the results indicate that the representative employee exposure, without regard to respirators, exceeds the permissible exposure limit, the written notice will include a statement that the permissible exposure limit was exceeded, and a description of the corrective action taken or to be taken to reduce exposure to or below the permissible exposure limit.

Observation of monitoring

The company provides affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to lead.

Observation procedures. Whenever observation of the monitoring of employee exposure to lead requires entry into an area where the use of respirators, protective clothing or equipment is required, the company will provide the observer with and assure the use of respirators, clothing and equipment required, and will require the observer to comply with all other applicable safety and health procedures.

Without interfering with the monitoring, observers are entitled to:
- Receive an explanation of the measurement procedures
- Observe all steps related to the monitoring of lead performed at the place of exposure
- Record the results obtained or receive copies of the results when returned by the laboratory

Engineering Controls

Where any employee is exposed to lead above the permissible exposure limit for more than 30 days per year, the company will implement feasible engineering and work practice controls (including administrative controls) to reduce and maintain employee exposure to lead. Wherever the engineering and work practice controls which can be instituted are not sufficient to reduce employee exposure to or below the permissible exposure limit, the company will still use them to reduce exposures to the lowest feasible level and shall supplement them using respiratory protection.

Where any employee is exposed to lead above the permissible exposure limit, but for 30 days or less per year, the company will implement engineering controls to reduce exposures to 200 ug/m (3), but thereafter may implement any combination of engineering, work practice (including administrative controls), and respiratory controls to reduce and maintain employee exposure to lead to or below 50 ug/m (3).

Mechanical ventilation

When ventilation is used to control exposure, measurements which demonstrate the effectiveness of the system in controlling exposure, such as capture velocity, duct velocity, or static pressure shall be

made at least every 3 months. Measurements of the system's effectiveness in controlling exposure shall be made within 5 days of any change in production, process, or control which might result in a change in employee exposure to lead.

Recirculation of air. If air from exhaust ventilation is recirculated into the workplace, the system must include:

- a high efficiency filter with reliable back-up filter; and
- controls to monitor the concentration of lead in the return air and to bypass the recirculation system automatically if it fails are installed, operating, and maintained.

Administrative Controls

If administrative controls are used as a means of reducing employees TWA exposure to lead, the company shall establish and implement a job rotation schedule which includes:

- Name or identification number of each affected employee
- Duration and exposure levels at each job or workstation where each affected employee is located
- Other information which may be useful in assessing the reliability of administrative controls to reduce exposure to lead

Administrative control information and records will be maintained as an addendum to this written program.

Respirators

When respirators are used to supplement engineering and work practice controls to comply with the PEL and all other requirements have been met, employee exposure, for the purpose of determining compliance with the PEL, may be at the level provided by the protection factor of the respirator for those periods the respirator is worn. Those periods may be averaged with exposure levels during periods when respirators are not worn to determine the employee's daily TWA exposure. The respiratory protection program will be conducted in accordance with 29 CFR 1910.134 (b) through (d) (except (d)(1)(iii)), and (f) through (m). The company will provide a powered air-purifying respirator when an employee chooses to use this type of respirator and such a respirator provides adequate protection to the employee.

Respirators must be used during:

- Periods necessary to install or implement engineering or work-practice controls.
- Work operations for which engineering, and work-practice controls are not sufficient to reduce employee exposures to or below the permissible exposure limit.
- Periods when an employee requests a respirator

Protective Clothing & Equipment

If an employee is exposed to lead above the PEL, without regard to the use of respirators or where the possibility of skin or eye irritation exists, the company will provide at no cost to the employee appropriate protective work clothing and equipment such as, but not limited to:

- Coveralls or similar full-body work clothing.
- Gloves, hats, and shoes or disposable shoe coverlets; and
- Face shields, vented goggles, or other appropriate protective equipment

Cleaning and replacement - the company will:

- provide the protective clothing in a clean and dry condition at least weekly, and daily to employees whose exposure levels without regard to a respirator are over 200 ug/m (3) of lead as an 8-hour TWA.
- provide for the cleaning, laundering, or disposal of protective clothing and equipment
- repair or replace required protective clothing and equipment as needed to maintain their effectiveness.
- assure that all protective clothing is removed at the completion of a work shift only in change rooms provided for that purpose
- assure that contaminated protective clothing which is to be cleaned, laundered, or disposed of, is placed in a closed container in the change-room which prevents dispersion of lead outside the container.
- inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.
- assure that the containers of contaminated protective clothing and equipment required by paragraph (g)(2)(v) are labeled as follows: CAUTION: CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.
- prohibit the removal of lead from protective clothing or equipment by blowing, shaking, or any other means which disperses lead into the air.

Housekeeping

- All surfaces shall be maintained as free as practicable of accumulations of lead.
- Floors and other surfaces where lead accumulates may not be cleaned by the use of compressed air.
- Shoveling, dry or wet sweeping, and brushing may be used only where vacuuming or other equally effective methods have been tried and found not to be effective.
- Where vacuuming methods are used, the vacuums shall be used and emptied in a manner which minimizes the reentry of lead into the workplace.

Hygiene Facilities & Practices

The following is requirements pertain to all areas where employees are exposed to lead above the PEL, without regard to the use of respirators:

- No storage or consumption of food or beverages

• No tobacco product storage or use
• No cosmetics stored or used
• No personal clothing or articles, except in authorized change areas

Change rooms

Clean change rooms are provided for employees who work in areas where their airborne exposure to lead is above the PEL. Change rooms are equipped with separate storage facilities for protective work clothing and equipment and for street clothes which prevent cross-contamination. Employees who are required to shower after work shifts are not allowed to leave the workplace wearing any clothing or equipment worn during the work shift.

Showers

Employees who work in areas where their airborne exposure to lead is above the PEL must shower at the end of each work shift.

Lunchrooms

Separate lunchroom facilities are provided for employees who work in areas where their airborne exposure to lead is above the PEL. These facilities are temperature controlled, have positive pressure and filtered air supply, and are readily accessible to employees. All affected employees must wash their hands and face prior to eating, drinking, smoking, or applying cosmetics in the lunchroom area. Employees may not enter lunchroom facilities with protective work clothing or equipment unless surface lead dust has been removed by vacuuming, down draft booth, or other cleaning method.

Lavatories

An adequate number of separate lavatory facilities are maintained for employees who work in lead-controlled process areas.

Signs

Proper signs will be posted at the entrance and exits to all lead hazard areas, no other signs or statements may appear on or near any lead hazard sign which contradicts or detracts from the meaning of the required sign. All lead hazard signs will be kept illuminated and cleaned as necessary so that the legend is readily visible. The signs will contain the following or other appropriate wording/warning:
WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

Employee Training

All affected employees will participate in the company Lead Safety Training program. All affected employees will be trained prior to the time of initial job assignment and at least annually.

Employee training will consist of:

- specific OSHA requirements contained in
  - 1910.1025 - OSHA Lead Standard
  - 1910.1025 App A - Substance data sheet for occupational exposure to lead
  - 1910.1025 App B - Employee standard summary
- specific nature of the operations which could result in exposure to lead above the action level
- purpose, proper selection, fitting, use, and limitations of respirators.
- purpose and a description of the medical surveillance program, and the medical removal protection program including information concerning the adverse health effects associated with excessive exposure to lead (with particular attention to the adverse reproductive effects on both males and females).
- engineering controls and work practices associated with the employee's job assignment.
- contents of the company compliance plan
- instructions that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician
- materials pertaining to the Occupational Safety and Health Act

A copy of the OSHA standard 1910.1025 and its appendices will be readily available to all affected employees.

Medical Surveillance

The company has instituted a medical surveillance program for all employees who are or may be exposed above the maximum exposure limits.

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Filling and tamping various diameter holes per specification

Required Equipment: Liebherr MobileRam

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Move onto site - unload from trailer, track to start location.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.
Fill specified diameter holes	Swing radius of excavator boom and counterweights	Educate personnel in area to avoid swing radius.
	Inactive-Open holes	Insure filling and tamping operations keep up with drilling operation. Cover holes not being work on with appropriate plywood covers specifically fabricated to keep cover from sliding. Cover must be marked clearly with the word "HOLE".
	Ingress and egress of skid loader	Ensure skid loader approaches and departs from specific direction. Rotate excavator boom in opposite direction to allow ingress from skid loader.
Move off of site - load onto trailer.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Load Test

Required Equipment: Tracked excavator power unit equipped with impact pier insertion attachment

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Loading/unloading unit from transport	Traffic	If unloading near traffic hazard, provide reflective barricades or personnel to direct traffic away or around loading/unloading activity.
	Ground personnel Loading - unloading - assembly	If ground personnel are present, provide barrier or personnel to direct persons on ground away from loading/unloading or assembly activity.
Tracking unit to/from point of delivery to operational site		When unit is being assembled to or removed from the power unit, persons on the ground must stay a minimum distance of 50 feet away from the unit.
		Safety cables must be attached.
	Ground personnel Vehicular traffic	While tracking to or from sites, operators shall be vigilant for ground personnel and other vehicular traffic.
		When tracking backwards a dedicated spotter must be present to watch for obstacles, obstructions, or personnel.
Transporting casings between work areas.	Stress on unit pivots	Insert unit may be stored in a vertical position for short periods of time, such as between pier insertions only if the lifting/safety cables are attached and the bottom of the insertion unit is sitting firmly on a reasonably flat surface.
Installation of casings		The operator of the tracked excavator equipped with the insertion unit shall not carry the insertion unit with the bottom end more than 6-8" above the ground except to avoid obstacles in its path.
	Rock bridging inside of mandrel	If rock becomes stuck/bridges inside of mandrel, insertion unit will lift mandrel an appropriate distance and insertion unit will then hold the mandrel securely from slipping while a hammer is used to dislodge the stuck rock from the mandrel. If this fails to dislodge the bridged rock, the unit will then have to laid down on the ground and dislodges by other means.
Install concrete cap	Concrete	Use appropriate PPE to protect employees from concrete burns
Assemble Testing Equipment	Lift Hazards	Use proper lifting techniques
Perform Load Test	Minimal to none	
Disassemble Test Equip.	Lift Hazards	Use proper lifting techniques

Peterson Contractors, Inc.

Job Safety Analysis	**Activity Description:** Unloading Heavy Equipment and Supplies **Required Equipment:**	
Principal Activity Steps	**Potential Hazards**	**Recommended or Required Controls**
Move onto site - unload from trailer, track to start location.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.
	Unloading	Low boy drivers to use all proper procedures and precautions.
Operations	Swing radius of excavator boom and counterweights	Barricade counterweight and boom radius with cones if needed.
	Fork-lift Operations	Ensure operators are trained and certified.
	Ingress and egress of other equipment	Ensure haul trucks approached and depart from specific direction leaving adequate clearance for safe operations.
	Spectators	Operators, supervisors, and other personnel must watch for unauthorized persons in or approaching operational areas.

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Equipment repair

Required Equipment: Service equipment

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Monitor excavations and earth moving operations. Perform labor practices as directed.	Contact with mechanized equipment	Have equipment operator's attention when approaching. Do not approach from the equipment operator's blind side. Be aware of moving equipment. All equipment has the right of way
	Open excavations	Watch for and approach open excavations with caution. Barricade or use caution tape as is appropriate.
Lifting	Strain	Use proper lifting techniques Get another person or machine to help lift
Hot Work	Burns / Fire	Use spotter if necessary. Keep flammable materials away before starting hot work Have fire extinguisher at hand prior to starting hot work

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Manlift Operations

Required Equipment: Manlift

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Move onto site - unload from trailer, track to start location.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.
Lift and rotate personnel Move boom/basket as required	Swing radius of boom/bucket and counterweights	Educate personnel in area to avoid swing radius. Outriggers as necessary per owner's manual Operators must be trained by 3rd party trainer and possess operator certification All personnel in bucket shall wear fall protection and be secured at tie off points
	Ingress and egress of forklift	Ensure forklift approaches and departs from specific direction. Rotate excavator boom in opposite direction to allow ingress from forklift / equipment
Move off of site - load onto trailer.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.

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Material Handling

Back injuries are caused by lifting light items carelessly and using incorrect technique to lift heavy items. In the construction industry no two circumstances are the same. When you lift, use proper technique:

- Assess the size, weight, shape, and balance of the object prior to lifting. Use a mechanical aid, such as a forklift or boom lift is possible for heavy objects.
- If the object is heavy and a two-person lift is not practical and a mechanical aid is not available, get a second person to help lift and carry the object.
- Square your body up to the object, get as close to the object as you can with feet slightly apart and one foot just behind the other.
- Squat down to the load, bend your knees, keep your back straight and as close to vertical as possible.
- Get a good grip on the object with you whole hand, not just your fingers. Wear gloves when handling sharp or abrasive objects.
- Lift straight up with your legs, keeping your back straight and vertical.
- Ensure that vision is not obscured on the carry path.
- Ensure the carry path is clear of obstacles.
- Report any hazardous conditions to the site supervisor.

Shoveling is the same as lifting, use the same rules. If an object is too heavy to lift or carry, get help, or use a mechanical device. Do not reach over a stack to pick up an item. Do not twist your body, turn with your feet. Do not lift material by the packing band. Packing bands can be very sharp. Be cautious when breaking or cutting packing bands, they can be under tension and may snap when cut.

Manual lifting training shall be provided to all employees on an annual basis.
As per the Safety and Health program, any injury must be reported to the supervisor and management for investigation and medical treatment if needed.
Supervisors shall periodically evaluate and observe working conditions and make changes to eliminate lift requirements if possible. Use of mechanical lifting aids/machinery shall be enforced whenever possible.

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Mobile Equipment

From Annual Training – Safety Manual

Traffic Control: Working on our Nation's roads and highways is a dangerous occupation. If you are working as a flagger, you must be properly trained and equipped.

- Be neat in appearance.
- Do NOT leave your position to talk with the work crew.
- If you have not been relieved for breaks or lunch, contact your supervisor. Do NOT leave your post until relieved.
- Be friendly and polite to the traveling public. Do NOT leave your post to visit with motorists or pedestrians.
- If a driver refuses to obey instructions, contact your supervisor immediately. Make a note of the make and model of car and license plate if possible.
- Be alert for emergency vehicles.
- ALWAYS wear your reflective vest and other personal protective equipment.
- Be alert at all times. Leave yourself an "out" in case of an emergency.
- Stand alone, do not mingle with workers. Stand out.

Heavy Equipment: Be careful around heavy equipment, especially if you are wearing hearing protection. Heavy equipment operators have a very limited field of view and may not be able to see pedestrians or smaller vehicles.

- All equipment shall be inspected at the beginning of each shift including, but not limited to:
  - Brakes
  - Steering
  - Lights
  - Control systems
  - Inspections shall be in writing
  - Any piece of equipment with deficiencies shall be taken out of service and reported to the site supervisor for repairs.
- Never distract equipment operators.
- Only trained and authorized personnel are allowed to operate equipment.
- Never walk behind or beside moving equipment.
- Never put any part of your body in or around moving parts.
- Never smoke while refueling or in the refueling area.
- Maintain eye contact with the operator when guiding equipment back.
- Watch for falling trees and limbs when grubbing or clearing a site.
- Riders are not allowed on equipment. Only the operator is allowed.
- Keep away from equipment being loaded.
- Never jump from equipment or from the cab.

- A documented pre-operation inspection is required at the start of every shift.
- Every piece of mobile equipment must be equipped with a working backup alarm.
- Equipment operators are required to always wear a seat belt.
- In the event that the equipment does not have an enclosed cab, operators shall wear safety glasses or other form of acceptable eye protection.
- Equipment shall be used for its designated purpose. Equipment shall not be modified in any manner or used for any purpose that it was not designed to perform by the manufacturer.
- No piece of equipment shall be loaded to exceed it design specification. Loads shall be transported in safe, balanced, and secured manner.

Crane Safety: Use care around cranes. Crane operators have a very limited field of view and may not be able to see pedestrians.

- Only NCCCO certified operators are allowed to operate cranes.
- Only trained and qualified riggers are allowed to perform rigging operations.
- Only trained and qualified signalmen are allowed to give operators instructions.
- During lifting, use only one signalman to avoid confusion.
- Barricading around the swing radius of the counterweight must be used when operating a crane.
- Never operate cranes closer than 10 feet from power lines. As the power line voltage increases, so does the safe distance. If power line contact is possible, a dedicated spotter is required.
- Before lifting, perform the written daily inspection. Inspect slings, rigging, hooks, etc. for defects, cracks, or other damage. Report any damage to your supervisor.
- Never use a crane's cable as a sling.
- Cushion rigging from sharp edges or corners.
- When necessary to guide suspended loads, use tag lines.
- Never ride the load, ball, or hook.
- Keep out from under suspended loads.
- When directing movement, ensure that you have an escape route.
- The complete crane program is located in the Safety Office.

Peterson Contractors, Inc.		
Job Safety Analysis	**Activity Description:** Night Work	
	Required Equipment:	
Principal Activity Steps	**Potential Hazards**	**Recommended or Required Controls**
Visibility	Lack of lighting	Provide portable light plants for illumination Employees shall wear class 2 reflective vests at minimum, class 3 is preferable Extra precautions to be used around moving equipment

Personal Conduct & Disciplinary Action

High standards of personal conduct at work are necessary to achieve high standards of individual job performance and Company excellence. Because of the responsibility this place on each person, it is important for you to know the standards and rules of conduct, which are applied to each and every Company employee.

The Company's disciplinary procedures are designed to be fair and consistent. The purpose of disciplinary action is to correct problem situations, provide an atmosphere in which an employee can learn from mistakes, and minimize the employee's loss of self-esteem.

Supervisors are responsible for physically inspecting work areas on a daily basis and administering disciplinary action in a fair and consistent manner. Any one of the three disciplinary actions listed here may be utilized on a first infraction, depending on the degree of seriousness in the judgment of management. This disciplinary procedure is for guidance only, and steps in the procedure can be omitted at management's discretion.

- **1st OFFENSE - Corrective counseling.** For minor violations, or first offenses, the employee will receive a verbal warning which includes an explanation of the violation committed and will be advised about corrective measures. In addition, there may be a loss of accumulated work hours that count towards the Bond award program.

- **2Nd OFFENSE - Written warning.** If, after having received a verbal warning the employee has not taken measures to correct the conduct, or when there are first violations of a more serious nature, the employee will receive a written warning which states the nature of the infraction and the corrective action required. Copies will be distributed to the employee and to the employee's personnel file. In addition, there will be the loss of accumulated work hours towards the Bond award program.

- **3rd. OFFENSE – Suspension.** If, after having received a written warning, the employee does not correct his or her conduct, or in situations of additional violations, or of major violations of rules of conduct, the employee will be given a written notice and will be suspended from work without pay for one to three days. The length of the suspension will be based on the seriousness of the violation(s). In cases of severe policy violations, or for gross misconduct, the employee will be immediately suspended and pending investigation of an incident, will be discharged or reinstated at a later time. In addition, there will be the loss of accumulated work hours towards the Bond award program.

- **4th OFFENSE – Suspension or Termination.** If, after the 3rd. offense, the employee does not correct his or her conduct, the offending employee will be suspended for one calendar week without pay and will be reviewed for discharge. In addition, there will be the loss of accumulated work hours towards the Bond award program.

The employee's supervisor has the authority for administering disciplinary action. In the absence of the supervisor, the supervisor in charge or acting supervisor has full disciplinary authority. Employees who fail to abide by the standards and rules of conduct are subject to disciplinary action, up to and including termination, even on the first offense. The Company reserves the right to deviate from, change, modify, or discontinue this program as required, at its sole discretion.

The following is a list of unacceptable conduct/actions. The list gives representative causes, which may justify disciplinary action. The list is not meant to be all-inclusive, nor have the items included here been put in order of severity. Management reserves the right, at its discretion, to take any disciplinary action it feels is appropriate under any circumstance. This may include written disciplinary action, suspension, or termination, even for the first offense.

- **Refusal to work.** Refusal of any employee to carry out the reasonable request of a supervisor to perform safe work as directed; or willful neglect of duty such as loafing, wasting working time, being out of the work area without supervisor's permission, leaving the Company premises before your work shift ends without permission from your supervisor (or manager in charge of your work area), or sleeping (or the appearance of sleeping) on the job. Includes refusal to work with other employees. Travel is a required part of the work environment. Refusing to travel to a job site as directed will be considered refusal to work and resignation of employment.

- **Unauthorized leaving of premises.** Leaving the Company premises or job site before your work shift ends without getting permission from your supervisor (or the acting supervisor of your work area). Walking off of the job without permission.

- **Destruction of company property.** Intentionally damaging, defacing, or carelessly using Company property or any other property located on or off Company premises or work sites. Operating Company equipment past the designated service interval will result in disciplinary action, up to and including discharge, even on the first offense.

- **Theft.** Unauthorized removal or appropriation of property belonging to the Company, customer, or another employee. Utilizing Company supplies, equipment, or resources for personal benefit or convenience; doing personal work on Company time or property without permission. If you suspect someone of steeling, contact your supervisor or the Reinbeck office.

- **Insubordination.** Disobedience or insubordination to persons having authority to direct or supervise; failure to follow a reasonable request of management, refusing to identify oneself or another when asked to do so by a member of management; refusal to answer a question directed by a member of management. This includes wearing of required PPE.

- **PPE.** The Company furnishes personal protective equipment as required by OSHA. The employee is required to wear the PPE as needed. The Company will replace PPE due to normal wear and tear. In the event that the employee loses, damages, or forgets an item of PPE at home, the item of PPE will be replaced at the employees' expense. Additionally, the employee may be required to leave the job site until the item of PPE is replaced.

- **Unlawful activities.** Unauthorized possession of firearms or weapons on company property with or without a legal permit; possession, consumption, distribution, or being under the influence of intoxicants or drugs on Company premises, work sites, or in Company vehicles; participating in unauthorized gambling, lottery, or any other game of chance on Company property or in Company vehicles at any time.

- **Fighting.** Horseplay, fighting, brawling, or committing, threatening, or implying the potential for an act of violence on Company or customer premises or work sites.

- **Abusive or threatening language or actions.** The use of threatening, profane, vulgar, or abusive language and other forms of disorderly or immoral conduct or malicious disturbance, including the intimidation of others and sexual or discriminatory harassment; inappropriate or unwanted actions or advances, behaviors, or gestures. Threatening or intimidating remarks or statements. Threats of violence or violent behavior. Use of Company computers to search for or to access pornography, immoral or illegal materials or information on Internet connections.

- **Security.** Being in a restricted area of any Company facility without permission; loaning or permitting the duplication of Company keys; entering or leaving a company facility by other than authorized entrances and exits; deliberately permitting an unauthorized non-employee to enter company premises or work sites; refusal to identify yourself to any supervisor or person in authority upon request; unauthorized removal of posted materials or defacing or otherwise altering the same. Violation of any customer security policy or requirement.

- **Dishonesty.** Falsification of personnel, payroll, time sheets, medical, or other records of any employee; omission of pertinent facts from such records; giving false testimony; covering up mistakes or faulty work; tampering with another employee's time reporting; soliciting or accepting any free goods or services from company suppliers for personal use; or conflicts between personal interests and best interests of the Company. Falsification of any Accident report, malingering with regard to an injury, claiming a personal injury or injury from a second job as being work related. Fraudulent workers compensation claims.

- **Disclosure.** Repeating confidential business information without permission; or taking Company records, lists proprietary information, or private data from Company premises without permission.

- **Safety.** Willful violation or disregard of safety standards, rules, and procedures; failure to immediately report to your supervisor any injury resulting from an on-the-job accident; action such as horseplay or jokes which endanger others; operation or adjustment of equipment without authorization. Attempting to claim a non-work-related injury as a work-related injury will result in disciplinary action, up to and including termination, as well as probable legal litigation.

- **Excessive unreliable attendance.** Unreliable attendance, improperly reported absences, failure to call or report an intended absence or lateness, failure to report an absence or lateness in a timely manner.

- **Unauthorized solicitation,** or distribution/posting of unauthorized materials, either physically or through the use of technology (i.e., facsimile, computer, copier, paging device, telephone, handheld radio).

- **Electronic Devices.** The use of cellular telephones or texting while operating PCI vehicles and equipment is strictly prohibited. Additionally, watching DVD players or listening to mobile CD players, etc. while operating heavy equipment, such as dozers and excavators, pickup trucks, heavy trucks, and other mobile equipment are included. If you must make or receive an emergency phone call during working hours, pull off to the side and stop, make, or take your call quickly and return to work. Employee possession of cell phones on a project during working hours is at the discretion of management. Unsafe action by an

employee constitutes grounds for disciplinary action, up to and including discharge, even of the first offense.

- **Salvaging of Materials** for personal use/sale is not allowed without prior permission from the Reinbeck office. Personal savaging of materials without permission will be considered theft and treated accordingly.

- **Smoking** is no longer allowed in Company vehicles, offices, and job trailers per the new State of Iowa smoking laws. This includes Company offices, shops, job trailers, vehicles, and other places accessible to the general public and employees as specified in the new law.

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Personal Protective Equipment

Required personal protective equipment shall be furnished at no cost to employees by Peterson Contractors, Inc. Each type of PPE has specific requirements which must be followed. All training shall be documented per the PCI handbook provisions. All PPE has general requirements, including:

- Supervisors shall evaluate the job site and potential hazards at each job site. Appropriate PPE shall be provided to match the hazards present.
- The Safety Officer will complete a written hazards analysis on each job site visit. The analysis will be discussed with the site supervisor, dated, and signed.
- Employees are not allowed to bring personal PPE onto PCI job sites with the exception of prescription glasses. Prescription glasses must meet the Z-87 standard and be equipped with side shields.
- Respirators shall be fitted by qualified persons during the fit test and PFT training.
- Employees have several types of hearing protection available and are allowed to choose they type that fits them best.
- All PPE shall be maintained by the employee in a sanitary condition.
- Any piece of PPE that is defective shall be taken out of service and replaced.
- All employees who wear PPE shall be trained in its use:
    - Prior to beginning operations.
    - Annually there after
    - If the employee shows lack of use, improper use, or insufficient skill or understanding
    - If the workplace hazards change and different PPE or additional PPE is required.

Hard Hats: Hard Hat utilization shall be determined by the project foreman. You are not normally required to wear a hard hat while inside equipment or trucks. However, as soon as you step out of the unit, a hard hat is required. On some jobs you may be required to wear hard hats even while operating equipment or trucks. Hard hats must be worn with the bill to the front. Hard hats must be worn with a suspension.

Hardhat utilization shall be determined by the project foreman or the customer's requirements. You normally are not required to wear your hardhat while inside equipment or trucks; but as soon as you step out of the vehicle, the hard hat is required apparel. Everyone shall take their hard hat with them to the work site. If you are assigned work on a project requiring a hard hat and you do not have one in your possession, you may be sent home. Hard hats shall not be worn over ball caps. Hard hats shall be worn with the bill forward unless you are welding.

Footwear: Wear appropriate work boots with puncture resistant soles. Steel-toed boots and metatarsal guards are preferable. Tennis shoes are not acceptable footwear, even when driving Company vehicles. Boots must be laced, tied, and worn at all times while on the job. Safety boots with steel toes are recommended footwear. Boots with metatarsal guards are preferred. Tennis shoes are not acceptable, even when driving equipment. Leather boots may not be worn while working in concrete.

Hand Protection: Wear proper gloves when exposed to cuts, scrapes, burns, punctures, or harmful chemicals. When working with liquids, gloves should be cuffed at the top to keep liquids from running up your arm.

Eye / Face Protection: Proper eye and/or face protection must be worn when you are exposed to; physical agents such as sparks or flying particles; chemical agents, such as splatters, splashes, fumes, or vapors; radiation agents, such as lasers or arc welding equipment.
Eye protection shall be used by employees exposed to welding, grinding, chipping or other similar operations and you are required to wear it.

Hearing Protection: Hearing protection must be worn in areas or in equipment, which produce a noise level in excess of 80 db. Use furnished earplugs, earmuffs, or a combination of both, depending upon the exposure level. Cotton or a cigarette butt is not acceptable hearing protection. Earmuffs equipped with radios are not acceptable unless submitted to and evaluated by the Company's hearing protection provider.

Wear clothing suitable for your work. Torn or loose clothing, shorts, or shirts without sleeves, are hazardous. No low hanging trousers.

Respiratory Protection: Anyone who requires respiratory equipment in the course of their work shall be trained in the use of the equipment before performing their work. All equipment of this type shall be provided when needed. NEVER bring your own respirator for use at the work site. Inform your foreman if you need equipment.

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Pile driving

Required Equipment: Tracked excavator power unit equipped with HVR attachment

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Loading/unloading unit from transport	Traffic	If unloading near traffic hazard, provide reflective barricades or personnel to direct traffic away or around loading/unloading activity.
	Ground personnel	If ground personnel are present, provide barrier or personnel to direct persons on ground away from loading/unloading activity.
Tracking unit to/from point of delivery to operational site	Ground personnel Vehicular traffic	While tracking to or from sites, operators shall be vigilant for ground personnel and other vehicular traffic.
Transporting piles between work areas.	Piles falling on equipment or personnel	All piles shall be transported from storage areas to job areas in a horizontal position by forklifts or earth moving equipment equipped with forks. Piles shall not be transported from one work area to another by the tracked excavator with the pile suspended from the HVR or lifting/safety cables.
Installation of piles	Accidental release of pile from jaws of HVR	Lifting/safety cables shall be attached from the HVR to the casing before the pile is lifted from its resting position and shall remain attached unless the pile has less than 75% of the pile length exposed above the ground surface or is in horizontal storage. No ground personnel shall not enter an area within 50 feet from the casing insertion location, in any direction at any time during which the casing is suspended from the HVR or from the lifting/safety cables. Operators of other equipment may remain on station, but only if they remain in the cab of the unit they are operating and only if the unit they are operating is equipped with a ROPS. Ground personnel may enter the 50' danger zone only after the casing has more than 25% of the pile length inserted below the surface above the ground. The operator of the tracked excavator equipped with the HVR shall not carry the pile with the bottom end more than 6-8" above the ground except to avoid obstacles in its path.

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Pile driving - Diesel Hammer

Required Equipment: Crane equipped with diesel hammer

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Loading/unloading unit from transport	Traffic	If unloading near traffic hazard, provide reflective barricades or personnel to direct traffic away or around loading/unloading activity.
	Ground personnel	If ground personnel are present, provide barrier or personnel to direct persons on ground away from loading/unloading activity.
Tracking unit to/from point of delivery to operational site	Ground personnel Vehicular traffic	While tracking to or from sites, operators shall be vigilant for ground personnel and other vehicular traffic.
Transporting piles between work areas.	Piles falling on equipment or personnel	All piles shall be transported from storage areas to job areas in a horizontal position by forklifts or earth moving equipment equipped with forks. The operator of the crane shall not carry the pile with the bottom end more than 6-8" above the ground except to avoid obstacles in its path
Installation of piles	Falling Pike	Lifting/safety cables shall be attached from the hammer to the pile before the pile is lifted from its resting position and shall remain attached unless the pile has less than 75% of the pile length exposed above the ground surface or is in horizontal storage.
Cap piles	Fall Hazard	Employees will use full fall protection with retractable lifeline to climb the leads in order to cap the hammer to the piles. In event that climbing the leads is not feasible the employee will wear full fall protection and be trained in the use of a manlift to cap the pile.
Hearing Conservation	Hearing loss	Hearing protection is required to reduce noise exposure levels to employees to no more than 85dB. This may require pugs and muffs depending on noise exposure.
Hearing Conservation	Hearing loss	Hearing protection is required to reduce noise exposure levels to employees to no more than 85dB. This may require pugs and muffs depending on noise exposure.

Hazard: Quality Assurance Personnel

Peterson Contractors, Inc.		
Job Safety Analysis	**Activity Description:** Monitor operation to ensure compliance with specifications and site safety	
	Required Equipment: Hole cover	
Principal Activity Steps	**Potential Hazards**	**Recommended or Required Controls**
Monitor drilling and tamping operations.	Contact with mechanized equipment	Have equipment operator's attention when approaching. Do not approach from the equipment operator's blind side.
	Openholes - inactive	Ensure the drill operator does not progress too far ahead of the tamper operator. Have no more than one open hole. Open holes not being worked on must be covered. Cover must be marked "HOLE". Cover must be secured so it cannot move or slide out of position. Cover must be made from 3/4" thick plywood or heavier.
	Open hole - active	Hole cover should be at least 3/4" plywood, 24" x 48", with 6-10' attached drag rope. Cover should be marked "NO STEP". When observation of hole is required, drag hole cover by drag rope to cover minimum of 1/2 of open hole. DO NOT stand or step on hole cover. When finished, drag cover away from hole to allow work to continue. Covering a minimum of 50% of the hole opening with drill is acceptable if applicable situation is present. Personnel shall wear proper PPE that is appropriate to each site. Vest, leather boots, gloves, and safety glasses at all times. Hard hats when out of equipment cabs. All equipment shall be inspected prior to being brought onto the job site. All equipment shall be free from any type of leak. All equipment shall be in proper working order, including horn, backup alarm, and fire ext. A spill kit must be present to contain emergency leaks. Revised 08/17/06

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RIGGING

GENERAL

1. Inspection and use.

a. Rigging equipment shall be inspected as specified by the manufacturer, by a Competent Person, before use on each shift and as necessary during its use to ensure that it is safe.

b. Defective rigging shall be removed from service.

c. The use and maintenance of rigging equipment shall be in accordance with recommendations of the rigging manufacturer and the equipment manufacturer. Rigging equipment shall not be loaded more than its recommended safe working load.

d. Rigging equipment, when not in use, shall be removed from the immediate work area and properly stored and maintained in a safe condition.

2. Hoist rope shall not be wrapped around the load.

3. Running lines located within 6 ft - 6 in (1.9 m) of the ground or working level shall be guarded or the area restricted by physical barriers to preclude injury or injury from broken lines.

4. All eye splices shall be made in an approved manner. Rope thimbles of proper size shall be fitted in the eye, except that in slings the use of thimbles shall be optional.

5. When hoisting loads, a positive latching device shall be used to secure the load and rigging (i.e., self-closing safety latches, hook with a spring-loaded gate, an alloy anchor type shackle with a bolt, nut and retaining pin)

6. Hooks, shackles, rings, pad eyes, and other fittings that show excessive wear or that have been bent, twisted, or otherwise damaged shall be removed from service.

7. Custom designed grabs, hooks, clamps, or other lifting accessories (i.e., equalizing beams, lifting or spreader beams, etc.) for such units as modular panels, prefabricated structures, and similar materials shall be marked to indicate the safe working loads and shall be proof- tested before use, to 125% of their rated load.

8. Employees shall not be allowed under a suspended load at any time.

9. All loads on slings used in a basket hitch shall be balanced to prevent slippage.

10. Loads in slings shall be balanced and slings set to avoid slippage.

11. In all cases suspended loads shall be kept clear of all obstructions.

12. Slings shall not be pulled from under a load when the load is resting on the sling as damage may result from abrasion.

PERSONNEL QUALIFICATIONS

1. Any worker acting in the capacity of Rigging Lift Supervisor shall meet the requirements of this section.

2. Any worker engaged in the duties and the performance of rigging shall be a **Qualified Rigger** and as such, shall meet the following requirements:

a. Be at least 18 years of age.
b. Be able to communicate effectively with the crane operator, the lift supervisor, flagman and affected employees on site.
c. Have basic knowledge and understanding of equipment operating characteristics, capabilities, and limitations.
3. In addition, Qualified Riggers and Lift Supervisors shall be able to demonstrate knowledge and proficiency to appropriate management personnel in the following.
a. Personnel roles and responsibilities.
b. Site preparation (terrain, environment).
c. Rigging equipment and materials.
d. Safe Operating procedures.
Hands and fingers shall not be placed between the sling, and it's load while the sling is being tightened around the load.
e. Principles of safe rigging.
f. Environmental hazards (overhead interferences).
g. Rigging the load, handling the load, common causes of crane-related accidents.

MULTIPLE LIFT RIGGING (MLR)

1. USACE allows multiple lift rigging practices for the purpose of erecting/placing structural steel ONLY. Strict compliance with this section and 1926.753 Subpart R shall be mandated.
2. A Multiple Lift **is considered a critical lift** and requires a carefully detailed, written critical lift plan. In addition, all details and requirements of this section are required to be addressed in the Critical Lift Plan to include, as a minimum:
Identifying all multi-lift hazards on the job site, beam list; determining load capacity; determining weight of a member; proper crane hand signals; safety rules for multi-lift rigging; seven- foot rule; wind/environmental limits; safe route; power line issues; crane requirements; marking centerlines; use of tag line; qualifications and/or certifications of the operator(s) and rigger(s) to be performing these operations; rigging equipment: wire rope slings, hooks & shackles; clean lay-down area; cribbing; storage/staging; personal protective equipment.
3. A multiple lift may only be performed if the following criteria are met:
a. A MLR assembly is used.
b. A maximum of five members are hoisted per lift.
c. Only beams and similar structural members are lifted.
d. All employees engaged in MLR shall be trained in the following:
(1) The nature of the hazards associated with multiple lifts.
(2) The proper procedures and equipment to perform multiple lifts required in this section and as per 1926.753(e).
e. All loads shall be rigged by a qualified rigger.
f. No crane is permitted to be used for a multiple lift where such use is contrary to the manufacturer's specifications and limitations.
g. Components of the MLR assembly shall be specifically designed and assembled with a maximum capacity for total assembly and for each individual attachment point. This capacity, certified by the manufacturer or a qualified rigger, shall be based on the manufacturer's specifications with a 5:1 safety factor for all components.
h. The total load shall not exceed:
(1) The rated capacity of the hoisting equipment specified in the hoisting equipment load charts.
(2) The rigging capacity specified in the rigging rating chart.
i. The MLR assembly shall be rigged with members:

(1) Attached at their center of gravity and maintained reasonably level.
(2) Rigged from the top down; and
(3) Rigged at least 7 feet (2.1 m) apart.
j. The members on the MLR assembly shall be set from the bottom up.
k. Controlled load lowering shall be used whenever the load is over the connectors.

WIRE ROPE

1. Wire rope must be inspected, maintained, and replaced per OSHA requirement.
2. Wire rope removed from service due to defects shall be cut up or plainly marked as unfit for further use as rigging.
3. Wire rope clips attached with U-bolts shall have the U-bolts on the unloaded (dead) or short end of the rope. The clip nuts shall be retightened immediately after initial load carrying use and at frequent intervals thereafter.
4. When a wedge socket fastening is used, the unloaded (dead) or short end of the wire rope shall be looped back and secured to itself by a clip or have a separate piece of equal size wire rope attached with a clip or be properly secured to an extended wedge. The clip shall not be attached to the load (live) end.

15.D.5 Protruding ends of strands in splices on slings and bridles shall be covered or blunted.
15.D.6 Fabricated slings with eyes or endless loop slings using wire rope clips for hoisting material or lifting are prohibited except where the application precludes the use of prefabricated slings. All slings fabricated using wire rope clips shall be designed by a RPE for the specific application.
15.D.7 Except for eye splices in the ends of wires and for endless wire rope slings, wire rope used in hoisting, lowering, or pulling loads shall consist of one continuous piece without knot or splice.
a. An eye splice made in any wire rope shall have not less than five full tucks (this requirement shall not preclude the use of another form of splice or connection that can be shown to be as efficient and that is not otherwise prohibited).
b. Wire rope shall not be secured by knots except on haul back lines on scrapers.
8. Eyes in wire rope bridles, slings, or bull wires shall not be formed by wire rope clips or knots.
9. Wire rope clips shall not be used to splice rope.

CHAIN

1. Only alloyed chain shall be used in rigging.
2. Chain shall be inspected before initial use and weekly thereafter. Inspect chains on an individual link basis. Chains shall be cleaned before they are inspected, as dirt and grease can hide nicks and cracks.
a. Wear: Replacement shall be as scheduled in the OSHA regulations.
b. Stretch: Compare the chain with its rated length or with a new length of chain. If the length is increased 3%, the chain must be thoroughly inspected. If the length is increased by 5% or more, the chain shall be replaced.
c. Deformed links: Deformed (twisted or bent) links, or any chain in which a link assembly does not hinge freely with the adjoining link.

d. Cuts, gouges, or nicks: If the depth of the cut or gouge exceeds the value shown in the OSHA table, the assembly shall be replaced.
e. Cracks: Cracks and other visible damage that causes doubt as to the strength of the chain.
3. When used with alloy steel chains, hooks, rings, oblong links, pear-shaped links, welded or mechanical coupling links, or other attachments shall have a rated capacity at least equal to that of the chain.
4. Job or shop hooks and links, makeshift fasteners formed from bolts and rods, and other similar attachments shall not be used.
5. Wrought iron chains in constant use shall be annealed or normalized at intervals not exceeding 6 months when recommended by the manufacturer.

FIBER ROPE (NATURAL AND SYNTHETIC)
1. Fiber rope shall be inspected by a competent person for the following:
a. Broken or cut fibers, either internally or externally.
b. Cuts, gouges, abrasions; seriously or abnormally worn fibers.
c. Powdered fiber or particles of broken fiber inside the rope between the strands.
d. Variations in size or roundness of strands.
e. Discoloration or rotting; weakened or brittle fibers.
f. Excessive pitting or corrosion, or cracked, distorted, or broken fittings.
g. Kinks.
h. Melting or charring of the rope.
i. Other visible damage that causes doubt as to the strength of the rope.
2. Fiber rope shall not be used if it is frozen or if it has been subjected to acids or excessive heat.
3. Fiber rope shall be protected from abrasion by padding where it is fastened or drawn over square corners or sharp or rough surfaces.
4. All splices in rope slings provided by the employer shall be made in accordance with fiber rope manufacturer's recommendations.
5. Eye splices.
a. In manila rope, eye splices shall contain at least three full tucks and short splices shall contain at least six full tucks (three on each side of the centerline of the splice).
b. In layer synthetic fiber rope, eye splices shall contain at least four full tucks and short splices shall contain at least eight full tucks (four on each side of the centerline of the splice).
6. Strand end tails shall not be trimmed short (flush with the surface of the rope) immediately adjacent to the full tucks: this applies to both eye and short splices and all types of fiber rope.
a. For fiber ropes less than 1 in (2.5 cm) diameter, the tails shall project at least six rope diameters beyond the last full tuck.
b. For fiber ropes 1 in (2.5 cm) diameter and larger, the tails shall project at least 6 in (15.2 cm) beyond the last full tuck.
7. In applications where the projecting tails may be objectionable, the tails shall be tapered and spliced into the body of the rope using at least two additional tucks (which will require a tail length of approximately six rope diameters beyond the last full tuck).
8. For all eye splices, the eye shall be sufficiently large to provide an included angle of not greater than 60° at the splice when the eye is placed over the load or support.
9. Knots shall not be used in lieu of splices.

SLINGS All slings shall be in accordance with ASME B30.9.
1. Slings and their fittings and fastenings shall be inspected before use on each shift and as necessary during use.
a. Metal Mesh Slings shall be inspected for the following:

(1) Broken weld or brazed joint along the sling edge.
(2) Broken wire in any part of the mesh.
(3) Reduction in wire diameter of 25% due to abrasion or 15% due to corrosion.
(4) Lack of flexibility due to distortion of the mesh.
(5) Distortion of the choker fitting so that the depth of the slot is increased by more than 10%.
(6) Distortion of either end fitting so the width of the eye opening is decreased by more than 10%.
(7) A 15% reduction of the original cross-sectional area of metal at any point around the hook opening of end fitting.
(8) Excessive pitting or corrosion of fittings; broken or cracked fittings; distortion of either end fitting out of its plane.
(9) Other visible damage that causes doubt as to the strength of the sling.
b. Synthetic Webbing Slings shall be inspected for the following:
(1) Acid or caustic burns.
(2) Melting or charring of any part of the sling.
(3) Snags, holes, tears, or cuts.
(4) Broken or worn stitches.
(5) Excessive abrasive wear.
(6) Knots in any part of the sling.
(7) Wear or elongation exceeding the amount recommended by the manufacturer.
(8) Excessive pitting or corrosion, or cracked, distorted, or broken fittings.
(9) Other visible damage that causes doubt as to the strength of the sling.

2. Protection shall be provided between the sling and sharp unyielding surfaces of the load to be lifted.
3. The use of slings will be such that the entire load is positively secured.
4. Lengths.
a. Wire rope slings shall have a minimum length of clear wire rope equal to ten times the rope diameter between each end fitting or eye splice.
b. Braided slings shall have a minimum clear length of braided body equal to forty times the diameter of component ropes between each end fitting or eye splice.
5. Welded alloy steel chain slings shall have affixed durable permanent identification stating size, grade, rated capacity, and sling manufacturer.
6. Wire rope slings shall have affixed a durable permanent identification tag stating the diameter, rated load, lifting capacity in vertical, choker, basket configuration, and date placed in service.
7. The employer shall have each synthetic rope sling, metal mesh sling, synthetic web sling, or rounds ling marked or coded to show name or trademark of the manufacturer, rated capacities for the type of hitch, and type of material.

RIGGING HARDWARE
1. Drums, sheaves, and pulleys shall be smooth and free of surface defects that may damage rigging. All rigging hardware shall be inspected for defects prior to use:
a. Hooks that have been opened more than 15% of the normal throat opening (measured at the narrowest point) or twisted more than 10% from the plane of the unbent hook.
b. Deformed master links and coupling links.
c. Assemblies with cracked hooks or other end fittings.
d. Excessive pitting or corrosion or distorted or broken fittings.
e. Other visible damage that causes doubt as to the strength of the attachment.

2. The ratio between the diameter of the rigging and the drum, block, sheave, or pulley tread diameter shall be such that the rigging will adjust itself to the bend without excessive wear, deformation, or damage.
3. In no case will the safe diameters of drums, blocks, sheaves, or pulleys be reduced in replacement of such items unless compensating changes are made in terms of the rigging used and the safe loading limits.
4. Drums, sheaves, or pulleys having eccentric bores, cracked hubs, spokes, or flanges shall be removed from service.
5. Connections, fittings, fastenings, and attachments used with rigging shall be of good quality, of proper size and strength, and shall be installed in accordance with recommendations of the manufacturer.
6. Shackles.
a. Only marked shackles (marked by manufacturer with name or trademark of manufacturer, rated load, and size) shall be used. Shackles shall be maintained by the user so as to be legible throughout the life of the shackle.
b. Each new shackle pin shall be marked by manufacturer to show name or trademark of manufacturer and grade, material type or load rating.
c. Shackles shall be inspected visually by the use (or other designated person) and at least annually to determine condition is safe for use.
d. Repairs and/or modifications may only be as specified by the manufacturer or Qualified Person. Replacement parts, like pins, shall meet or exceed the original manufacturer's specifications.
e. Shackles shall not be eccentrically loaded (apply load to center of bow), shock loaded, nor shall they be loaded in excess of rated capacity.
f. Multiple sling legs shall not be applied to the shackle pin.
7. Hooks.
a. The manufacturer's recommendations shall be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks. Any hook for which the manufacturer's recommendations are not available shall be tested to twice the intended safe working load before it is put into use. The employer shall maintain a record of the dates and results of such tests. Hooks and shackles shall be used in accordance with the manufacturer's recommendations.
b. Open hooks are prohibited in rigging used to hoist loads.
c. Hoisting hooks rated at 10 tons (9,072 kg) or larger shall be provided with a means for safe handling.
d. Miscellaneous-type hooks (i.e., grab hooks, foundry hooks, sorting hooks and choker hooks) may be used as long as they are used, inspected, and maintained in accordance with Manufacturer's recommended use.
8. Drums.
a. Drums shall have sufficient rope capacity with recommended rope size and reeving to perform all hoisting and lowering functions.
b. At least three full wraps (not layers) of rope shall always remain on the drum.
c. The drum end of the rope shall be anchored by a clamp securely attached to the drum with an arrangement approved by the manufacturer.
d. Grooved drums shall have the correct groove pitch for the diameter of the rope. The depth of the groove shall be correct for the diameter of the rope.
(1) The flanges on grooved drums shall project beyond the last layer of rope a distance of either 2 in (5 cm) or twice the diameter of the rope, whichever is greater.
(2) The flanges on ungroomed drums shall project beyond the last layer of rope a distance of either 2 1/2 in (6.3 cm) or twice the diameter of the rope, whichever is greater.

9. Sheaves.
a. Sheaves shall be compatible with the size of rope used, as specified by the manufacturer.
b. Sheaves shall be inspected to ensure they are of correct size, properly aligned, lubricated, and in good condition.
c. When rope is subject to riding or jumping off a sheave, the sheave shall be equipped with cable-keepers.
10. Eyebolts, Eye Nuts, Swivel Hoist Rings and Turnbuckles.
a. Use of this equipment shall be in accordance with ASMEB30.26.
b. Rated load shall be in accordance with the manufacturer's recommendation.
c. Each turnbuckle, eye nut and eyebolt shall be marked with name or trademark of manufacturer, size or rated load and grade (for alloy eyebolts). In addition, each swivel hoist ring must also be marked to show torque value. Markings shall remain legible.
d. This equipment shall be inspected visually before each use by the user (or other designated person) and at least annually to determine condition is safe for use.
e. Turnbuckles shall not be side loaded and shall be rigged and secured to prevent unscrewing during the lift.
f. Eyebolts shall be tightened and secured against rotation during the lift. Eye bolts shall only be loaded in the plain of the eye and shall not be loaded at angles of less than 45° to the horizontal.
g. Shoulder less eye bolts shall not be loaded at an angle.

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Rigging

Required Equipment: Slings, etc.

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Rigging for proper lift	Failure of rigging Dropping load	Follow standard practices as trained by third party trainers Trained and authorized riggers only

Peterson Contractors, Inc.

Job Safety Analysis

Activity Description: Filling mandrel hopper per specification

Required Equipment: Forklift

Principal Activity Steps	Potential Hazards	Recommended or Required Controls
Move onto site - unload from trailer, track to start location.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.
Fill Hopper of Mandrel Move material as required	Swing radius of excavator boom and counterweights	Educate personnel in area to avoid swing radius. Outriggers as necessary per owner's manual
	Ingress and egress of forklift	Ensure forklift approaches and departs from specific direction. Rotate excavator boom in opposite direction to allow ingress from forklift / equipment
Move off of site - load onto trailer.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.

Scaffolding Safety

Scaffolding Safety: All scaffolds 10 feet or higher must have:

A top guard rail 42" above the platform.

A mid rail 21" above the platform.

A toe board at least 3-1/2 inches high on all open sides.

A screen with holes no bigger than ½" must be installed between the toes board and top rail on all scaffolds where people pass underneath.

Railings must be supported at a maximum of every 8 feet.

Work platforms should be at least 18" wide.

Planks must be of scaffold grade and must overlap at least 12".

Work platforms should extend between 6" and 18" beyond the end of their support.

Must have a stable foundation. Mudsills should be able to carry the weight without settling. All scaffolds must have a base plate.

Unstable objects such as bricks or blocks must not be used as mudsills.

Modified scaffolds must be approved by a registered engineer.

Users MUST be constantly aware of hazards, such as, but not limited to electrical lines, falling objects, defects, overhead hazards, weak base materials, etc. An evaluation must be performed prior to each set up and if any conditions change. Scaffolds must be inspected by the competent person prior to use. If any defects are found the scaffold is to be tagged out and not used until it is repaired and re-inspected by the competent person. No employee is allowed to remove the out of use tag except the competent person. A scaffolding system is not to be modified by anyone unless directed to by the competent person under the direction of a qualified engineer. Scaffolds can only be assembled by employees under the direction of the competent person.

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CONTRACTORS

RESPIRATORY PROTECTION PROGRAM

INTRODUCTION

Wearing respiratory protective devices to reduce exposure to airborne contaminants is widespread in industry. An estimated 5.0 million workers wear respirators either occasionally or routinely. Although it is preferred practice to reduce contaminant emissions at their source (e.g., using local exhaust ventilation), there are operations where this type of control is not technologically or economically achievable or is otherwise not appropriate.

Since respirators are not as consistently reliable as ventilation or other types of source control methods, and may create additional problems, they are not the preferred method of reducing exposures below the occupational exposure levels. Accordingly, their use as a primary control is restricted to certain circumstances. In circumstances where airborne contaminant sources cannot be controlled to a level below their occupational exposure limits (e.g., certain maintenance and repair operations, emergencies, or during periods when ventilation system controls are being installed), the use of respirators is permitted for worker protection. In other circumstances, where source controls alone cannot reduce exposure levels to below the occupational exposure limits, the use of respirators would be essential for supplemental protection.

There are many variables that affect the degree of protection provided by respirators and the misuse of respirators can be hazardous to employee safety and health. Selection of the wrong equipment, one of the most frequent errors made in respiratory protection, can result in the employee being exposed to increased concentrations of the harmful contaminant. This error may result in a broad range of health effects caused by the harmful contaminant, including silicosis, asbestosis, permanent lung damage, and cancer. Respirators that are not maintained and inspected can be less effective at reducing exposure to harmful contaminants and can place a greater physical burden on the respiratory system. Respirators that are not clean can cause skin irritation or dermatitis.

These and other variables can only be controlled if a comprehensive respiratory protection program is developed and implemented in each workplace where respirators are used.

Respirators can provide adequate protection if they are properly selected for the task; are fitted to the wearer and are consistently donned and worn properly; and are properly maintained so that they continue to provide the protection required for the work situation. When respirator use is supported by an appropriate respiratory protection program, it can prevent fatalities and illnesses from both acute and chronic exposures to hazardous substances.

RESPIRATORY PROTECTION PROGRAM

The primary aim of this program is to give detailed instruction in the selection of the proper respirator and its use and maintenance. The emphasis is on the implementation of a respiratory protection program developed in a logical progression of steps, as outlined:

- A clear description of the hazards that will be encountered and the degree of protection required.

- *The selection of the respirator.*
- *Medical evaluation for respirator users.*
- *Fitting of the respirator.*
- *The implementation of a maintenance program.*
- *The development of written procedures covering routine, infrequent and/or emergency procedures.*
- *The required training in the correct use and care of the respirator.*
- *Respirator program evaluation.*

Because workplaces differ substantially, each application must be tailored to the specific conditions of the workplace. The program must consist of worksite-specific procedures governing the selection, use, and care of respirators. This program will be updated as often as necessary to reflect changes in workplace conditions and respirator use.

1.0 Purpose

Peterson Contractors Inc. has determined that certain of its employees are or can be exposed to respiratory hazards. The purpose of this program is to ensure that all employees are protected from exposure to these hazards.

Engineering controls such as ventilation and substitution of less toxic materials are the first line of defense. However, engineering controls have not always been feasible for some of our operations or have not always completely controlled the identified hazards. In these situations, respirators and other protective equipment must be used. Respirators are also utilized for protection during emergencies.

2.0 Scope and Application

This program applies to all employees who are required to wear respirators during normal work operations and during certain non-routine or emergency operations. Employees participating in the respiratory protection program do so at no cost to them. The expense associated with medical evaluations, training, and respiratory protection equipment will be borne by the company.

Employees who wish to voluntarily use a cartridge style respirator when the respirator is not required must receive prior approval from the Safety Department and will be subject to the medical evaluation, cleaning, maintenance, and storage elements of this program. These individuals must also receive training covering proper procedures for cleaning, maintenance, and storage of their respirators. In addition, the information specified in "Appendix A: Important Information about Voluntary Use of Respirators" will be provided to all voluntary users of respirators.

Employees who voluntarily choose to use a filtering face piece respirator (i.e., a dust mask style respirator) are excluded from all other requirements of this program.

Voluntary use does not require employers to pay for respirators. Program costs (e.g., medical evaluations when a cartridge style respirator is used) are the responsibility of the employee.

3.0 Responsibilities

3.1 Respirator Program Administrator

The Corporate Safety Director is responsible for overseeing the respiratory protection program and to conduct the required evaluations of program effectiveness thereby ensuring that all the requirements of this program are fully implemented, as necessary.

Duties of the Program Administrator include:

- Identifying work areas, processes or tasks that require workers to wear respirators, and evaluating hazards.
- Selection of respiratory protection options.
- Monitoring respirators use to ensure that respirators are used in accordance with their certifications.
- Arranging for and/or conducting training.
- Ensuring proper storage and maintenance of respiratory protection equipment.
- Conducting qualitative/quantitative fit testing.
- Administering the medical surveillance program.
- Maintaining records required by the program.
- Evaluating the program.

- Updating the written program as necessary to reflect workplace changes that affect respirator use.

3.2 Supervisors

Supervisors are responsible for ensuring that the respiratory protection program is implemented in their particular areas. In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure that the program is understood and followed by the employees under their charge. Duties of the supervisor include:

- Ensuring that employees under their supervision (including new hires) have received appropriate training, fit testing, and medical evaluation.
- Ensuring the availability of appropriate respirators and accessories.
- Being aware of tasks requiring the use of respiratory protection.
- Enforcing the proper use of respiratory protection when necessary.
- Ensuring that respirators are properly cleaned, maintained, and stored according to the respiratory protection plan.
- Ensuring that respirators fit well and do not cause discomfort.
- Continually monitoring work areas and operations to identify changes in respiratory hazards.
- Coordinating with the Program Administrator on how to address respiratory hazards or other concerns regarding the program.

3.3 Employees

Each employee has the responsibility to wear his or her respirator when and where required and in the manner in which they were trained. Employees must also:

- Care for and maintain their respirators as instructed and store them in a clean and sanitary location.
- Inform their supervisor if the respirator no longer fits well and request a new one that fits properly.
- Inform their supervisor or the Program Administrator of any respiratory hazards that they feel are not adequately addressed in the workplace and of any other concerns that they have regarding the program.
- Notify their supervisor or the Program Administrator of any other problems associated with using their respirator.

4.0 Respirator Selection

The Program Administrator is responsible to ensure that the respirator selected will be adequate to effectively reduce exposure to the respirator user under all conditions of use including reasonably foreseeable emergency situations.

4.1 Evaluating Respiratory Hazards

The Program Administrator will select respirators to be used on-site based on the hazards to which workers are exposed and in accordance with all OSHA standards. The Program Administrator, his designee, or customer's site safety person will conduct a hazard evaluation for each operation, process, or work area where airborne contaminants may be present in routine operations or during an emergency. The hazard evaluation will include:

- Identification of respiratory hazard sources and development of a hazardous substance list used in the workplace by location or work process.

While identifying a respiratory hazard it is important to determine whether the hazard includes oxygen deficiency, a particle (i.e., dust, fume, mist, spray), a vapor (i.e., from a volatile liquid), a gas or a combination of any of these hazards since respirators are designed to protect against specific types of hazards.

For particle hazards, particle size is no longer necessary to consider if selecting from particulate respirators designated by an "N-, R-, or P- "classification.

- Review of work processes to determine where hazardous exposures occur and the magnitude of the exposures. This review will be conducted by surveying the workplace, reviewing process records, obtaining objective data (if available), and talking with employees and supervisors.

Objective data from industry studies or other sources may be used to estimate employee exposures if the process, substances used, work practices, control methods (i.e., ventilation), environmental conditions and other factors are comparable to the workplace being evaluated.

- When necessary, exposure monitoring will be conducted to measure potential hazardous exposures. Monitoring will be conducted by the Corporate Safety Director, his designee, or the customer safety party.

Air monitoring and analysis of workplace hazards determines the magnitude of exposure potential, and the level of protection required. Respirators selected must be capable of protecting against overexposure by reducing and maintaining exposure to or below the relevant exposure limit. In addition to the OSHA Permissible Exposure Limits (PEL), employers should refer to the ACGIH (American Conference of Governmental Industrial Hygienists) recommended Threshold Limit Values (TLV's), the NIOSH (National Institute for Occupational Safety and Health) Recommended Exposure Limits (REL's), or other occupational exposure limits.

The results of the hazard evaluation are summarized in Table 1.

TABLE 1: HAZARD EVALUATION SUMMARY (*Examples only - Employer assessment required*)				
Department	**Contaminants**	**Exposure Monitoring**	**Permissible**	**Controls**
Construction	Lead	20 µg/m3 TWA	50 µg/m3 TWA 30 µg/m3 AL	Hand scraping only
Intensive Care	TB bacillus	N/A	N/A	Neg. pressure HVAC system
Paint Shop	Methylene biphenyl isocyanate (MDI)	0.5 ppm Ceiling	0.02 ppm Ceiling	Continuous flow supplied–air respirator required
Hull Fab Shop	Styrene Fiberglass dust	75 ppm TWA 35 mg/m3TWA	50 ppm TWA 100 ppm STEL 10 mg/m3TWA	Open bay doors
Glue deck	Formaldehyde	0.35 ppm TWA 1.0 ppm STEL	0.5 ppm AL 0.75 ppm TWA 2 ppm STEL	Full-facepiece with formaldehyde canisters required on glue deck
Confined Space Rescue Team	IDLH atmospheres	Assume IDLH	N/A	SCBA required for rescue

4.2 Hazard Evaluation Update

The Program Administrator is responsible to revise and update the hazard evaluation as needed (i.e., any time work process changes may potentially affect employee exposure). If an employee feels that respiratory protection is needed during a particular activity, s/he is to contact their supervisor or the Company Safety Director. The Program Administrator will evaluate the potential hazard. The Program Administrator will then communicate the results of that assessment back to the affected employees. If it is determined that respiratory protection is necessary, all other elements of this program will be in effect for those tasks and this program will be updated accordingly.

4.3 Workplace and User Factors

The Program Administrator will review the job operation, the equipment or tools that will be used, and any motion or travel required which can interfere with the type of respirator to be selected. When powered, air-purifying respirators or continuous-flow airline respirators are used, the physical demands affecting breathing rate will be evaluated.

The Program Administrator will ensure that respirators selected will not impair the worker's vision, hearing, communication, and physical movement necessary to perform jobs safely. *(For example, airline respirators should not be used by mobile employees around moving machinery to avoid entanglement of the respirator in the equipment, and connection to a clean air source must be considered.)*

Work activities of employees wearing respirators must be considered. Temperature and humidity conditions in the workplace may also affect the physical stress level associated with wearing a respirator, as well as the effectiveness of respirator filters and cartridges. In addition, employees wearing respirators for longer periods of time may need respirators that impose the minimum possible physical burden. These factors must be part of the evaluation process in selecting appropriate equipment for a particular work situation.

4.4 Respirator Selection Table

Respirators have been selected for protection against gases, vapors, and particulate. Respirators are required for all employees engaged in tasks specified in Table 2.

TABLE 2: RESPIRATOR SELECTION (*Examples only - Employer assessment required*)

Respirator	**Department/Process**
Half-facepiece APR[1]or PAPR[2] with P100 filter	Scraping lead-containing paint
Half–facepiece APR with N95 filter	Tuberculosis Isolation Room Transport of TB patients

[1] APR …Air Purifying Respirator
[2] PAPR…. Powered Air Purifying Respirator

	Maintenance of ventilation system for TB control
Continuous-flow SAR[3] with hood	Isocyanate paint spray operations Abrasive blasting using steel shot
Half-facepiece APR with organic vapor cartridge	Spray booth operators (acetone exposure during gun cleaning) Fiberglass lamination; styrene exposure Toluene-containing clearcoat application Cleaning press rollers with organic solvent blanket wash
Half-facepiece APR with particulate filter	Grinding/sanding; fiberglass dust
SCBA, full-facepiece pressure-demand	Mill emergency rescue team – various contaminants

4.5 NIOSH Certification

All respirators must be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall be used in accordance with the terms of that certification. All filters, cartridges, and canisters must be labeled with the appropriate NIOSH approval label. The label must not be removed or defaced while it is in use.

NIOSH certification numbers start with the designation, "TC- ". Each fully assembled respirator is assigned one "TC- "number. Look for certification numbers in the product instructions or as part of some other packages insert.

Interchanging of respirator parts (e.g., cartridges or airline hoses) between different manufacturers' respirators or between different respirator models made by the same manufacturer may void NIOSH certification and should be avoided unless it has been determined that all parts in the respirator assembly are part of the same "TC" number.

4.6 Assigned Protection Factors

The assigned protection factors in "Table 1--Assigned Protection Factors" will be used when selecting respirators. Half-mask respirators can provide adequate protection for routine respirator use, where employee exposures do not exceed ten times the permissible exposure limit. The Program Administrator will determine the type of respirator to be selected for non-routine or reasonably foreseeable emergency situations.

The assigned protection factor (APF) is a numeric rating given to respirators and tells you how much protection the respirator can provide. The APF for half-facepiece (half-mask) respirators is "10." Example: A half-mask respirator could be selected for an employee exposed to 1000 ppm toluene vapor, the OSHA permissible exposure limit (PEL) for toluene being 100 ppm. The protection factor for half-mask respirators is ten times the exposure level or up to 1000 ppm toluene, in this example.

4.7 Contaminant Breakthrough Warning Systems

The employer must consider the period the respirator will be used by employees during a work shift. Breakthrough times for different chemicals can vary greatly and are dependent on the

[3] SAR …Supplied Air Respirator

concentrations of contaminants in the workplace air, patterns of respirator use, and environmental factors including temperature and humidity. A respirator that provides adequate protection for one chemical may be inadequate for another chemical with a different breakthrough time.

If you use air-purifying respirators with vapor and/or gas cartridges:

Respirators equipped with an end-of-service life indicator (ESLI) are certified by NIOSH for a specific contaminant. ***ESLI are available for carbon monoxide, mercury, ethylene oxide, hydrogen sulfide and vinyl chloride canisters only****.*

To create replacement schedules, use manufacturers' "software calculators", if available, to obtain breakthrough times estimates. If software is not available, contact your manufacturer to obtain breakthrough time data for the specific respirator model chosen and adjust breakthrough times to reflect your workplace conditions (e.g., relative humidity, temperature, breathing rate and contaminant concentration) by applying the OSHA "Rule of Thumb" listed below.

To use software calculators, you must compile the following information using conservative estimates:

1. *Exposure levels of contaminant*
2. *Estimate of user breathing rate*
3. *Relative humidity (seasonal)*
4. *Temperature (seasonal)*

"Rule of Thumb" estimates the service life of cartridges exposed to chemicals. The suggested Rule of Thumb is:

1. If the chemical's boiling point is > 70 °C and the concentration is less than 200 ppm you can expect a service life of 8 hours at a normal work rate.
2. Service life is inversely proportional to work rate.
3. Reducing concentration by a factor of 10 will increase service life by a factor of 5.
4. Humidity above 85% will reduce service life by 50%.

For respirators worn exclusively for protection against particles, filters will be changed per the manufacturer's specification and whenever the wearer detects a change in breathing resistance.

4.8 Atmospheres Requiring Highest Level of Protection

For atmospheres that are immediately dangerous to life and health (IDLH), the highest level of respiratory protection and reliability is required. The following respirators will be provided and used: Full-facepiece pressure demand self-contained breathing apparatus (SCBA) certified for a minimum service life of thirty minutes, or a combination full-facepiece pressure demand supplied-air respirator (SAR) with an auxiliary self-contained air supply.

5.0 Medical Evaluation

Employees assigned to tasks where respirators are utilized must be physically able to perform the work while using the respirator. Accordingly, the company has the responsibility of ensuring that employees are medically fit and able to tolerate the physical and psychological stress imposed by respirator use, as well as the physical stress originating from job and workplace conditions. Employees will not be allowed to wear respirators until a physician or other licensed health care professional (PLHCP) has determined that they are medically able to do so.

Any employee refusing the medical evaluation cannot work in an area requiring respirator use.

The purpose of a medical evaluation program is to determine if employees can tolerate the physiological burden associated with respirator use, including:

- *The cardio-pulmonary or other burdens imposed by the respirator itself (e.g., its weight, breathing resistance during both normal operation and under conditions of filter, canister, or cartridge overload and increased carbon dioxide levels inside the respirator facepiece due to re-breathing of expired air).*
- *Musculoskeletal stress (i.e., when the respirator to be worn is a SCBA).*
- *Limitations on auditory, visual, and olfactory sensations.*
- *Isolation from the workplace environment.*

Since certain jobs and workplace conditions in which a respirator is used can also impose a physiological burden on the user, the medical evaluation must also consider the following factors:

- *Type and weight of the respirator to be worn.*
- *Duration and frequency of respirator use.*
- *Expected physical work effort.*
- *Use of other protective clothing and equipment to be worn.*
- *Temperature and humidity extremes that may be encountered.*

Employees voluntarily using filtering facepiece respirators (dust masks) and employees using loose fitting escape-only respirators (provided that is the only respirator used) are exempt from the requirements of the medical evaluation program.

5.1 Information Provided to the PLHCP

The "Employer Provided Information for Medical Evaluations" form in Appendix B of this written program will be used to compile the necessary user-specific information to be provided to the PLHCP. The user-specific information describes:

- The type and weight of the respirator to be used by the employee.
- The duration and frequency of respirator use (e.g., for routine, rescue, and escape tasks).
- The expected physical work effort (e.g., "low", "medium" or "high" as indicated in Appendix B).
- Additional protective clothing and equipment to be worn.
- Estimates of temperature and humidity extremes that may be encountered.
- Any special or hazardous conditions the employee could encounter.

5.2 Medical Questionnaire Administration

Employees assigned to tasks requiring the use of respirators will be required to complete the "Respirator Medical Evaluation Questionnaire" in Appendix C or similar form supplied by the medical provider. The Program Administrator or medical provider will make available a copy of the questionnaire to all employees requiring medical evaluations. The medical evaluation will be administered confidentially and during working hours at a place on site that is convenient to employees.

To the extent feasible for maintaining confidentiality, the Program Administrator or his/her designee will aid employees who are unable to read the questionnaire by providing reading assistance.

If needed, employees will have the opportunity to discuss the questionnaire content and/or examination results with the PLHCP via telephone call. During questionnaire administration, the PLHCP's phone number will be given to employees and access to a phone will be provided at no charge to the employee. All records from medical evaluations, including completed questionnaires, will remain confidential.

5.3 PLHCP's Written Recommendations

The company will obtain a written recommendation from the PLHCP on whether/or not the employee is medically able to wear a respirator. The recommendation must identify any limitations on the employee's use of the respirator, as well as the need for periodic or future medical evaluations that are required by the PLHCP.

A powered air-purifying respirator (PAPR) will be provided to any employee if information from the PLHCP's written recommendation indicates that the employee can use a PAPR but not a negative pressure respirator. If, after this evaluation, the PLHCP determines that the employee is able to wear a negative pressure respirator, the company will no longer be required to provide a PAPR to that employee.

The employee will receive a copy of the PLHCP's written recommendations directly from the PLHCP. Information concerning diagnosis, test results, or other confidential medical information will not be disclosed to the company by the PLHCP.

5.4 Additional Medical Evaluations

The company will provide additional medical evaluation or medical re-evaluation for any employee when:

- The employee reports medical signs or symptoms that are related to the employee's ability to use a respirator.
- A PLHCP, supervisor, or the respirator program administrator observes that the employee is having a medical problem during fit testing or workplace respirator use.
- Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee re-evaluation.
- A change occurs in workplace conditions (e.g., physical work effort, type of respirator used, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on an employee.

The content of such additional medical evaluations will be determined by the PLHCP.

6.0 Fit Testing

It has long been recognized that tight-fitting respirators must fit properly to provide their expected level of protection. To obtain adequate respiratory protection, there must be a proper match between the respirator seal and wearer's face. Respirators that don't seal properly around the face offer only the illusion of protection.

The primary purpose of fit testing is to identify the specific make, model, style, and size of respirator best suited for each employee. In addition, fit testing also provides an opportunity to check on problems with respirator wear and reinforces respirator training by having wearer's review the proper methods of donning and wearing the respirator.

To accommodate the variability of face size characteristics among individuals, several manufacturers offer facepieces in several sizes and models.

Fit testing will be required for all respirators with a tight-fitting facepiece. Fit testing will be performed:

- After an employee has completed their medical evaluation and prior to being allowed to wear any respirator with a tight fitting facepiece in the work environment.
- Whenever a different respirator facepiece is used.
- At least annually thereafter.
- When there are changes in the employee's physical condition that could affect respiratory fit (e.g., obvious change in body weight, facial scarring, etc.)

Employees will be fit tested with the make, model, and size of respirator that they will wear. Employees will be provided with several models and sizes of respirators so that they may find the optimal fit.

Fit testing of tight-fitting PAPRs is to be conducted in negative pressure mode (i.e., with the fan motor turned off).

Fit testing of tight-fitting airline respirators will be conducted using an identical negative pressure air purifying respirator facepiece as a substitute test mask.

If for any reason an employee finds that the respirator fit is unacceptable, a reasonable opportunity to select a different facepiece and to be retested will be provided.

Employees who voluntarily chose to use air-purifying respirators are not required to be fit tested.

The form in "Appendix C: Respirator Fit Test record" will be used to document respirator fit testing.

6.1 Fit Testing Procedure

Prior to the actual fit test, the employee must be shown how to put on a respirator, position it on the

face, set strap tension, and determine an acceptable fit. Next, the employee must be allowed to choose a respirator from a sufficient number of models and sizes so that the employee can find a comfortable and correctly fitting respirator. Once an acceptable respirator has been found -- which takes into account the position of the mask on the face, nose, and cheeks, room for eye protection, and room to talk -- a user seal check must be conducted to make sure the respirator is functional and is seated adequately on the user's face before the fit-test can be conducted.

It has been determined that employee exposures will not exceed airborne concentrations in excess of 10 times the Permissible Exposure Limit (PEL), therefore qualitative fit tests can be conducted on all negative pressure respirators. If conditions affecting exposure levels change, the Program Administrator will evaluate whether quantitative fit testing is required.

Fit testing will be administered by using the OSHA-accepted qualitative fit test protocols found in Appendix A-1: General Fit Testing Requirements for Respiratory Protection and Appendix A-2: Qualitative /fit Testing (QLFT) Protocols for Respiratory Protection

A QLFT involves exposure to a smoke, vapor or mist test agent after it has been determined that the respirator wearer can detect the test agent. During the fit test the wearer performs a series of physical exercises that challenge the fit of the respirator selected. If the presence of the test agent is detected during the test, the respirator fit is considered to be inadequate, and the wearer must select another respirator for testing.

6.2 Fit Testing Exercises

When qualitative fit tests are to be conducted, the Program Administrator will ensure that the test exercises are performed.

While a fit test is in progress, the respirator must not be adjusted.

Employees will perform fit test exercises in the test environment while wearing other safety equipment that will be worn during actual respirator use that could interfere with respirator fit.

If the employee exhibits breathing difficulty during the fit test, s/he will be referred to the PHLCP to determine whether a respirator can be worn while performing his or her duties.

7.0 Respirator Use

The Program Administrator, his designee, or the customer safety representative the will monitor the work area in order to be aware of changing conditions where employees are using respirators.

Once the respirator has been properly selected and fitted, it is necessary to ensure that the respirator is used properly in the workplace. The following conditions may compromise the effective use of the respirator and jeopardize worker protection:

- *Facepiece seal leakage.*
- *Removing the respirator at the wrong times in hazardous atmospheres.*
- *Not properly performing user seal checks.*
- *Not properly repairing defective parts.*

In these circumstances, there is the danger that employees may have a false sense of security in feeling that they are protected when they are not.

Employers are required to routinely evaluate workplace conditions, changes in the degree of employee exposure, and changes in physical stress so that additional or different respiratory protection can be provided when necessary. By observing respirator use under actual workplace conditions, employers can note problems such as changes in the fit of a respirator due to the use of other protective equipment or conditions leading to skin irritation.

7.1 Facepiece Seal Protection

The company will not permit respirators with tight-fitting facepieces to be worn by employees who have conditions that would compromise the facepiece-to-face seal. Examples of these conditions include facial hair (e.g., stubble, bangs) that interferes with the facepiece seal or valve function, absence of normally worn dentures, facial deformities (e.g., scars, deep skin creases, prominent cheekbones), or the use of jewelry or headgear that projects under the facepiece seal.

Corrective glasses or goggles, or other personal protective equipment, must be worn in such a way that they do not interfere with the seal of the facepiece to the face. Full-facepiece respirators will be provided where either corrective glasses or eye protection is required, since corrective lenses can be mounted inside a full-facepiece respirator. The use of contact lenses with respirators where the wearer has successfully worn such lenses before will be allowed.

A user seal check *(also known as a fit check)* will be performed every time a tight-fitting respirator is put on or adjusted to ensure proper seating of the respirator to the face. The user seal check conducted must be either the positive and/or negative pressure checks described in Appendix B-1: User Seal Check Procedures," or the manufacturer's recommended procedures when equally protective.

7.2 Monitoring Respirator Effectiveness

The Program Administrator and/or Supervisors (for person, lead, etc.) will be responsible to maintain appropriate surveillance of changes in work area conditions that may increase employee exposure or stress.

Employees will be permitted to leave the respirator use area to wash their faces and respirator facepieces as needed to prevent skin or eye irritation associated with respirator use.

Whenever the respirator user can detect vapor or gas breakthrough (by odor, taste, and/or irritation effects), a change in breathing resistance or leakage of the facepiece, the employee will be allowed to leave the respirator use area to replace the respirator or the filter, cartridge, or canister elements.

Employees will be permitted to leave the respirator use area if they are replacing cartridge or canister elements according to the established replacement schedule or when the end-of-service-life indicator (ESLI) shows that the canister or cartridge(s) must be changed.

Employees will be permitted to leave the respirator use area if the respirator is not properly functioning and must be replaced, repaired, or discarded. The employee will be allowed back into the respirator use area only after the respirator has been replaced or repaired.

Employees will be permitted to leave the respirator use area if the employee experiences severe discomfort in wearing the respirator or if the employee experiences sensations of dizziness, nausea, weakness, breathing difficulty, coughing, sneezing, vomiting, fever, and chills.

7.3 Procedures for Immediately Dangerous to Life and Health (IDLH) Situations

Atmospheres are IDLH when they pose an immediate threat to life, would cause irreversible adverse health effects, or would interfere with an individual's ability to escape from a dangerous atmosphere. Care must be exercised in these situations since failure of the respirator to provide the appropriate protection may result in immediate risk for serious injury or death. Consequently, the employer must develop and implement specific workplace procedures for the use of respirators in IDLH atmospheres that covers entrant monitoring, communication, standby personnel, equipment for rescue, and other requirements as specified.

This section does not apply to confined space entry or HAZWOPER activities. The specific requirements of those programs as addressed elsewhere.

8.0 Maintenance and Care

The Program Administrator will oversee the maintenance and care program.

The OSHA standard requires that employers provide each respirator user with a respirator that is clean, sanitary, and in good working order. These requirements are a vital part of any successful respiratory protection program.

To ensure that the respirator remains serviceable and delivers effective protection, a maintenance program must be in place prior to respirator use and must address:

- *Cleaning and disinfecting procedures.*
- *Proper storage.*
- *Regular inspections for defects (including leak check).*
- *Repair methods.*

In addition to the above, the manufacturer's instructions for inspection, cleaning, and maintenance of respirators should be consulted.

8.1 Cleaning and Disinfecting

Respirators will be cleaned and disinfected as follows:

- Respirators that are issued for the exclusive use of an employee will be cleaned and disinfected as often as necessary to be maintained in a sanitary condition. Employees will be responsible to clean and disinfect respirators issued for their exclusive use.

- Respirators used by more than one employee will be cleaned and disinfected prior to being used by a different individual.

- Respirators maintained for emergency use as well as respirators used in fit testing and training will be cleaned and disinfected after each use.

- During fit-tests, disinfectant wipes can be used in between respirator wears to minimize the risk for spreading cold, influenza or other respiratory illness. ***Note:*** *The person cleaning respirators with disinfectant wipes must be so trained.* At the end of the day, each respirator will be completely disassembled and cleaned by immersion.

8.2 Storage

Respirators will be stored so that they are protected against damage, contamination, dust, sunlight, temperature extremes, excessive moisture, and damaging chemicals. When respirators are packed or stored, the facepiece and exhalation valve will be stored in a manner that prevents deformation. Each respirator should be positioned so that it retains its natural configuration.

The Program Administrator is responsible to ensure that respirators intended for emergency use will be kept accessible to the work area. Emergency use respirators will not be kept in any area that might itself be involved in the emergency because such an area may become contaminated or inaccessible. Emergency use respirators will be stored in compartments or covers that are clearly marked to indicate that they contain emergency respirators and stored according to any applicable manufacturer instructions.

8.3 Inspection

Respirators used in routine situations will be inspected before each use and during cleaning.

Respirators designated for use in an emergency situation will be inspected at least monthly and in accordance with the manufacturer's instructions and checked for proper function before and after each use. Emergency escape-only respirators must be inspected before being carried into the workplace. Self-contained breathing apparatus (SCBA) will be inspected monthly and after each use.

Respirator inspections will include a check of respirator function, tightness of connections, and the condition of the various parts including but not limited to: The facepiece, head straps, valves, connecting tube, and cartridges, canisters, or filters. In addition, the elastomeric parts must be evaluated for pliability and signs of deterioration.

Regulators and warning devices on SCBAs must be inspected monthly to ensure that they function properly. The monthly inspection will also make sure that cylinders are in a fully charged capacity (i.e., 90 % of the manufacturer’s recommended pressure level).

Respirators that are maintained for use in emergencies will be certified by documenting the date that the inspection was performed, the name or signature of the inspector, the findings of the inspection, any required remedial action, and a serial number or other means of identifying the inspected respirator. This information will be provided on the tag/label that is attached to the storage compartment for the respirator.

8.4 Repair

The Program Administrator or designee will ensure that respirators which fail to pass inspection or are otherwise found to be defective will be removed from service and repaired or adjusted properly. If a respirator cannot be repaired or adjusted, it will be discarded.

Only NIOSH-approved manufacturer's replacement parts designed for that respirator will be used. Repairs will be made in accordance with the manufacturer's recommendations and specifications regarding the type and extent of repairs to be performed.

Because components such as reducing and admission valves, regulators, and alarms are complex and essential to the safe functioning of SCBAs, they are required to be adjusted and repaired only by the manufacturer or a technician trained by the manufacturer.

SCBA's air and oxygen cylinders will be maintained in a fully charged state and recharged when the pressure falls to 90% of the manufacturer's recommended pressure level.

SCBA air and oxygen cylinders will be hydrostatically tested according to the manufacturers recommended frequency. All composite-wrapped aluminum cylinders will be taken out of service after 15 years regardless of the last hydrostatic test date.

9.0 Breathing Air Quality

The Program Administrator will ensure that breathing air for atmosphere-supplying respirators will be of high purity, meets quality levels for content, and does not exceed certain contaminant levels and moisture requirements.

9.1 Compressors

Compressors used for supplying breathing air must be constructed and situated so contaminated air cannot enter the air-supply system. The location of the air intake will be in an uncontaminated area where exhaust gases from nearby vehicles, the internal combustion engine that is powering the compressor itself *(if applicable)*, or other exhaust contaminants being ventilated will not be picked up by the compressor air intake.

Compressors will be equipped with suitable in-line, air-purifying sorbent beds and filters to further ensure breathing air quality and to minimize moisture content so that the dew point at 1

atmosphere pressure is 10°F (5.56°C) below the ambient temperature. Sorbent beds and filters will be maintained and replaced or refurbished periodically according to the manufacturer's recommendations. An inspection tag will be kept at the compressor indicating the most recent change date and the signature of the Program Administrator or designee authorized to perform the maintenance.

The Program Administrator will ensure that the compressor intake will not allow the introduction of carbon monoxide greater than 10 parts per million (ppm) into the system. ***Note:*** *This could be from sources other than the compressor such as forklifts/vehicles or other gas-powered equipment.* Where this is not possible or feasible, it may be necessary to combine the use of a carbon monoxide alarm with a carbon monoxide sorbent bed when conditions are such that a reliable carbon monoxide-free area for air intake cannot be found.

For oil-lubricated compressors, you must use a high-temperature or carbon monoxide (CO) alarm, or both, to monitor CO levels. If only high-temperature alarms are used, the air supply must be monitored at intervals sufficient to make sure the concentration of CO in the breathing air does not exceed 10 ppm.

Breathing air couplings must be incompatible with outlets for non-respirable plant air or other gas systems to prevent accidental servicing of airline respirators with non-respirable gases or oxygen. No asphyxiating substance *(e.g., nitrogen)* will be allowed in the breathing airlines.

10.0 Identification of Filters, Cartridges and Canisters

The Program Administer will ensure that all filters, cartridges, and canisters used in the workplace are labeled and color-coded with the NIOSH approval label and ensure that the label is not removed and remains legible.

11.0 Training and Information

Employee training is an important part of the respiratory protection program and is essential for correct respirator use. The OSHA respiratory protection standard requires employers to provide training before the employee uses a respirator in the workplace. For the training to be effective, the training information must be comprehensive and presented in an understandable way.

Under some conditions, additional training will be required to supplement the annual training. Circumstances which require additional training include situations where changes in the workplace (e.g., process changes, increase in exposure, emergence of new hazards) or the type of respirator used by the employee render previous training obsolete. Additional training is also required when the employee has not retained the requisite understanding or skill to use the respirator properly, or when any other situation arises in which retraining appears necessary.

Employee training must include a discussion of why the use of the respirator is necessary. Such training would address the identification of the hazards involved, the extent of employee exposures to those hazards, and the potential health effects of such exposures.

Employees will be trained prior to using a respirator in the workplace. Supervisors will be trained prior to using a respirator in the workplace or prior to supervising employees who wear

respirators.

Employees who voluntarily use filtering facepiece (dust mask) respirators are exempt from the training requirements. Voluntary users of elastomeric air-purifying respirators will receive limited training regarding cleaning and storage.

The information specified in "Appendix A, Important Information about Voluntary Use of Respirators" will be provided all voluntary users of respirators

11.1 Respiratory Protection Training Guideline

The Respiratory Protection Training course materials will cover the following information:

- Information regarding the consequences of improper fit, usage, or maintenance on respirator effectiveness will be provided to employees. Inadequate attention to any of these program elements would obviously defeat the effectiveness of the respirator. Proper fit, usage, and maintenance of respirators are critical to ensure employee protection.

- Employees will be provided an explanation of the limitations and capabilities of the respirator selected for employee use. A discussion of the limitations and capabilities of the respirator will address how the respirator operates. Training will include an explanation of how the respirator provides protection by either filtering the air, absorbing the vapor or gas, or providing clean air from an uncontaminated source, as applicable. Training will include limitations on the use of the equipment such as prohibitions against using an air-purifying respirator in IDLH atmospheres and an explanation of why such a respirator must not be used in these situations.

- Employees will be provided an explanation to understand how to use the respirator effectively in emergency situations including those in which the respirator malfunctions. Comprehensive training will be provided where respirators are used in IDLH situations including oxygen-deficient atmospheres such as those that occur in rescue operations.

- Training will include the procedures for inspecting the respirator, donning, and removing it, checking the fit and respirator seal, and actually wearing the respirator. Employees will be capable of recognizing any problems that may threaten the continued protective capability of the respirator. The training will include the steps employees are to follow if they discover any problems during inspection, that is, whom the problems are to be reported to and where they can obtain replacement equipment if necessary.

- Instructions will be given to respirator users regarding the proper procedures for maintenance and storage of respirators.

- Employees will be provided with medical information that is sufficient for them to recognize the signs and symptoms of medical conditions (e.g., shortness of breath, dizziness) that may limit or prevent the effective use of respirators.

- Employees will be informed of the general requirements of the WISHA respiratory protection standard. This discussion will inform employees that employers are obligated to develop a written program, properly select respirators, evaluate respirator use and correct deficiencies in use, conduct medical evaluations, provide for the maintenance, storage, and cleaning of respirators, and retain and provide access to specific records.

Employees will demonstrate their understanding of the information covered in the training through hands-on exercises and a written test. The Program Administrator will document respirator training and the documentation will include the type, model, and size of respirator for which each employee has been trained and fit tested. The form in "Appendix D: Respirator Training Record" will be used to document employee training.

11.2 Frequency of Training

Annual training is necessary and appropriate to ensure that employees know about the respiratory protection program and that they cooperate and actively participate in the program. Training and interaction with respirator instructors on at least an annual basis reinforce employee knowledge about the correct use of respirators and other pertinent elements of the respiratory protection program. It also builds employee confidence when using respirators.

New employees will be provided respirator training prior to using a respirator in the workplace.

Employees will be retrained annually and more often as needed (e.g., if they change area/location/position and need to use a different respirator).

Retraining will occur if the Program Administrator or Supervisor determines that any employee has not retained or demonstrated the knowledge, understanding, or skill level required by the company's training program

12.0 Program Evaluation

The Program Administrator is responsible to conduct evaluations of the workplace, as necessary. Periodic program evaluation is required to ensure that the provisions of the respiratory protection program are being implemented for all employees using respirators. In addition, evaluations will be conducted to ensure the continued effectiveness of the program. Evaluations of the workplace will determine whether the correct respirators are being used and worn properly and will also serve to determine whether the training program is effective.

Supervisors are responsible to periodically monitor employee use of respirators to ensure that they are being used and worn properly.

The Program Administrator will regularly consult with employees wearing respirators to ascertain the employees' views on program effectiveness and to identify any problems so that corrective action can be taken.

The following factors will be evaluated to determine program effectiveness:

- Respirators are properly fitted and if employees are able to wear respirators without interfering with effective workplace performance.
- Respirators are correctly selected for the hazards encountered.
- Respirators are used properly depending on the workplace conditions encountered.
- Respirators are being maintained and stored properly.

The Program Administrator will be responsible to correct any problems associated with wearing a respirator that are identified by employees or that are revealed during any other part of this evaluation.

13.0 Recordkeeping

The Program Administrator will retain a copy of the PLHCP's written recommendation for each employee subject to medical evaluation. Each employee's completed medical questionnaire, results of relevant medical tests, examinations, and diagnosis, etc., will be maintained by the PHLCP for a period of 30 years. Records of medical evaluations will be made available as specified in OSHA's Access to Records rule.

The Program Administrator will retain fit test records for respirator users until the next fit test is administered. These records consist of:

- Name or identification of the employee tested.
- Type of fit test performed (QLFT, QNFT -- irritant smoke, saccharin, etc.).
- Make, model, and size of the respirator fitted.
- Date of the fit test.
- Pass/fail results if a QLFT is used; or
- Fit factor and strip chart recording or other record of the test results if quantitative fit testing was performed.

The form in "Appendix C: Respirator Fit Test Record" or the medical providers similar form will be used to document employee fit testing.

The Program Administrator will retain employee training records that include the names of employees trained and the dates when training was conducted.

The Program Administrator will keep a current copy of Peterson Contractors Inc.'s written respiratory protection program in the Safety Director's office. All written materials required to be maintained under the recordkeeping requirements will be made available, upon request, to the employee who is subject of the records and to the director or the director's designee of the Washington State Department of Labor and Industries for examination and copying.

Appendix A: Important Information about Voluntary Use of Respirators

What must you do when employees choose to wear respirators when respirators are not required?

(1) You may provide respirators at the request of employees or permit employees to use their own respirators, if you determine that such respirator use will not in itself create a hazard.

(2) If you determine that any voluntary respirator use is permissible, you must provide the respirator users with the following information:

Figure 1 Important Information About Voluntary Use of Respirators

*Note: **"You"** and **"your"** mean the employee in the following information.*

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

You should do the following:

1. Read and follow all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against solvent vapor or smoke (since smoke particles are much smaller than dust particles).
4. Keep track of your respirator so that you do not mistakenly use someone else's.

Appendix B: Employer Provided Information for PLHCP

- Copy of the written Respirator Plan
- Job description

Employer Provided Information for Medical Evaluations

OSHA requires that certain information regarding respirator use must be provided by the employer to the physician or licensed health care provider (PLHCP).

The following *general information* must be provided to the PLHCP by the employer:

- A copy of your written respiratory protection program.

In addition, certain *respirator user specific information* must be provided.

This form may be used by the employer to provide the *respirator user specific information* to the PLHCP but is not a required form.

Specific Respirator Use Information

Employee Name: _____ Company name: _____

Employee job title: _____ Company Address: _____

Company contact person and phone number: _____

1. Will the employee be wearing protective clothing and/or equipment (other than the respirator) when using the respirator?
   Yes/No _____ If "Yes," describe protective clothing and/or equipment:
   _____
   _____

2. Will employee be working under hot conditions (temperature exceeding 77°F)?
Yes/No _____ If "Yes", describe nature of work and duration:

_____

_____

3. Will employee be working under humid conditions? Yes / No_____

4. Describe any special or hazardous conditions the employee could encounter when using the respirator (for example, confined spaces, life-threatening gases).

_____

_____

Specific Respirator Use Information, Continued

Check Appropriate Box	Respirator Type	Face / Head Cover Type (i.e., 1/2 or full face, helmet, hood)	Frequency of Use (i.e., hours / day, week, month)	Work Effort Light, Moderate, Heavy (see descriptions below)	Respirator Weight
	Disposable facepiece particulate filter (N, R or P series)	1/2 facepiece			
	Mask with replaceable filter or cartridge				
	Mask with canister				
	Powered air-purifying respirator (PAPR)				
	Airline, continuous flow				
	Airline, negative pressure demand				
	Airline, positive pressure demand				
	SCBA, negative pressure demand	Full facepiece			
	SCBA, positive pressure demand	Full facepiece			

Work Effort Descriptions

Examples of a **light work effort** are sitting while writing, typing, drafting, or performing light assembly work; or standing while operating a drill press (1-3 lbs.) or controlling machines.

Examples of **moderate work effort** are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; walking on a level surface about 2 mph or down a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

Examples of **heavy work effort** are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lb.).

APPENDIX C: Respirator Fit Test Record

Name: _____ Initials: _____

Type of qualitative/quantitative fit test used: _____

Name of test operator: _____ Initials: _____

Date: _____

RESPIRATOR MFR./MODEL/APPROVAL NO.	SIZE	PASS/FAIL
1. _____	S M L	P F
2. _____	S M L	P F
3. _____	S M L	P F
4. _____	S M L	P F

NOTES: _____

_____

_____

_____

This record indicates that you have passed or failed a qualitative or quantitative fit test as shown above for the respirator(s) shown. Other types will not be used until fit tested.

APPENDIX D: Respirator Training Record

_____Employee Name (printed)

I certify that I have been trained in the use of the following:

This training included the inspection procedures, fitting, maintenance, and limitations of the above respirator(s). I understand how the respirator operates and provides protection. I further certify that I have heard the explanation of the unit(s) as described above and I understand the instructions relevant to use, cleaning, disinfecting and the limitations of the unit(s).

_____
Employee Signature

_____
Instructor Signature

_____
Date

Air-purifying respirator a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

Assigned protection factor (APF) the expected level of workplace protection provided by a properly functioning respirator worn by properly fitted and trained individuals. It describes the ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator.

Atmosphere-supplying respirator a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere and includes supplied-air respirators (SAR's) and self-contained breathing apparatus (SCBA) units.

Canister or cartridge a container with a filter, sorbent, or catalyst, or a combination of these items, that removes specific contaminants from the air passed through the container.

Demand respirator an atmosphere-supplying respirator that admits breathing air to the facepiece only when a negative pressure is created inside the facepiece by inhalation.

Emergency situation any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled substantial release of an airborne contaminant.

Employee exposure an exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.

End-of-service-life indicator (ESLI) a system that warns the respirator user of the approach of the end of adequate respiratory protection; for example, that the sorbent is approaching saturation or is no longer effective.

Escape-only respirator a respirator intended to be used only for emergency exit.

Filtering facepiece (dust mask) a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

Filter or air-purifying element a component used in respirators to remove solid or liquid aerosols from the inspired air.

Fit factor a quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

Fit test the use of a protocol to evaluate the fit of a respirator qualitatively or quantitatively on an individual. See also "Qualitative fit test (QLFT)" and "Quantitative fit test (QNFT)."

Helmet a rigid respiratory inlet covering that also provides head protection against impact and penetration.

High efficiency particulate air (HEPA) filters a filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter and larger. The equivalent NIOSH 42 CFR part 84 particulate filters are the N100, R100, and P100 filters.

Hood a respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.

Immediately dangerous to life or health (IDLH) an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a

dangerous atmosphere.

Interior structural firefighting the physical activity of fire suppression, rescue or both, inside of buildings and enclosed structures that are involved in a fire situation beyond the incipient stage.

Loose-fitting facepiece a respiratory inlet covering that is designed to form a partial seal with the face.

Negative pressure respirator (tight fitting) a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

Oxygen deficient atmosphere an atmosphere with oxygen content below 19.5% by volume.

Physician or other licensed health care professional (PLHCP) an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by WAC 296-62-07150, "Medical evaluation." In Washington State, physicians (MD or DO), physicians assistants (PA) or nurse practitioners (ARNP) qualify to be designated as a PLHCP.

Positive pressure a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

Powered air-purifying respirator (PAPR) an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

Pressure demand respirator a positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.

Qualitative fit test (QLFT) a pass/fail fit test to assess the adequacy of respiratory fit that relies on the individual's response to the test agent.

Quantitative fit test (QNFT) an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

Respiratory inlet covering the portion of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device or breathing air source, or both. It may be a facepiece, helmet, hood, suit, or a mouthpiece respirator with nose clamp.

Self-contained breathing apparatus (SCBA) an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

Service life the period of time that a respirator, filter or sorbent or other respiratory equipment provides adequate protection to the wearer.

Supplied-air respirator (SAR) or airline respirator an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

Tight-fitting facepiece a respiratory inlet covering that forms a complete seal with the face.

User seal check an action conducted by the respirator user to determine if the respirator is properly seated to the face.

Hazard: Skid Loader Operations

Peterson Contractors, Inc.		
Job Safety Analysis	**Activity Description:** Filling and tamping various diameter holes per specification	
	Required Equipment: Skid loader	
Principal Activity Steps	**Potential Hazards**	**Recommended or Required Controls**
Move onto site - unload from trailer, track to start location.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.
Fill specified diameter holes Move material as required	Swing radius of excavator boom and counterweights	Educate personnel in area to avoid swing radius.
	Open holes	Insure filling and tamping operations keep up with drilling operation. Cover holes not being work on with appropriate plywood covers specifically fabricated to keep cover from sliding. Cover must be marked clearly with the word HOLE.
	Ingress and egress of skid loader	Ensure skid loader approaches and departs from specific direction. Rotate excavator boom in opposite direction to allow ingress from skid loader.
Move off of site - load onto trailer.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.
		Personnel shall wear proper PPE that is appropriate to each site. Vest, leather boots, and safety glasses at all times. Hard hats when out of equipment cabs.
		All equipment shall be inspected prior to being brought onto the job site. All equipment shall be free from any type of leak. All equipment shall be in proper working order, including horn, backup alarm, and fire ext.
		A spill kit must be present to contain emergency leaks.

SPILL PREVENTION AND RESPONSE OF HAZARDOUS OR TOXIC AGENTS

GENERAL

1. Exposure standards.

a. Exposure, through inhalation, ingestion, skin absorption, or physical contact, to any chemical, biological, or physical agent in excess of the acceptable limits specified in the most recently published ACGIH guideline, "*Threshold Limit Values and Biological Exposure Indices,*" or by OSHA, whichever is more stringent, shall be prohibited. For the purpose of this document, the term used for the most stringent standard is the Occupational Exposure Limit (OEL).

b. In case of conflicts between ACGIH and other standards or regulations referenced in this manual, the more stringent shall prevail.

c. The employer shall comply with all applicable standards and regulations to reduce contaminant concentration levels As Low As is Reasonably Achievable (ALARA).

d. Activities where occupational exposure to a chemical or biological agent is possible shall comply with current OSHA regulations.

2. Hazard evaluation.

a. All operations, materials, and equipment shall be evaluated to determine the presence of hazardous environments or if hazardous or toxic agents could be released into the work environment.

b. The analyses shall identify all substances, agents, and environments that present a hazard and recommend hazard control measures. Engineering and administrative controls shall be used to control hazards; in cases where engineering or administrative controls are not feasible, PPE may be used.

c. The analyses shall identify that it serves as certification of hazard assessment, that the workplace and activity has been evaluated, the name of the person certifying that the evaluation has been performed and the date of the evaluation.

d. As all work sites are different, operations, materials, and equipment involving potential exposure to hazardous or toxic agents or environments shall be evaluated by a qualified industrial hygienist, or other competent person, to formulate a hazard control program.

3. Testing and monitoring.

a. Approved and calibrated testing devices shall be provided to measure hazardous or toxic agents, and environments. Devices shall be labeled with calibration information (name of individual performing the calibration and date of current calibration). Calibration results shall be logged.

b. Individuals performing testing and monitoring shall be trained in hazards and testing and monitoring procedures. Testing devices shall be used, inspected, and maintained in accordance with the manufacturer's instructions, a copy of which shall be maintained with the devices.

c. NIOSH or OSHA sampling and analytical methods or other approved sampling and analytical methods shall be used. Laboratories used for analysis shall be accredited by nationally recognized bodies, such as the American Industrial Hygiene Association (AIHA), for the type of analysis performed.

d. Determinations of the concentrations of, and hazards from, hazardous or toxic agents and environments shall be made by a qualified industrial hygienist or other competent person during initial startup and as frequently as necessary to ensure the safety and health of the work environment.
e. Records of testing/monitoring shall be maintained on site and shall be available upon request.
4. The following methods shall be utilized for the control of exposure to hazardous or toxic agents and environments:
a. Substitution, if the substitute process or product is determined to provide the same outcome and to be less of a hazard.
b. Engineering controls (such as local/general ventilation), to limit exposure to hazardous or toxic agents and environments within acceptable limits.
c. Work practice controls, when engineering controls are not feasible or are not sufficient to limit exposure to hazardous or toxic agents and environments within acceptable limits.
d. Appropriate PPE (i.e., respirators, gloves, etc.) and associated programs shall be instituted when engineering, work practice controls or material substitution are not feasible or are not sufficient to limit exposure to hazardous or toxic agents.

HAZARDOUS OR TOXIC AGENTS
1. Chemical Hazard Communication. A written hazard communication program shall be developed when the use of hazardous or toxic agents (any chemical which is a physical/health hazard) are procured, stored or used at a project site (per 29 CFR 1910.1200). The written hazard communication (hazcom) program shall address the following in project- specific detail:
a. Hazardous or Toxic Agent Inventory. A list of the hazardous or toxic agents with the following information:
(1) Explanation of how the agent is to be used at the project.
(2) For emergency response purposes, approximate quantities (e.g., liters, kilograms, gallons, pounds) that will be on site at any given time shall be provided for each material.
(3) A site map will be attached to the inventory showing where inventoried substances are stored.
(4) The inventory and site map will be updated as frequently as necessary to ensure accuracy.
b. Hazardous or Toxic Agent Labeling. Procedures for assuring that containers used to store and transport hazardous or toxic agents around the project site are appropriately labeled to communicate the physical and health hazards associated with the agents in the containers.
c. Material Safety Data Sheet (MSDS) Management. Procedures to ensure MSDSs are maintained at project site for each agent.
(1) Employees shall review MSDSs for specific safety and health protection procedures.
(2) Applicable information contained in the MSDS can be attached for activities in which material will be used.
(3) The information will be followed in the use, storage, and disposal of material and selection of hazard control and emergency response measures.

d. Employee Information and Training. Procedures to ensure employees are trained initially and periodically when use of hazardous or toxic agents is altered or modified to accommodate changing on-site work procedures. Training shall cover the following topics:
(1) Requirements and use of the hazcom program on the project.
(2) The location of all hazardous or toxic agents at the project.
(3) Identification and recognition of hazardous or toxic agents on the project.
(4) Physical and health hazards of the hazardous or toxic agents pertinent to project activities.
(5) Protective measures employees can implement when working with project-specific hazardous or toxic agents.
(6) Spill control measures based upon the types of containers. These measures may include, but are not limited to, absorbent pads and socks, dikes, berms, or other similar containment devices.
2. When engineering and work practice controls or substitution are either infeasible or insufficient, appropriate PPE and chemical hygiene facilities shall be provided and used for the transportation, use, and storage of hazardous or toxic agents.
a. When irritants or hazardous substances may contact skin or clothing, chemical hygiene facilities and PPE shall be provided. PPE may include suitable gloves, face/eye protection and chemical protective suits.
(1) The qualified industrial hygienist or other competent personnel shall determine the scope and type of protective equipment.
(2) Special attention shall be given to selecting proper chemical protection when working with materials designated with a “skin” notation. Such materials may produce systemic toxic effects through absorption through unbroken skin.
b. When eyes or body of any person may be exposed to hazardous or toxic agents, suitable facilities for quick drenching or flushing of the eyes and body shall be provided in the work area for immediate emergency use and shall be no more than ten (10) seconds from the hazardous material. ***> See ANSI Z358.1.***
(1) Emergency eyewash equipment must be provided where there is the potential for an employee’s eyes to be exposed to corrosives, strong irritants, or toxic chemicals.
(2) The emergency eyewash equipment must irrigate and flush both eyes simultaneously while the operator holds the eyes open.
(3) The emergency eyewash equipment must deliver at least 0.4-gal (1.5 L) of water per minute for fifteen (15) minutes or more (minimum 6 gallons (22.7 L) water).
(4) Personal eyewash equipment may be used to supplement emergency washing facilities. They must not be used as a substitute. Personal eyewash fluids shall be visually inspected monthly to ensure they remain sanitary with no visible sediments.
(5) All plumbed emergency eyewash facilities and hand-held drench hoses shall be activated weekly and inspected annually to ensure that they function correctly and that the quality and quantity of water is satisfactory for emergency washing purposes.
3. Storage prior to transportation of hazardous chemicals, materials, substances and wastes shall be under the supervision of a qualified person.
a. Transportation, use, and storage of hazardous or toxic agents shall be planned and controlled to prevent contamination of people, animals, food, water, equipment, materials, and environment.

b. All storage of hazardous or toxic agents shall be in accordance with the recommendations of the manufacturer, OSHA and NFPA requirements and accessible only to authorized personnel.
c. Disposal of surplus or excess hazardous or toxic agents shall occur in a manner that will not contaminate or pollute any water supply, ground water, or streams; and will comply with Federal, State, and local regulations and guidelines.
d. Containers used to hold hazardous or toxic agents should not be used to hold other materials unless they have been managed or cleaned under hazardous waste and Department of Transportation (DOT) regulatory requirements.
e. Every hazardous or toxic agent being transported for disposal shall be transported with a copy of the substance's MSDS whenever applicable.
f. Persons who prepare shipments of hazardous chemicals, materials, substances and/or wastes that are defined as hazardous material under DOT regulations are required to be DOT trained, certified, and issued an appointment letter in accordance with Defense Transportation Regulation 4500.9-R, Chapter 204.

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Stop Work Authority

All/Any PCI employee is authorized and has the authority to stop production/operations when conditions warrant, or a hazardous situation presents itself without fear of discipline or reprisal. Employees are authorized to evacuate the job site if necessary. This authority is addressed to employees during the new hire orientation process and annually thereafter. Training shall be documented during new hire orientation and by the sign-off sheet from the annual issuance of the Safety Handbook to all employees.

In the event of a Stop Work, the site supervisor will evaluate the hazard. The supervisor will contact the Safety Office who will consult and insure a proper solution to the hazard. The project will not resume operations until the situation has been corrected. The Stop Work will be documented on the PCI Incident Report From and forwarded to the Safety Officer for review and modification of safety policy if appropriate. The hazard situation will be reviewed by the site supervisor to ensure the desired outcome was achieved and forwarded to the Safety Officer. The Safety Officer will follow up after the Stop Work is closed and periodically thereafter to ensure the situation has been mitigated on an ongoing basis.

Peterson Contractors, Inc.		
Job Safety Analysis	**Activity Description:** Filling and tamping various diameter holes per specification	
	Required Equipment: Excavator equipped with tamping attachment	
Principal Activity Steps	**Potential Hazards**	**Recommended or Required Controls**
Move onto site - unload from trailer, track to start location.	Spectators	Ensure area is barricaded or personnel are instructed to keep spectators out of operational areas.
Drill specified diameter holes	Swing radius of excavator boom and counterweights	Educate personnel in area to avoid swing radius.
	Open holes	Insure filling and tamping operations keep up with drilling operation. Cover holes not being worked on with appropriate plywood covers specifically fabricated to keep cover from sliding. Cover must be marked clearly with the word HOLE. All holes left open after hours must be covered and/or barricaded. Cover a minimum of 50% of the hole with the drill when QA personnel are taping depth.
	Ingress and egress of skid loader	Ensure skid loader approaches and departs from specific direction. Rotate excavator boom in opposite direction to allow ingress from skid loader. Personnel shall wear proper PPE that is appropriate to each site. Vest, leather boots, and safety glasses at all times. Hard hats when out of equipment cabs. All equipment shall be inspected prior to the start of operations. All equipment shall be in proper working order, including horn, backup alarm, and fire ext.
Move off of site - load onto trailer.	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.

Peterson Contractors, Inc.		
Job Safety Analysis	**Activity Description:** Grub trees and chip as required **Required Equipment:** Excavator, dozer, chipper as required	
Principal Activity Steps	**Potential Hazards**	**Recommended or Required Controls**
Remove trees, shrubs, and other botanical material	Contact with mechanized equipment	Have equipment operator's attention when approaching. Do not approach from the equipment operator's blind side. Be aware of moving equipment. All equipment has the right of way.
	Poisonous plants	Avoid contact with poisonous plants, such as poison ivy, poison oak, etc.
	Wildlife	Watch for and avoid wild animals that may be living in trees or dens
	Poisonous insects	Watch for and avoid poisonous insects that may be in trees or earthen dens
Chipping	Contact with moving equipment	Keep hands and other body parts away from moving equipment. Watch for moving heavy equipment.

Peterson Contractors, Inc.		
Job Safety Analysis	**Activity Description:** Mobilization	
	Required Equipment: Heavy equipment such as excavators, trucks, dozers, scrapers, etc.	
Principal Activity Steps	**Potential Hazards**	**Recommended or Required Controls**
Driving on construction site	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas. Use caution tape or barricade fence as is appropriate.
	Pinch points	Wear leather gloves to avoid pinch injuries from chain and chain binders
	Blind area	Provide spotters if operational blind spots are present
Move material as specified	Swing radius of excavator boom and counterweights	Barricade counterweight and boom radius with cones if necessary
	Open excavations	Be aware of equipment location. Do not approach too close to shelf. Be aware of soil type.
	Moving equipment	Be aware of moving equipment. Loaded equipment has right of way.
	Ingress and egress of trucks	Ensure skid loader or trucks approach and depart from specific direction. Rotate excavator boom in opposite direction to allow ingress from skid loader or truck.
Loading - off loading	Spectators	Ensure area is barricaded or personnel is supplied to keep spectators out of operational areas.
	Pinch points	Wear leather gloves to avoid pinch injuries from chain and chain binders
	Blind area	Provide spotters if operational blind spots are present when unloading equipment
Roadway / Haul Road driving	Traffic	Observe and drive appropriately in traffic conditions
	Surface Conditions	Follow DOT requirements on driving, loads, weights, etc. if appropriate
		Do NOT overdrive conditions. I.e.. Slower speed on rough driving surfaces, especially on quarry or job site haul roads

Weather Concerns

Introduction

Workers in the normal course of their duties are required to perform work in adverse weather conditions. Precautions and continuing safety measures must be taken by each worker to minimize health risks and discomfort from working in these conditions.

Hot Weather

Workers should prepare for hot weather prior to the work shift by "hydrating" or drinking water. Continuing to drink water frequently throughout the work shift will help prevent the body from dehydrating, and allows sweating, which cools and regulates the body's temperature. When exposed to sunlight, a sunscreen should be used to minimize UV exposure. Loose, light-colored, clothing shall be used.

Cold Weather

Workers should prepare for cold weather by wearing several layers of clothing. This allows the worker to remove or add layers as necessary throughout the work shift as temperature and the worker's body heat changes. Coffees, teas, and other hot drinks may help the worker maintain body temperature. Under no circumstances shall any alcoholic beverages be used. Hoods, facemasks, insulated boots, gloves, and glove liners, should all be considered in extreme weather conditions. Certain combinations of temperature, wind, and jobsite location may make it impractical to work. In those extreme cases, workers should check with their supervisor or the Safety Department for direction.

Wet or Inclement Weather

Workers exposed to rain, sleet, snow, or other wet conditions, shall wear protective, waterproof clothing. Careful assessment of the jobsite under inclement weather conditions must be made. Slips and falls may happen in the general area of work, in addition to slips from ladders, scaffold, or other work surfaces. Any electrically operated tools shall not be used in wet conditions due to the risk of electrical shock.

Windy Conditions

Some workers in windy conditions are at great risk. Handling large, lightweight, materials, working from ladders, or elevated work surfaces, and working with small, lightweight materials, are all examples of job duties that pose special hazards in windy conditions. Therefore, each jobsite and work assignment shall be assessed for dangers from high winds, and necessary precautions taken. Use of cranes shall be suspended any time wind velocities exceed 20mph. Additional care shall be used when wind velocities exceed 10 mph.

WELDING AND CUTTING

GENERAL

1. Welders, cutters, and their supervisor shall be trained in the safe operation of their equipment, safe welding/cutting practices, and welding/cutting respiratory and fire protection. ***"Welding Health and Safety: A Field Guide for Professionals" is recommended.***

2. All welding equipment shall be inspected before each use to ensure that all required safety devices and ancillary equipment are in place and properly functioning. Defective equipment shall be removed from service, replaced or repaired, and reinspected before again being placed in service.

3. Electrical and pressurized system requirements.

a. Welding cylinders and their use and maintenance shall meet the applicable requirements of the OSHA regulations.

b. Arc welding and cutting systems and their use shall meet the applicable requirements of this section.

4. Arc welding and cutting operations shall be shielded by noncombustible or flameproof screens that will protect employees and other persons working in the vicinity from the direct rays of the arc, sparks, molten metal, spatter, and chipped slag.

5. Cable, hoses, and other equipment shall be kept clear of passageways, ladders, and stairways.

6. Welding and cutting of hazardous materials.

a. When welding, cutting, or heating on steel pipelines containing natural gas, 49 CFR 192 shall apply.

b. Before welding, cutting, or heating is commenced on any surface covered by a preservative coating whose flammability is not known, a test shall be made to determine its flammability. Preservative coatings shall be considered highly flammable when scrapings burn with extreme rapidity.

c. Preservative coatings shall be removed a sufficient distance from the area to be heated to ensure any temperature increase of the unstripped metal will not be appreciable; artificial cooling of the metal surrounding the heating area may be used to limit the area to be stripped.

d. When welding, cutting, or heating toxic surface coatings (paints, preservatives, surface stripping chemicals, etc.) in enclosed spaces, all surfaces covered with the coatings shall be stripped of such for a distance of at least 4 in (10.1 cm) from the area of heat application or the employees shall be protected by airline respirators.

7. All structural welding performed on critical items, such as scaffolding, shoring, forms, ladders, piling, etc., as well as other critical items as designated by the GDA, shall only be performed by welders certified in accordance with American Welding Society (AWS) standards using qualified and approved welding practices and procedures (AWS certification or approved equivalent organization which trains to AWS standards).

8. Before heat is applied to a drum, container, or hollow structure, a vent or opening shall be provided for the release of any built-up pressure generated during the application of heat.

9. Employees performing welding, cutting, and heating work shall be protected by PPE appropriate for the hazards that they may encounter and based upon the results of an AHA conducted specifically for the welding, cutting, or heating operation that they will be performing. All required respiratory, eye and face, noise, head, foot, and skin protection equipment shall be selected and used in accordance with OSHA regulations.
10. All welding and cutting equipment and operations shall be in accordance with standards and recommended practices of American National Standards Institute (ANSI)/American Welding Society (AWS) Z49.1.

RESPIRATORY PROTECTION

1. All welding, cutting, and heating operations shall be ventilated (natural or mechanical) such that personnel exposures to hazardous concentrations of airborne contaminants are within acceptable limits.
2. Welding, cutting, and heating not involving conditions or materials described in this Section may normally be done without mechanical ventilation or respiratory protective equipment.
3. Either general mechanical or local exhaust ventilation shall be provided whenever welding, cutting, or heating is performed in a confined space.
4. Materials of toxic significance. Welding, cutting, or heating operations that involve or generate any of the substances listed below shall be performed in accordance with the following subparagraphs: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Chromium (VI), Cobalt, Copper, Lead, Manganese, Mercury, Nickel, Ozone, Selenium, Silver, or Vanadium.
a. Whenever these materials are encountered in confined spaces, local mechanical exhaust ventilation and personal respiratory protective equipment shall be used. The use of local mechanical exhaust ventilation systems that permit the re-entry of exhaust air back into the work area, or local exhaust which incorporate a system for the filtration and recirculation of exhaust air back into the work area shall not be permitted.
b. Whenever these materials, except beryllium and chromium (VI), are encountered in indoor operations, local mechanical exhaust ventilation systems that are sufficient to reduce and maintain personal exposures to within acceptable limits shall be used. The use of local mechanical exhaust systems that permit the re-entry of exhaust air back into the work area, or that include a system for the filtration and the recirculation of exhaust air back into the work area are not permitted. When either beryllium or chromium (VI) is encountered in indoor operations, approved local mechanical exhaust ventilation systems and personal respiratory protection shall be used.
c. Whenever these materials, except beryllium and chromium (VI), are encountered in outdoor operations, and local mechanical exhaust ventilation systems sufficient to reduce and maintain personal exposures to within acceptable limits are not provided, then appropriate respiratory protective equipment shall be used.
d. Whenever beryllium and chromium (VI), are encountered in outdoor operations, the need for and type of engineering and work practice controls to be implemented, as well as the need for and type of respiratory protection to be provided shall be based upon the results of an initial worker exposure assessment and exposure determination with regards to these substances.

e. Workers may be exposed to hazardous concentrations of chromium (VI) while welding, cutting or performing hot work on stainless steel, high chrome alloys or chrome-coated metal, or during the application and removal of chromate-containing paints and other surface coatings. ***> See OSHA's Standard for Hexavalent Chromium (Chromium (VI), 29 CFR 1926.1126.***

5. Welding, cutting, or heating operations that involve or generate fluorine or zinc compounds shall be performed in accordance with the following:

a. In confined spaces, local mechanical exhaust ventilation and personal respiratory protection sufficient to maintain exposures to within acceptable limits shall be used.

b. In open spaces, sampling shall be performed to determine concentrations of fluorides or zinc compounds and the need for local exhaust ventilation and personal respiratory protection sufficient to maintain exposures to within acceptable limits.

6. Arc and gas cutting. Oxygen cutting using either an iron powder or chemical flux, gas-shielded arc cutting, and plasma cutting shall employ local mechanical exhaust ventilation or other means adequate to remove the fumes generated.

7. Other persons exposed to the same atmosphere as welders or cutters shall be protected in the same manner as welders or cutters.

FIRE PROTECTION

1. Suitable fire extinguishing equipment of sufficient capacity shall be provided in the immediate vicinity of welding or cutting operations and maintained in a state of constant readiness for immediate use. Hot work permits may be required on projects when welding, cutting, or heating operations are performed.

2. Before conducting welding or cutting operations, the area shall be surveyed to ensure it is free of the following hazards:

a. Proximate combustible materials,

b. The presence or possible generation of potentially explosive atmospheres (flammable gases, vapors, liquids, or dusts); and

c. The presence or nature of an oxygen-enriched atmosphere.

3. Hierarchy of fire control. Objects to be welded, cut, or heated shall be:

a. Moved to a location free of dangerous combustibles.

b. If the work cannot be moved, all moveable fire hazards in the vicinity shall be taken to a safe place (moved at least 35 ft (10.6 m) horizontally from the welding or cutting area) or the combustible material and construction shall be protected from the heat, sparks, and slag of welding.

c. When welding or cutting must be done in a location where combustible or flammable materials are located, inspection and authorization by the GDA shall be required before such operations are begun (the location shall be checked for latent fires by qualified fire watch personnel after the work is completed).

4. When a welding, cutting, or heating operation is such that normal fire prevention precautions are not sufficient, additional qualified fire watch personnel shall be assigned to guard against fire and shall be instructed in anticipated fire hazards and how firefighting equipment is to be used.

5. When welding or cutting is to be done over combustible flooring, the flooring shall be protected by fire-resistant shielding, covered with damp sand, or kept wet. Where

flooring is wet or damp, personnel operating arc welding or cutting equipment shall be protected from potential shock hazards.
6. Noncombustible barriers shall be installed below welding or burning operations in a shaft or raise.
7. Openings or cracks in walls, floors, or ducts within 35 ft (10.6 m) of the site of welding or cutting operations shall be tightly covered to prevent the passage of sparks to adjacent areas.
8. Where welding or cutting is to be done near walls, partitions, ceilings, or roofs of combustible construction, fire resistant guards shall be provided to prevent ignition.
9. Where welding or cutting is to be done on a metal wall, partition, ceiling, or roof, precautions shall be taken to prevent ignition, due to heat conduction or radiation, of combustibles on the other side.
10. Welding or cutting shall not be done on a metal partition, wall, ceiling, or roof with a combustible covering nor on walls or partitions of combustible sandwich-type panel construction.
11. Before welding or cutting drums, tanks, or other containers and equipment that have contained hazardous materials, the containers shall be thoroughly cleaned in accordance with NFPA 326 and ANSI/AWS F4.1.
12. Hot tapping or other welding or cutting on a flammable gas or liquid transmission or distribution pipeline shall be performed only by personnel qualified to make hot taps.
13. When welding or cutting is to be conducted near a sprinkler head, a wet cloth or equivalent protection shall be used to cover the sprinkler head and then removed at the completion of the welding or cutting operation.
14. When welding or cutting in areas protected by fire detection and suppression systems, precautions shall be taken to avoid accidental initiation of these systems.

OXYFUEL GAS WELDING AND CUTTING

1. Oxyfuel gas welding and cutting equipment shall be listed by a nationally recognized testing laboratory.
2. Oxygen cylinders and apparatus.
a. Oxygen cylinders and apparatus shall be kept free from oil, grease, and other flammable or explosive substances and shall not be handled with oily hands or gloves.
b. Oxygen cylinders and apparatus shall not be used interchangeably with any other gas.
3. Hose and hose connections.
a. Fuel gas hose and oxygen hose shall be readily distinguishable from each other.
b. Oxygen and fuel gas hoses shall not be interchangeable. A single hose having more than one gas passage shall not be used.
c. Hose couplings of the type that can be unlocked or disconnected without a rotary motion are prohibited.
d. Hose that has been subject to flashback or that shows evidence of severe wear or damage shall be tested to twice the normal pressure to which it is subjected, and in no case less than 300 psi. Damaged hose and hose connectors, or hose and hose connectors in questionable condition, shall not be used.
e. When parallel runs of oxygen and fuel gas hose are taped together, not more than 4 out of every 12 in (10 out of every 30.4 cm) shall be covered by tape.

f. Boxes used for the storage of gas hose shall be ventilated.
g. Hose connections shall be clamped or otherwise securely fastened in a manner that will withstand, without leakage, twice the pressure to which they are normally subjected in service, but not less than 300 psi (2,068 kPa) gauge.
4. Torches.
a. Torches shall be inspected before each use for leaking shutoff valves, hose couplings, and tip connections. Defective torches shall not be used.
b. Hoses shall be purged individually before lighting the torch for the first time each day. Hoses shall not be purged into confined spaces or near ignition sources.
c. Clogged torch tip openings shall be cleaned with suitable cleaning wires, drills, or other devices designed for such purposes.
d. Torches shall be lighted by friction lighters or other approved devices, not by matches or from hot work.
5. Torch valves shall be closed, and the gas supply shut off whenever work is suspended.
6. The torch and hose shall be removed from confined spaces whenever work is suspended.
7. Protective equipment.
a. Oxyfuel gas, and other oxygen-fuel gas welding and cutting systems using cylinder-regulator-hose-torch shall be equipped with both a reverse-flow check valve and a flash arrestor, in each hose, at the torch handle or at the regulator.
b. When oxygen-fuel gas systems are manifolded together the provisions of NFPA 51 shall apply.
8. Connection of multiple sets of oxyacetylene hoses to a single regulator on a single set of oxyacetylene tanks may only be accomplished by installing a commercially available fitting approved by Compressed Gas Association (CGA) standards and listed by a nationally recognized testing laboratory. The fitting shall be installed on the output side of the regulator and shall have a built-in shut-off valve and reverse-flow check valve on each branch.
9. Acetylene regulators shall not be adjusted to permit a discharge greater than 15 PSI.

ARC WELDING AND CUTTING

1. Electric welding apparatus shall be installed, maintained, and operated in accordance with the NEC.
2. Manual electrode holders.
a. Only manual electrode holders specifically designed for arc welding and cutting of a capacity capable of safely handling the maximum rated current required by the electrodes shall be used.
b. All current carrying parts passing through the portion of the holder that is gripped by the welder or cutter, and the outer surfaces of the jaws of the holder, shall be fully insulated against the maximum voltage encountered to ground.
3. Welding cables and connectors.
a. Cables shall be completely insulated, flexible, capable of handling the maximum current requirements of the work in progress, and in good repair. Cables in need of repair shall not be used.

b. Welding cables shall be inspected for wear or damage before each use. Cables with damaged insulation or connectors shall be replaced or repaired to achieve the same mechanical strength, insulating quality, electrical conductivity, and water tightness of the original cable. Cables containing splices or repaired insulation within a minimum distance of 10 ft (3 m) from the end of the cable to which the electrode holder is connected shall not be used.
c. Where it becomes necessary to connect or splice lengths of cable together, insulated connectors of a capacity at least equivalent to that of the cable shall be used. When connections are affected by cable lugs, they shall be securely fastened together to give good electrical contact and the exposed metal parts of the lugs shall be completely insulated. The joining of lengths of cable shall be accomplished by methods specifically intended for that purpose and connection methods shall provide insulation adequate for the service conditions.
4. The frames of arc welding and cutting machines shall be grounded either by a third wire in the cable connecting the circuit conductor or by a separate wire that is grounded at the source of the current.
5. Neither terminal of the welding generator shall be bonded to the frame of the welder.
6. Pipelines containing gases or flammable liquids or conduits carrying electrical conductors shall not be used for a ground return circuit.
7. Circuits from welding machines used for other than welding tools shall be grounded.
8. Welding supply cables shall not be placed near power supply cables or other high-tension wires.
9. Welding leads shall not be permitted to contact metal parts supporting suspended scaffolds.
10. Switching equipment for shutting down the welding machine shall be provided on or near the welding machine.
11. Equipment shall be shut down when the leads are unattended.
12. Arc welding and cutting operations shall be shielded by noncombustible or flameproof screens to protect employees and other visitors from the direct rays of the arc.
13. Coiled welding cable shall be spread out before use.

GAS METAL ARC WELDING

1. Chlorinated solvents shall be kept at least 200 ft (61 m) away from the exposed arc, unless shielded. Surfaces prepared with chlorinated solvents shall be dry before welding is permitted on such surfaces.
2. Persons in the area not protected from the arc by screening shall be protected by filter lenses. When two or more welders are exposed to each other's arc, filter lens goggles shall be worn under welding helmets. Hand shields shall be used to protect the welders against flashes and radiant energy when either the helmet is lifted, or the shield is removed.
3. Welders and other persons who are exposed to radiation shall be protected so that the skin is covered to prevent burns and other damage by ultraviolet rays. Welding helmets and hand shields shall be free of leaks, cracks, openings, and highly reflective surfaces.

4, When gas metal arc welding is performed on stainless steel, chrome alloy steel, or chrome-coated metal, personnel shall be protected against dangerous concentrations of nitrogen dioxide and other air contaminants such as chromium (VI), by means of an approved local exhaust ventilation system that is capable of reducing and maintaining personal exposures to within permissible limits, or by means of other effective work practice and engineering controls such as the use of an argon-rich (> 75% argon) shielding gas for use in gas metal arc welding (GMAW) or flux cored arcwelding (FCAW) operations. Wherever engineering and work practice controls are not sufficient to reduce employee exposures below permissible limits, the employer shall use them to reduce employee exposures to the lowest levels achievable and shall supplement such methods using respiratory protection that complies with the requirements of OSHA regulations.