

SAFETY PROGRAM

7/1/2024

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POLICY

MJ Hughes Construction Inc. maintains a safe, healthy and productive work environment for our employees. The protection of our employees, property, the public and the environment are essential to the efficient and successful completion of every construction project we undertake. It is an inherent company belief that the prevention of accidents and safety awareness is more than just good business, it is a moral obligation. Accident prevention is important because safety is a VALUE we hold dearly.

Safety is about PEOPLE and is not just a set of rules and regulations. MJ Hughes Construction, Inc. employees are a treasured asset and their active participation in safety, with accountability, is absolutely necessary to their and the company's success. *No project evolution is so urgent that we cannot take the time or reasonable expense to follow all the provisions of this safety program.*

This manual establishes the minimum safety standard for *all* MJ Hughes employees. It assigns responsibilities; establishes standard procedures for hazard evaluation, employee and supervisor training, program enforcement, accident investigation and record keeping; and lists the minimum accident prevention requirements for typical operations.

This program is a living document and is amended periodically to keep pace with legal and regulatory changes as well as recognized safe work procedures.

Michael J. Hughes President

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Safety Program

ORGANIZATION AND RESPONSIBILITY

MJ HUGHES MANAGERS

The implementation, maintenance, and enforcement of this program is the ultimate responsibility of all MJ Hughes Construction managers.

SAFETY MANAGERS

Safety Manager's oversee the day-to-day implementation of this program and is tasked with ensuring the following activities are completed:

- 1. Safety orientation of supervisors and employees.
- 2. Organizing emergency plans.
- 3. Establishing medical program requirements and facility locations.
- 4. Organizing and monitoring safety meetings and program specific safety training.
- 5. Inspecting projects and operations to identify and if necessary, initiating corrective actions.
- 6. Assisting in the procurement of safety equipment and materials.
- 7. Coordinating safety responsibilities with other personnel.
- 8. Communicating safety related matters with customers, clients and authorities.
- 9. Assisting supervisors in the investigation of accidents to determine cause and corrective measures.
- 10. Assisting supervisors during regulatory agency inspections and investigations.
- 11. Assisting in the investigation of violations of this program.
- 12. Preparing and maintaining safety records and reports.
- 13. Assisting supervisors in the development or review of a job hazard analysis for
- each major phase of work and for types of operations that have not been analyzed.
- 14. Planning and developing any additional jobsite accident prevention requirements recognized during construction.
- 15. Oversight of all safety programs.

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PROJECT MANAGERS

Each Project Manager is responsible for safe work evolutions and the safety of everyone within their scope of authority including:

- 1. Coaching and counseling supervisors on safe operations.
- 2. Involvement in and enforcement of the provisions of this program and any other rules established for their operation.
- 3. Consideration of the experience and qualifications of personnel in any given assignment and ensure newly hired or promoted supervisors receive a safety orientation before being assigned.
- Ensuring supervisors under their authority are regularly performing safety meetings; jobsite inspections; job hazard analyses; investigating violations of this Program; and administering discipline as necessary within their authority.

PROJECT SUPERINTENDENTS

Each Project Superintendent is responsible for safe work procedures and the safety of everyone within their scope of authority and establish, by example, the highest level of safety performance and accountability. The Project Superintendent's responsibilities include:

- 1. Coaching and counseling subordinates on safe operations including familiarity with this program.
- 2. Being involved in and enforcing the provisions of this program and any other rules established for their particular operation including immediately removing from work and terminating any employee whose behavior is immediately dangerous to life and health, and who, after counseling, refuses to correct that behavior.
- 3. Considering the experience and qualifications of personnel before their assignment and ensuring that newly hired or promoted personnel receive a safety orientation.
- 4. Conducting safety meetings.
- 5. Inspecting work areas and operations and initiating actions to correct unsafe work practices or conditions.
- 6. Reporting, investigating, and documenting accidents.
- Weekly reviewing of jobsite inspection reports and accident investigations prepared by the supervisors under their authority.

- 8. Assisting in the development and review of the job hazard analysis for each major phase of work that has not been analyzed.
- 9. Conducting monthly supervisor safety meetings.
- 10. Maintaining and applying technical knowledge of the safety requirements of all regulatory agencies.
- 11. Advising the project manager, in a timely manner, of project safety activities, unresolved safety problems, and other related issues.
- 12. Be responsible for safety supply kits at the project site.
- 13. Perform a site-specific Job Hazard Analysis (JHA) for each phase and or operation.
- 14. Maintaining site specific Safety Data Sheets, (SDS) ensuring employee familiarity with product safety and SDS location.
- 15. Complying with and overseeing other programs referenced or part of this safety program.

FIELD ENGINEERS

Field Engineers are responsible for safe work procedures and the safety of everyone scope of authority as outlined in this program.

FOREMEN

1. Each foreman is responsible for the safety of everyone working on their crew within the scope of their authority and to assist project superintendents in:

- a. Safety meetings.
- b. Hazard analysis.
- c. Site inspections.
- d. Reporting, investigating and documenting accidents.
- e. Other safety duties as assigned.

CRAFT EMPLOYEES

NOTE: All employees play an integral role in the overall success of any project's safety performance. All employees must learn and comply with all safety and health rules and regulations applicable to their work and the general safety and health of the other workers on the project. While it is a management responsibility to provide a safe place to work, it is also the responsibility of each employee to support management in that effort.

- 1. Every employee is responsible to:
 - a. Follow safety instructions, rules and regulations and if in doubt, stop and seek direction from their supervisor.
 - b. Use proper tools; personal protective equipment and safety devices provided or required in the intended method.
 - c. Report any unsafe conditions or unsafe work practices to their supervisor.
 - d. Report any injury to their supervisor immediately (the day the injury occurs).
 - e. Be familiar with the Code of Safe Work Practices, "Job Safety and You."
 - f. Actively participate in "toolbox" or "tailgate" safety meetings.
 - g. Offer suggestions for improvement of this program.
 - h. Report to work in a condition fit and ready to perform assigned tasks.
 - i. Not perform any operation that has not been planned or when safety is not an integral part of the process.

OFFICE STAFF

1. Office staff are responsible to follow safe work procedures as applicable to an office setting including all applicable safety rules contained in this program.

SUBCONTRACTORS

- 1. Subcontractors will be prequalified by their safety programs and statistics. They will be given a copy of this program and are responsible for providing safe working conditions and safety procedures for their employees including but not limited to:
 - a. Work within the scope of the subcontract must be performed in accordance with all applicable laws and regulations.
 - b. Safely perform all work to the contract specifications.
 - c. Inform the responsible individual at MJ Hughes Construction of any hazardous conditions created by the subcontractors' operations.
 - d. Participate in pre-construction project meetings; safety meetings; and inspections when work within the scope of their subcontract is in progress.
 - e. Prepare and submit to the project superintendent a site-specific Job Hazard Analysis (JHA) for each phase and/or operation.
 - f. Maintain SDS sheets and ensure employee familiarity and location.
 - g. Subcontractors will be reviewed post project for their safety performance.

SHOP PERSONNEL

 Shop personnel are responsible for all applicable sections of this program including yard storage. In addition, the shop manager is responsible for compliance with 49CFR and 29CFR requirements for motor vehicle safety and hazardous materials.

ACCIDENT PREVENTION AND DISCIPLINE POLICY

PROGRAM SCOPE AND APPLICABILITY

- 1. We have adopted this Safety Program to provide accident prevention performance requirements for all operations including construction projects, shops, and office.
 - The requirements of this program apply to all employees in all workplaces. To
 encourage employee compliance with the provisions of this program we adopted
 a discipline policy that will be used to enforce the requirements of the program.

DISCIPLINE POLICY (Reference Employee Handbook)

- 1. Employees who willfully or repeatedly violate this program, safety rules, regulations, procedures or policies will be disciplined.
- 2. Supervisors who allow or direct their subordinates to violate the provisions of this program have committed a serious violation and will be disciplined.
- 3. The following procedures are the minimum disciplinary actions to be followed for all employees. The severity of violation may, however, warrant more severe disciplinary action, such as longer suspension or immediate termination.
 - A First instance -Written warning, with appropriate refresher training (documented) and/or reassignment to a less responsible position.
 - B Second instance -Within one year of the first instance, written warning and suspension, refresher training and/or reassignment to a less responsible position.
 - C Third instance -Within one year of the second instance, termination of employment.

- 4. All serious violations subject to this discipline policy will be thoroughly investigated by the immediate supervisor and/or the Corporate or Division Safety Manager. Upon completion of the investigation the information collected should be discussed with the personnel involved, noted and used as training material.
- 5. After review by a superintendent, disciplinary action will be administered with the approval of the Project Manager in coordination with Safety.

Note: One effective method of maintaining uniformity in this discipline policy is to convene a discipline committee consisting of the Superintendent, Safety and a foreman.

ACCIDENT INVESTIGATION, REPORTING AND RECORDKEEPING

Accidents are unintentional incidents that may or may not result in an injury or property damage. Effective accident prevention depends on the complete investigation of all accidents, even if there is no injury or damage to property (near misses), to identify potentially serious losses. ALL accidents will be investigated by the immediate supervisor of the operation involved. Whenever possible, photographs of the accident scene should be taken as part of the investigation.

INJURY

- 1. All employees will be instructed and <u>required</u> to report all work-related injury or illness to their supervisor immediately.
 - a. The employee *must* fill out the MJ Hughes Employee Accident Report and give it to the supervisor the same day the accident occurs.
- 2. The supervisor of an injured employee *will* investigate the causes, determine corrective measures and submit their MJ Hughes Supervisors Accident Investigation form to the Administrative Office and Safety on the same day the injury occurs.
 - The supervisor of an injured employee *shall* notify the Administrative Office and Safety when it is determined that medical treatment of an injured employee is necessary.

- 3. If the injury occurs in the State of Oregon, the employee must fill out form 801 "Report of Job Injury or Illness" and give it to the supervisor the same day.
- 4. If the injury occurs in the State of Washington, the employee must fill out the required accident report provided at the treating facility.
 - A. All employees are the most valuable asset to our company. Whenever an employee is injured, we provide modified duty wherever possible, working with our Workman's Compensation insurers as well as SAIF in Oregon and LNI in Washington.

SERIOUS INJURY, ILLNESS OR FATALITY

- Any case involving serious injury, illness or death must be immediately reported by telephone followed by hard copy notification to the applicable state OSHA department as required. Either the Administrative Office or applicable Safety Manager is tasked with this responsibility.
- Serious injury or illness, for reporting purposes, includes any injury or illness requires hospitalization more than 24 hours for other than observation, or which results in the loss of any member of the body, or causes any serious degree of permanent disfigurement. If in doubt, call the Administration Office at (360) 314-2024 x 100.
- 3. The scene of any such serious accident should not be disturbed, except for rescue or emergency purposes, until released by a management official. This ensures investigative evidence is undisturbed.

PROPERTY DAMAGE AND OTHER INCIDENTS

Any incident that involves property damage, fire, theft, and bodily injury to other than a company employee, or other loss or potential claim must be reported immediately to Safety and the Administrative Office.

OSHA LOG OF OCCUPATIONAL INJURIES AND ILLNESS

1. The Log of Occupational Injuries and Illness, OSHA Form 300 will be maintained at the Administration Offices. These records will be preserved for five years.



Supervisor's Accident/Injury Investigation

(To be completed by the employee's supervisor or other responsible administrative official)

	tion where accident occurred Location of accident/injury		Date of accident/injury
Who was injured		Employee Non-Employee	Time of accident
Length of time with firm	Job title or occupation	How long has employee worked at job where accident or injury occurred?	
What property/equipment was damaged?			Property/equipment owned by:
What was the employee doing	when injury/illness occurred? What machi	ine of tool was being used? What	type of operation?
How did accident/injury occur	? List all objects and substances involved.		
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in Maria		****	
Part of hody affected/injured?	Any pri	or conditions? If do what?	
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ture and extent of accident/	injury and property damaged (be specific)		
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Employee's Report of Accident/Injury

(To be completed by employee only)

Employee's name:		Male:	Female:	
Last First Middle Date of birth: / / Telephone Number:	()			
Home address:	•			
City:	State:	_Zip Code:		
Present Position:	_Length of emplo	oyment with MJH:		
Location of accident:				
Date of accident:	Time of accid	ent:		
Describe fully how accident occurred: (including events that occurred immediately before the accident):				
Describe bodily in just sustained (be specific about body part (s) affected:				
Recommendation on how to prevent this accident from recurring:				
Name of supervisor:	Phone:			
Name(s) of witness(es):	Phone:			
When did you report accident to your supervisor?				
Who did you report the injury to?				
Do you require medical attention? Yes:	No:	Maybe:		
Signature of employee :		Date:		



Accident/Injury Witness Statement

(To be completed by accident/injury witness only)

Injured employee's name:				
	Last	First	Middle	
Name of witness:				Phone#:
	Last	First	Middle	
Job title of witness:			Length c	of employment with MJH:
Home address of witness:			State:	Zip Code:
Location of accident:		- 10		
Date of accident:Time of accident:				accident:
Describe fully how accident or	curred: (in	ncluding ev	rents that occur	red immediately before the accident):
Describe bodily in just sustained (be specific about body part (s) affected:				
Recommendation on how to prevent this accident from recurring:				
Name of witnesses supervisor:				Phone:
Signature of witness :				Date:

JOBSITE INSPECTIONS AND CORRECTION OF UNSAFE CONDITIONS

Records of the inspections made by supervisors, foremen and safety personnel to identify and correct unsafe conditions and unsafe actions will be maintained at the Administrative Office for one year. (see page 13)

CORRECTING UNSAFE PRACTICES OR CONDITIONS

Unsafe practices or unsafe conditions identified during any inspection will be corrected in a timely manner based on the severity of the hazard. When an imminent hazard cannot be corrected immediately, employees, except those necessary to correct the condition, will be removed from the area of the hazard.

SAFETY TRAINING RECORDS

The records of safety meetings and safety training will be maintained electronically at the main office.

DEFINITIONS

The following definitions are provided to assist the users of this manual in understanding and applying all the provisions of the Accident Prevention Program.

ACCIDENT -the unintentional or unplanned event that has the potential to cause injuries, damage property or result in the loss of otherwise productive time.

AUTHORIZED -directed or approved by a supervisor.

CARELESS – showing the least possible degree of care, interest or concern.

COMPETENT PERSON -one who can identify existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

CONFINED SPACE -a space where access or egress for the removal of a disabled employee is difficult due to the location or size of the openings and existing ventilation is or may become insufficient to remove dangerous air contamination or oxygen deficiency that may exist or develop.

ELECTRICAL GROUNDING SYSTEM -the combination of electrically conductive components installed to provide a path of low resistance between the load on an electrical circuit and the source.

EMPLOYEE -every individual employed by MJ Hughes Construction Incorporated, or any of its wholly owned subsidiaries.

EXCAVATION -a manmade cut, cavity, trench or depression in an earth surface formed by earth removal.

FIXED LADDER -a ladder that cannot be easily moved or carried because it is an integral part of a building or structure.

GROUNDED -connected to the earth or to some conducting body that serves in place of earth.

HAZARDOUS ATMOSPHERE -air that contains less than 19.5 or more than 23.5 percent oxygen, more than 10 percent of the lower explosive limit of a combustible gas or vapor or a concentration of hazardous substances that exceeds the permissible exposure limit.

HAZARDOUS SUBSTANCE -a material that by reason of being explosive, flammable, poisonous, corrosive, oxidizer, irritating or otherwise harmful is likely to cause injury.

JOB HAZARD ANALYSIS -the systematic evaluation of job tasks to identify the potential hazards and appropriate controls necessary to reduce or eliminate the hazards.

NEW EMPLOYEE -an individual with less than 30 days of experience with the company or the job assignment.

QUALIFIED PERSON -one who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems relating to the subject matter, the work, or the project.

REBAR CAPS -manufactured devices that completely cover the exposed ends of reinforcing steel and have flat or mushroomed surface at least twice the diameter of the reinforcing steel they are designed to cover. REBAR COVERS -manufactured or job-built apparatus designed to cover exposed ends of reinforcing steel or other similar projections to prevent impalement.

REBAR TROUGHS-manufactured or job-built protective covers designed to cover exposed ends of reinforcing steel or other similar projections to prevent impalement. Troughs are long narrow open receptacles, usually boxlike in shape.

RECKLESS – lack of proper caution of being careless of the consequences while using uncontrolled speed or force.

SAFETY FACTOR -the ratio of the ultimate breaking strength of a member or piece of material or equipment to the actual working stress or safe load when in use.

STANDARD GUARDRAIL -a barrier consisting of a top rail 42 to 45 inches in height, a mid-rail and toe board secured to uprights spaced at intervals of 8 feet or less.

TRENCH -a narrow excavation made below the surface of the ground. In general, the depth is greater than the width at the bottom, when the width at the bottom is less than 15 feet.

UNSAFE--a condition or action that is likely to cause an adverse event.

ACCIDENT PREVENTION & SAFETY PROVISIONS

ACCESS

- 1. Safe means of access will be provided to all work areas, and all such ramps, stairways, walkways, and aisles will be kept clear of tripping and hazards.
- 2. Access roads shall be maintained in safe and drivable condition.
- 3. Signs and barricades shall be placed as required to protect the public; employees; property; and equipment.
- 4. Outsider access to project sites shall be restricted to need to enter only and a safety briefing shall be conducted with these visitors prior to admittance. This briefing shall be documented and shall become part of the supervisor's daily diary.

AERIAL EQUIPMENT

MEWPS

- 1. All Motorized Elevated Work Platforms (MEWPs) including extendable boom platforms, articulating boom platforms, vehicle mounted aerial ladders and vehicle mounted vertical towers will be used according to the manufacturer's recommendations and only operated by trained personnel. Modifications will not be made to the equipment without the manufacturer's written approval. The boom and basket load limits specified by the manufacturer must not be exceeded.
- 2. Extendable and articulating boom platforms, designed as personnel carriers, must have both upper and lower controls. All controls must be plainly marked to identify their function. The lower controls will be capable of overriding the upper controls.
- 3. The lift controls on extendable and articulating boom platforms will be tested before use each day to determine that they are in safe working condition.
- 4. When working from an aerial lift, employees will wear a body harness and a

lanyard attached to the boom or basket. The lanyard must never be attached to any other structure or equipment while the employee is in the aerial lift.

- 5. Employees must always stand on the floor of the basket and may not sit or climb on the edge or rail of the basket. Planks, ladders or other devices may not be used as a work platform inside an aerial lift basket.
- 6. When outriggers are used, they will be positioned on pads or a solid surface. Wheel chocks will be used when operating an aerial lift on an inclined surface.
- 7. Aerial lifts will not be moved with employees in an elevated basket, unless the aerial lift was specifically designed for that type of operation. Back up alarms are required, or a spotter shall be utilized.
- Aerial lifts will never be operated closer than 10' to power lines and in every case will follow the requirements of OSHA approved operating distance limits near specific live energy of power lines.

CRANE SUSPENDED PERSONNEL PLATFORM

- 1. 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 work location, 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.
- 2. The use of a crane hoisted personnel platform must be approved in writing on a case-by-case basis. The approval must be given, in writing, by the Branch/Project Manager, after determining that other means of reaching the work location would be more hazardous or not possible because of structural design or worksite conditions.
- 3. Approval must include completion of the Permit for Use of a Crane Suspended Personnel Platform, which describes the work to be performed, reasons to justify use of the crane suspended platform and verifies compliance with these procedures.

CRANE REQUIREMENTS

- 1. Load lines must be capable of supporting at least 7 times the maximum intended load (rotation resistant wire rope must support 10 times the maximum intended load).
- The load line hoist drum must have a system or device on the power train, which provides power-controlled load lowering (power up and power down). Lowering may not be controlled using the hoist brake. Free fall is prohibited.
- 3. The crane must be equipped with a positive acting anti-two-block device which deactivates the hoisting or boom extension action before a two-block situation occurs.
- 4. The crane must be equipped with a boom angle indicator readily visible to the operator.
- 5. Cranes with telescoping booms must be equipped with a boom length indicator.
- 6. Total weight of the loaded personnel platform related rigging may not exceed 50 percent of the rated capacity for the operating radius and configuration of the crane.
- 7. The crane must be located on firm ground, leveled within one percent of level grade, with outriggers fully deployed in accordance with manufacturer's specifications.

PERSONNEL PLATFORMS

- 1. The personnel platform and suspension system must be designed by a qualified engineer, competent in structural design.
- 2. The platform must be capable of supporting its own weight and at least five times the maximum intended load.

- 3. The platform must be equipped with standard guardrails (42 inches high), midrails and toe boards (4 inches high) and must be enclosed at least from the toe board to mid-rail with either solid material or expanded metal having openings no greater than ½ inch.
- 4. A grab rail must be installed inside the entire perimeter of the platform.
- 5. Access gates, if installed, must not swing outward and must be equipped with a restraining device or latch to prevent accidental opening.
- 6. The platform must have enough headroom for personnel to stand upright.
- 7. When personnel on the platform may be exposed to falling objects a canopy for overhead protection must be provided.
- 8. The platform must be identified with a plate or other permanent marking which shows the weight of the platform and its rated load capacity.
- 9. Personnel platforms must be used only for personnel, their tools, and the materials necessary to do their work, and must not be used to hoist only materials or tools.
- 10. Materials and tools for use during a personnel lift must be evenly distributed for balance and secured to prevent displacement.

RIGGING

- 1. Wire rope, shackles, rings, master links and other rigging hardware must be capable of supporting at least five times the intended load transmitted to that component. If rotation resistant wire rope slings are used, they must be capable of supporting at least ten times the maximum intended load.
- 2. Each bridle leg of a wire rope bridle must be connected to a master link or shackle in such a manner that the load is evenly divided between the bridle legs.
- 3. The hook on the load block or other attachment assembly must be of a type that can be closed and locked, eliminating the throat opening. Alternatively, an anchor type alloy shackle with a bolt, nut and retaining pin may be used.

- 4. All eyes in wire rope slings must be fabricated with thimbles.
- 5. Bridles and associated attachment rigging must be used only for the personnel platform and must not be used for any other purpose when not hoisting personnel.

TRIAL LIFT, INSPECTION AND PROOF TESTING

- 1. At each worksite, prior to hoisting personnel, and after any repair or modification, the platform and rigging must be proof tested to 125 percent of the platform's rated capacity by holding it in a suspended position for five minutes with the test load evenly distributed on the platform. After proof testing, the platform and rigging must be inspected for signs of any distortion, damage or failure.
- 2. A trial lift, with the unoccupied platform loaded at least to the anticipated lift weight, must be made from the position where workers must enter the platform to each work location at which the platform is to be hoisted. The operator must determine that all systems, controls and safety devices are functioning properly, that there are no obstructions or interferences and that all configurations necessary to reach each work location must keep the lifts within the 50 percent of chart capacity limit.
- 3. The trial lift must be repeated prior to lifting personnel whenever the crane is moved or set up at a different location.
- 4. After the trial lift, and just before hoisting personnel, the platform must be lifted a few inches for inspection to be certain it is secure and properly balanced. The crane, rigging and base support must also be inspected to determine whether the testing and trial lift have produced any adverse effect upon any component.

WORK PRACTICES

1. Personnel occupying the platform must use a safety harness with the lanyard attached to the lower load block or to a structural member within the platform.

- Personnel must keep all parts of the body inside the platform during raising, lowering, and positioning, with the exception of the signal person if necessary for direct visual contact with the operator.
- 3. Tag lines must be used to control the platform unless their use creates an unsafe condition.
- 4. Personnel being hoisted must remain in continuous sight of and in direct communication with the crane operator or signal person.
- 5. The crane operator must always remain at the controls when the crane is running, and the platform is occupied.
- 6. No lifts may be made with any other load line while personnel are suspended on a platform.
- 7. Hoisting personnel must be discontinued upon indication of any hazardous weather conditions, such as wind or lightning.
- 8. Traveling is not permitted while hoisting or suspending an occupied personnel platform.
- 9. Load and boom hoist drum brakes, swing brakes and locking devices must be engaged when the occupied personnel platform is in a stationary working position.

PRE-LIFT MEETING

1. Prior to the trial lift at each work location, a meeting must be held to review these procedures and safety instructions with all personnel involved in the operation. This meeting must include the supervisor, the crane operator, the signal person, the personnel to be hoisted and any others necessary for the task.

PERMIT

- 1. The Permit to use a Crane Suspended Personnel Platform serves as both a checklist of OSHA requirements and a format for management certification and approval for use of the crane suspended personnel platform.
- 2. The permit must be completed for every separate task, prior to hoisting personnel, and kept at the jobsite for the duration of work, then preserved with other job records.

PERMIT TO USE A CRANE SUSPENDED PERSONNEL PLATFORM

Date _____ Time _____ Location _____ Job# _____

A crane suspended personnel platform may only be used if the Branch/Project Manager has determined and certified that conventional means of reaching the worksite, such as personnel hoist, ladder, scaffold, aerial lift or elevating work platform would be more hazardous, or is not possible because of structural design or worksite conditions.

Task description:

Justification for use: ______

Crane Requirements

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Proof tested	125% of rated capacity	Platform/Rigging inspected
Trial lift	_ Platform/Rigging secure &	balanced

Pre-Lift Meeting

Crane Operator ______ Signal Person ______

Workers to be lifted : _____

Supervisor _____

Certification and Approval by Project Manager

I have determined that use of a crane suspended personnel platform is the safest method for performing the stated task or that other conventional methods are not possible because of design or

worksite conditions.

Name

Signature

Date

NOTE: SEE CRANE SECTION FOR CRANE SPECIFICS

BLASTING

- 1. Federal, State and local blasting and explosives permits will be obtained prior to the transportation, handling, storage or use of explosive or blasting agents.
- 2. Federal, State and local regulations relative to the transportation, storage and use of explosives or blasting agents will be followed closely and the required records of inventory and use will be maintained at the jobsite.
- 3. The transportation, storage and use of explosives or blasting agents will always be under the supervision of a blaster qualified and experienced in their intended use and possess the appropriate blaster's permit or license.
- 4. Careful selection of the blasting materials to be used will be made with the manufacturer's assistance, giving primary consideration to such factors as extraneous electrical currents (particularly electrical storms), fire and heat hazards, flying rock hazards, proximity of buildings, storage, transportation and any other loading and firing hazards.
- Magazines will be located in accordance with "American Table of Distances for Storage of Explosives." Accurate and current inventory sheets are to be maintained at each magazine showing every magazine transaction.
- 6. Explosives will only be transported between the magazine and the blast by an approved vehicle specifically assigned for that purpose and equipped with at least two portable fire extinguishers, rated at least 2-A: 10-B: C containing at least 4.5 pounds of extinguishing agent, and not carrying any other material, tools, equipment or personnel, other than a helper.
- 7. The blaster will determine that the danger area is clear of all persons, equipment and excess blasting materials before shooting. The following audible warning signals will be used for all blasting operations.
 - a. WARNING SIGNAL--a one minute series of long signals five minutes before the blast.
 - b. BLASTING SIGNAL--a series of short signals one minute before the blast.

- c. ALL-CLEAR SIGNAL--one long signal after a complete inspection of the blast area.
- 8. After fumes and dust have cleared (at least five minutes for surface blasting, 15 minutes in tunnels) the blaster will thoroughly inspect the blast area for indications of misfires and any other hazardous conditions resulting from the effects of the blast. Only after determining the blast area is safe will the ALL-CLEAR signal be sounded.
- 9. If examination of the blast area reveals any indication of possible unexploded charges, the area will be made safe under the supervision of the blaster by one of the following means, AFTER a 60-minute wait following fuse blasting or a 30 minute wait following all other blasting methods:
 - a. A new primer will be inserted in a hole and the hole re-blasted; or,
 - b. Where the hole cannot be re-blasted, the stemming and explosives be washed out with water.
- 10. After each blast the blaster will complete a record of each blast including date, time, weather conditions, shot pattern, depth of holes, quantity of explosives, number of detonators, misfires if any and any other pertinent information.
- 11. Specific blasting safety procedures will be established for each project to provide safety for all personnel and property, including the public. For assistance or more information on specific requirements, contact the Company Safety Department.

BLOOD-BORNE PATHOGENS

INTRODUCTION

- 1. These procedures are established to provide the necessary precautions for employees to protect themselves from the hazards associated with blood-borne pathogens.
- 2. These procedures apply at all locations where employees may be exposed to blood, other potentially infectious material or medical/first aid supplies that have been contaminated with blood or potentially infectious material.
- 3. Employees with potential for exposure generally fall into one of two categories:
 - a. Employees whose routine job assignments involve exposure to blood or potentially infectious material. This category would include employees whose assigned duties include providing first aid to injured personnel.
 - b. Employees whose routine job assignments do not involve exposure to blood or other potentially infectious material but who may be exposed if performing unusual tasks. This category would include employees who assist in providing first aid assistance to injured personnel.

ENGINEERING CONTROLS

- 1. At work locations where a first aid treatment area has been provided, non-abrasive soap and running water for hand washing should be available in or near the treatment area. If running water cannot be supplied, antiseptic hand cleanser or antiseptic towelettes must be provided.
- 2. An appropriately marked/labeled disposable biohazard container will be utilized for collecting and disposing all first aid supplies and personal protective equipment contaminated during treatment (regulated waste).

WORK PRACTICE CONTROLS

- 1. If called on to render first aid, the employees providing the care must protect themselves from contact with blood or potentially infectious material by using the rubber gloves from the first aid kit.
- 2. If mouth-to-mouth artificial resuscitation is necessary, the employees performing the resuscitation must protect themselves from contact with blood or potentially infectious material by using the mouth barrier device with a one-way valve from the first aid kit.
- 3. If more extensive exposure to blood or potentially infectious material is anticipated, exposed employees will be provided with and required to wear additional personal protective equipment. This additional equipment may include disposable gowns, coats or aprons that will prevent blood or potentially infectious material from contaminating the employees' clothes.
- 4. Before leaving the treatment area, all personal protective equipment (rubber gloves, gowns etc.) must be removed and placed in a biohazard container for disposal.
- 5. After providing care, employees must wash their hands with non-abrasive soap and running water. If hand-washing facilities are not available, employees must wash their hands using antiseptic hand cleanser or antiseptic towelettes. This is a temporary measure, employees must still wash with soap and running water as soon as possible.
- 6. Employees must not eat, drink, smoke, apply cosmetics or lip balms, or handle contact lenses in treatment areas. Food and drinks may not be stored in the treatment areas.

HOUSEKEEPING

- 1. The first aid treatment area, if provided, must be cleaned/disinfected regularly. This cleaning/disinfection must be done according to a written schedule.
- 2. All contaminated items and spill areas must be cleaned with a germicide or a solution of sodium hypochlorite (a 1:8 solution of household bleach and water).
- 3. All first aid supplies and personal protective equipment contaminated during treatment must be collected in an appropriately marked/labeled disposable biohazard container.

4. The disposable biohazard container and its contents will be disposed of daily in accordance with local requirements for this type of regulated waste.

HEPATITIS B VACCINATION

- 1. Employees whose routine job assignments involve exposure to blood or potentially infectious material will be offered the hepatitis B vaccination series, within ten working days of their initial assignment.
- Any other employee who has an exposure incident will also be offered the vaccination series. If the vaccinations are declined, the employee must sign a waiver (see Appendix H) which will be placed in the employee's confidential medical file.
- 3. Those employees, who decline the hepatitis B vaccination, either at the beginning of their assignment or after an exposure incident, may later choose to be vaccinated.

POST EXPOSURE EVALUATION AND FOLLOW-UP

- 1. All employees involved in exposure incidents must be offered a confidential medical evaluation and follow up that includes the following minimum elements:
 - a. Documentation of the route(s) of exposure and the circumstances under which the exposure incident occurred.
 - b. Identification and documentation of the source individual, if feasible and not prohibited by local or state law.
 - c. Testing the source individual's blood, if feasible and after written consent is obtained, to determine HBV and/or HIV infectivity. The results of the source individual's testing will be made available to the exposed employee, and that employee will be informed of the laws and regulations concerning disclosure of the identity and infectious status of the source individual.
 - d. Collecting and testing the exposed employee's blood for HBV and HIV as soon as feasible after written consent is obtained from the exposed employee. If the employee consents to baseline blood collection, but not the HIV testing, the sample must be preserved for 90 days. If, within those 90 days, the employee elects to have the HIV test, such testing will be done as soon as feasible.

- e. Post exposure medical treatment, if indicated, in accordance with the recommendations of the U.S. Public Health Service.
- f. Counseling.
- g. Evaluation of illnesses reported by the exposed employee.
- h. The healthcare professional providing the post exposure hepatitis B vaccination and post exposure evaluation must be provided the following information:
 - (1). A copy of the Blood-borne Pathogen Regulation.
 - (2). A description of the employee's duties as they relate to the exposure incident.
 - (3). Documentation of the routes of exposure and the circumstances under which the exposure occurred.
 - (4). The results of the source individual's blood testing, if available.
 - (5). All medical records relevant and appropriate to the treatment of the employee, including vaccination status, which we are required to maintain.
- 2. The evaluating healthcare professional's written opinion must be obtained and a copy provided to the exposed employee within 15 days after completion of the evaluation.
 - a. The written opinion for hepatitis B vaccination must only include whether vaccination was indicated and whether the employee received one.
 - b. The written opinion for post exposure evaluation and follow-up must only include that the exposed employee has been informed of the results of the evaluation and the employee has been told about any medical condition resulting from exposure that requires further evaluation or treatment.
 - c. All other findings must remain confidential and may not be included in the report.

TRAINING

- 1. Employees who may be exposed to blood or other potentially infectious materials must be trained before exposure and annually thereafter. The training must be conducted by a person knowledgeable in the subject matter. The training must contain the following:
 - a. A copy and an explanation of the blood-borne pathogen regulation.
 - b. A general discussion of blood-borne diseases, with emphasis on symptoms and modes of transmission of HIV and HBV.
 - c. Explanation of these blood-borne pathogens procedures and how employees can get a copy of them.
 - d. Explanation of how to recognize tasks and occupational activities that may involve exposure to blood or potentially infectious material.
 - e. Explanation of the use and limitations of the work practice controls, and universal precautions utilized that will be used to prevent or reduce exposures.
 - f. Information on the selection, types, proper use, location, handling, removal and disposal of contaminated personal protective equipment.
 - g. Information about hepatitis B vaccine, including its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccination will be provided free of charge.
 - h. Explanation of the procedure to follow if there is an exposure incident, including reporting exposure incidents and the medical follow-up that will be provided.
 - i. Information about post-exposure evaluations and follow-up that will be provided to employees who have had an exposure incident.
 - j. Explanation of signs, labels and/or color-coding that will be utilized.
 - An opportunity for asking questions of the person conducting the training.

RECORDKEEPING

- 1. A record of each exposure to blood or potentially infectious material must be created and kept confidential. These records must include:
 - a. The exposed employee's name and social security number.
 - b. A copy of the employee's hepatitis B vaccination status including the dates of all vaccinations and any medical information related to the vaccinations.
 - c. A copy of the results of examinations, medical testing and follow-up procedures.
 - d. A copy of the healthcare professional's written opinion.
 - e. A copy of the information that was provided to the healthcare professional.
- 2. All exposure and medical records must be kept confidential and separate from personnel files, may not be disclosed without the employee's written consent and must be maintained for the duration of the exposed employee's employment plus 30 years.
- 3. Detailed training records maintained for the duration of the exposed employee's employment plus 30 years. These records must include:
 - a. The dates of the training sessions.
 - b. The contents or a summary of the training sessions.
 - c. The name and qualification of the person conducting the training.
 - d. The names, social security numbers and job titles of those who were trained.
- 4. The exposure, medical and training records associated with these blood-borne pathogens procedures will be made available to employees.

DEFINITIONS THAT APPLY TO THIS SUPPLEMENT

BLOOD-BORNE PATHOGENS means pathogenic microorganisms that are present in human blood and can cause disease in humans including, but not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

CONTAMINATED means the presence or the reasonably anticipated presence of blood or other potentially infectious materials on a surface or in or on an item.

EXPOSURE INCIDENT means a specific eye, mouth, other mucous membrane, non-intact skin, or parental contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

OTHER POTENTIALLY INFECTIOUS MATERIALS (OPIM) means the following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any bodily fluid that is visibly contaminated with blood.

PARENTERAL means piercing mucous membranes or the skin through events like needle sticks, human bites, cuts and abrasions.

REGULATED WASTE means liquid or semi-liquid blood or OPIM; contaminated items that would release blood or OPIM in a liquid or semi-liquid state if compressed; items that are caked with dried blood or OPIM and are capable of releasing these materials during handling.
HEPATITIS B VACCINATION WAIVER

WAIVER OF HEPATITIS B VACCINATION

I, ______, understand that due to my potential occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring the hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with the hepatitis B vaccine at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future, I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with the hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Date

Employee

Signature

Date

Witness

Signature

CONFINED and ENCLOSED SPACES

INTRODUCTION

- 1. Confined spaces may present safety or health hazards to employees working within them. It is important that employees and supervisors performing work on, in or around confined spaces understand the potential hazards and follow these safe-operating procedures.
- 2. These procedures establish the minimum safe operating practices for identification of confined spaces, hazard recognition, air testing, ventilation, control and protection of employees who enter confined spaces, employee and supervisor training, use of entry permits, rescue procedures, recordkeeping and program evaluation.

EVALUATION OF WORKPLACE

- 1. Each workplace must be evaluated to determine if there are any confined spaces, how those spaces will be classified and whether employees will be required or allowed to enter them to perform work tasks or assignments.
- 2.. There are several types of confined spaces (see definitions) that are classified by both the type of work being performed where the space exists, and the potential hazards associated with entry into the space. Each enclosed or confined space in a workplace must be classified as one of the following:
 - a. Enclosed Space
 - b. Confined Space (other confined space)
 - c. Non-Permit Confined Space
 - d. Permit-Required Confined Space (permit space)
 - e. If a non-construction workplace contains permit spaces, a sign reading "DANGER PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER" must be installed on or near each permit space to inform employees of the existence, location and hazards posed by the permit spaces.

PRE-ENTRY PROCEDURES

- 1. Any conditions making it unsafe to remove an entrance cover must be eliminated before the cover is removed.
- 2. When entrance covers are removed, the opening must be promptly guarded by a railing, temporary cover or temporary barrier that will prevent an accidental fall through the opening and protect employees working in the space from foreign objects entering the space.
- 3. All lines that may convey dangerous substances into the space will be disconnected, blocked or effectively isolated by blanking or blinding to prevent a hazardous atmosphere from developing. This will be done in a manner that prevents inadvertent re-connection.
- 4. The space will be emptied, flushed, or otherwise purged of dangerous substances, to the extent feasible.
- 5. Mechanical and electrical equipment in the space will be isolated and locked and tagged out in accordance with the lock-out procedure in this manual.
- 6. The air within the space will be tested for a hazardous atmosphere by a qualified person using a calibrated direct-reading instrument, and a written record of such testing will be maintained at the jobsite for the duration of the work.
- 7. A pre-entry checklist must be completed by the entry supervisor. If, after completion of the check list, it is determined that the space is not a permit-required confined space and that all the hazards or potential hazards have been eliminated, the entry supervisor must document the elimination of the hazards, date and sign the check list certifying that the space is not a permit space.

ENTRY PROCEDURES

1. When air testing demonstrates that a hazardous atmosphere does not exist, entry into and work within the construction enclosed space may proceed provided additional air testing is conducted by a qualified person to ensure that oxygen deficiency and dangerous air contamination does not occur.

- 2. Adequate natural or forced mechanical ventilation must be maintained while work is in progress.
- 3. When a non-hazardous atmosphere cannot be ensured or maintained through ventilation, the following procedures will be followed:
 - Respiratory protective equipment for the authorized entrant will be provided and worn in accordance with the Respiratory Protection Program.
 - b. A safety harness that suspends an authorized entrant in an upright position will be used. The harness must be attached to a lifeline with at least a 3,000-pound breaking strength. If an entry is made through a top opening, a hoisting device will be provided to lift the authorized entrants out of the space.
 - c. At least one attendant *per entry area* will stand by outside of the space to give assistance in case of an emergency. At least one additional employee will be within calling distance.
 - d. The attendant will be equipped with a self-contained breathing apparatus.
 - e. Effective communication will be provided between attendants and the authorized entrants inside the space.
 - f. The attendant or at least one other employee trained in CPR must be immediately available whenever respiratory protective equipment is used.
 - g. An attendant may enter the space only after alerting an employee outside the confined space of the attendant's intent to enter the confined space.

NON-PERMIT CONFINED SPACES

- 1. When pre-entry evaluation and atmospheric testing of a non-construction space demonstrate that the only hazard posed by the space is a potential hazardous atmosphere and that continuous forced air ventilation alone is sufficient to maintain that permit space safe for entry, work may be performed without an entry permit.
- 2. The entry supervisor must certify in writing that the space is safe for entry and that pre-entry measures have been taken. The certification must contain the date, the location of the space, and the supervisor's name and signature, must be made before entry and must be made available to employees.
- 3. Entry into the non-permit space under the terms of this subsection must be performed in accordance with the following requirements:
 - a. Continuous forced air ventilation must be used, as follows:
 - (1) An employee may not enter the space until the forced air ventilation has eliminated any hazardous atmosphere.
 - (2) The forced air ventilation must be directed to ventilate the immediate areas where an employee is or will be present within the space and must continue until employees have left the space.
 - (3) The air supply for the forced air ventilation must be from a clean source and may not increase the hazards in the space.
 - The atmosphere within the space must be periodically tested as necessary to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.

- c. If a hazardous atmosphere is detected during entry:
 - (1) Each employee must leave the space immediately.
 - (2) The space must be evaluated to determine how the hazardous atmosphere developed.
 - (3) Measures must be implemented to protect employees from the hazardous atmosphere before any subsequent entry takes place.
- d. When there are changes in the use or configuration of a non-permit confined space that might increase the hazards to entrants, the entry supervisor must reevaluate that space and, if necessary, reclassify it as a permit-required confined space.

PERMIT REQUIRED CONFINED SPACES

- 1. A qualified person must test conditions in the permit space to determine if acceptable entry conditions exist before entry is authorized. If isolation of the space is infeasible because the space is large or is part of a continuous system (such as a sewer), pre-entry testing must be performed before entry is authorized and be continuously monitored in the areas where authorized entrants are working.
- 2. Before entry into a permit-required confined space is authorized, the entry supervisor must prepare an entry permit documenting all the following:
 - a. The date and the authorized duration of the entry permit.
 - b. The permit space to be entered.
 - c. The purpose of the entry.
 - d. The name of the entry supervisor, with a space for his/her signature.
 - e. The names of the authorized entrants.

- f. The names of the attendants.
- g. The hazards of the permit space to be entered.
- h. The acceptable entry conditions.
- i. Any prohibited conditions.
- j. The methods that will be used to isolate the permit space and eliminate or control permit space hazards before entry.

Note: Those methods could include the locking and tagging of equipment and procedures for purging, inerting, ventilating, and flushing permit spaces.

- k. The methods that will be used to provide pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards.
- I. The communication procedures that will be used by authorized entrants and attendants to maintain contact during the entry.
- m. The rescue and emergency services that can be provided on-site, additional services that can be summoned and the means (such as the equipment to use and the numbers to call) for summoning those services.
- n. The equipment, such as personal protective equipment, test equipment, communication equipment, alarms and rescue equipment, required for entry.
- o. Any other information necessary to ensure employee safety.
- p. Any additional permits, such as hot work, should be issued.
- 3. Before entry begins, the entry supervisor identified on the permit must sign the entry permit to authorize entry.

- 4. The completed permit must be made available at the time of entry to all authorized entrants, by posting it at the entry portal or by an equally effective means, so that the entrants can confirm that pre-entry preparations have been completed.
- 5. During entry into a permit space, the permit will be used to document the following:
 - a. That conditions in the permit space are acceptable throughout the entry.
 - b. The results of initial and periodic tests performed accompanied by the names of the testers and by an indication of when the tests were performed.
- 6. The duration of the permit may not exceed the time required to complete the assigned task or job identified on the permit.
- 7. The entry supervisor must terminate entry and cancel the entry permit when either of the following occurs:
 - a. The entry operations covered by the entry permit have been completed.
 - b. A prohibited condition arises in or near the permit space.
- 8. A space classified as a permit-required confined space may be reclassified as a non-permit confined space under the following procedures:
 - a. If the permit space poses no actual or potential atmospheric hazards and if all hazards within the space are eliminated without entry into the space, the permit space may be reclassified as a non-permit confined space for as long as the non-atmospheric hazards remain eliminated.

Note: Control of atmospheric hazards through forced air ventilation does not constitute elimination of the hazards.

- b. If it is necessary to enter the space to eliminate hazards, the entry must be performed under the permit-required space requirements.
- c. The entry supervisor must certify in writing the basis for determining that all hazards in a permit space have been eliminated. The certification must contain the date, the location of the space, and the signature of the entry supervisor and must be available to each employee entering the space.
- d. If hazards arise within a permit space that has been declassified to a non-permit space, each employee in the space must exit the space. The entry supervisor must then reevaluate the space and determine whether it must be reclassified as a permit space, in accordance with other applicable provisions of this section.

PROCEDURES FOR ATMOSPHERIC TESTING

NOTE: Atmospheric testing is required to evaluate the hazards of a permit space and verify that acceptable conditions for entry into that space exist. Individuals may request additional monitoring at any time.

- 1. The atmosphere of a confined space should be analyzed using equipment of sufficient sensitivity to identify and evaluate hazardous atmospheres that may exist or arise, so that appropriate permit entry procedures and acceptable entry conditions can be developed. Evaluation and interpretation of the tests, and development of entry procedures, should be done by, or reviewed by, a qualified professional based on evaluation of all hazards.
- 2. A permit space that may contain a hazardous atmosphere should be tested for residues of all contaminants identified by evaluation testing using permit specified equipment to determine that residual concentrations at the time of testing and entry are within the range of acceptable entry conditions. Results of testing (i.e., actual concentration, etc.) should be recorded on the permit in the space provided.
- 3. Measurement of values for each atmospheric parameter should be made for at least the minimum response time of the test instrument specified by the manufacturer.

- 4. When monitoring for entries involving a descent into atmospheres that may be stratified, the atmospheric envelope should be tested a distance of approximately 4 feet (1.22 m) in the direction of travel and to each side. If a sampling probe is used, the entrant's rate of progress should be slowed to accommodate the sampling speed and detector response.
- 5. A test for oxygen is performed first because most combustible gas meters are oxygen dependent and will not provide reliable readings in an oxygen deficient atmosphere. Combustible gases are tested for next because the threat of fire or explosion is both more immediate and more life threatening, in most cases, than exposure to toxic gases and vapors. If tests for toxic gases and vapors are necessary, they are performed last.
- 6. The atmosphere within the space must be periodically tested to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.
- 7. If a hazardous atmosphere is detected during entry:
 - a. Each employee must leave the space immediately.
 - b. The space must be evaluated to determine how the hazardous atmosphere developed.
 - c. Measures must be implemented to protect employees from the hazardous atmosphere before any subsequent entry takes place.

VENTILATION

Continuous forced air ventilation must be used, as follows:

- 1. An employee may not enter the space until the forced air ventilation has eliminated any hazardous atmosphere.
- 2. The forced air ventilation must be so directed as to ventilate the immediate areas where an employee is or will be present within the space and must continue until all employees have left the space.

3. The air supply for the forced air ventilation must be from a clean source and may not increase the hazards in the space.

EMPLOYEE AND SUPERVISOR TRAINING

- 1. All affected employees will be provided with a copy of these operating procedures and trained before being assigned to work on, around or in enclosed or confined spaces.
- 2. The training must provide employees with the understanding, knowledge, and skills necessary to safely perform their assigned duties.
- 3. Training will include at least the following information:
 - a. The hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of exposure.
 - b. The possible symptoms and behavioral effects of exposure.
 - c. The method that will be used to identify and maintain an accurate count of the authorized entrants in the permit space.
 - d. The proper use of the equipment associated with confined spaces including:
 - (1) Testing and monitoring equipment.
 - (2) Ventilation equipment.
 - (3) Communication equipment.
 - (4) Personal protective equipment.
 - (5) Illumination equipment.
 - (6) Barriers and shields necessary to protect entrants from external hazards.

- (7) Ladders and other safe access and egress equipment.
- (8) Rescue and emergency equipment.
- (9) Any other equipment necessary for safe confined space entry.
- e. How entrants and attendants should communicate to monitor each other's status and to enable them to alert each other of the need to evacuate the space.
- f. The duties and responsibilities of authorized entrants including:
 - (1) The use of a chest or full body harness, with a retrieval line attached.
 - (2) The use of a retrieval system whenever an authorized entrant enters a permit space, unless the retrieval equipment would increase the risk associated with an entry or rescue.
 - (3) Alerting the attendant whenever the authorized entrant recognizes any warning sign or symptom of exposure to a dangerous situation or detects an unsafe or prohibited condition.
 - (4) Exiting the permit space as quickly as possible whenever:
 - (a) The attendant or the entry supervisor orders an evacuation.
 - (b) They recognize any symptom or behavioral effect of exposure.
 - (c) They detect an unsafe or prohibited condition.
 - (d) An evacuation alarm is activated.
- g. The duties and responsibilities of attendants including:

- (1) The method an attendant must use to monitor the activities inside and outside the space to ensure it is safe for entrants to remain in the space.
- (2) Ordering the authorized entrants to evacuate the permit space immediately under any of the following conditions:
 - (a) The attendant detects an unsafe or prohibited condition.
 - (b) The attendant detects the symptoms or behavioral effects of hazard exposure in an entrant.
 - (c) The attendant detects a situation outside the space that endangers an entrant.
 - (d) The attendant cannot effectively and safely perform his/her duties.
- (3) Remaining outside the permit space during entry operations until relieved by another attendant.
- (4) The actions an attendant must take if an unauthorized person approaches or enters a permit space while entry is under way including:
 - (a) Warning the unauthorized person to stay away from the space.
 - (b) Telling the unauthorized person that he/she must exit immediately if he/she has entered the permit space.
 - (c) Telling the authorized entrants and the entry supervisor that an unauthorized person has entered the permit space.
- (5) Initiating on-site rescue procedures and, if necessary, summoning additional rescue and emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards.

- (6) Not performing any duties that interfere with their duty to monitor and protect the authorized entrants.
- h. The duties and responsibilities of entry supervisors including:
 - (1) Verifying, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.
 - (2) Terminating the entry and canceling the permit if the operations covered by the permit are completed or a condition not allowed by the permit occurs.
 - (3) Verifying that rescue services are available and that the means for summoning additional services are operable.
 - (4) Removing unauthorized individuals who enter or who attempt to enter the permit space during entry operations.
 - (5) Determining, whenever responsibility for a permit space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space that entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained.
- i. The duties and responsibilities of rescue team members including:
 - (1) The duties of authorized entrants.
 - (2) How to perform their assigned rescue duties.
 - (3) Performing first aid and cardiopulmonary resuscitation (CPR).

- Understanding the proper use of the personal protective equipment and rescue equipment necessary for making rescues from permit spaces.
- 4. Training must be repeated whenever:
 - a. There is a change in an employee's assigned duties.
 - b. There is a change in permit space operations that presents a hazard about which an employee has not been trained.
 - c. There are deviations from the permit space entry procedures.
 - d. We believe that any affected employee who has already been trained does not have the understanding and skill required in the training section listed above.
- 5. Rescue team members must practice making permit space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, manikins, or persons from the actual permit spaces or from representative permit spaces.
- 6. A written training certification record, containing the name of the employee trained, the name of the person who conducted the training, the signature of the person who conducted the training and the date training was completed, must be maintained.

RESCUE PROCEDURES

- 1. Each operation must develop and implement procedures for summoning rescue and emergency services, for rescuing entrants from permit spaces, for providing necessary emergency services to rescued employees, and for preventing unauthorized personnel from attempting a rescue.
- 2. The entry supervisor must ensure that at least one standby person at the site is trained and immediately available to perform rescue and emergency services.

- 3. The following requirements apply when employees enter permit spaces to perform rescue services.
 - a. The entry supervisor must ensure that each member of the rescue service is provided with, and is trained to use properly, the personal protective equipment and rescue equipment necessary for making rescues from permit spaces.
 - Each member of the rescue service must be trained to perform the assigned rescue duties. Each member of the rescue service must also receive the training required of authorized entrants.
 - c. If arrangements are made to have persons other than MJ Hughes employees perform permit space rescue, we must:
 - (1) Inform the rescue service of the hazards they may confront when called on to perform rescue at our project.
 - (2) Provide the rescue service with access to all permit spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and practice rescue operations.
- 4. To facilitate non-entry rescue, retrieval systems or methods must be used whenever an authorized entrant enters a permit space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. Retrieval systems must meet the following requirements:
 - a. Each authorized entrant must use a chest or full body harness, with a retrieval line attached at a suitable point so that when rescued, the entrant presents the smallest possible profile (for example at the center of the entrant's back near shoulder level, or above the entrant's head). Wristlets may be used in lieu of the chest or full body harness if the entry supervisor can document that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.

- b. The other end of the retrieval line must be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device must be available to retrieve personnel from vertical type permit spaces more than 5 feet deep.
- 5. If an injured entrant has been exposed to a substance for which a Safety Data Sheet (SDS) or other similar written information is required to be kept at the work site, that SDS or written information must be made available to the medical facility treating the exposed entrant.

SUBCONTRACTORS

If we arrange to have employees of another employer (subcontractor) perform work that involves permit space entry, we must:

- 1. Inform the subcontractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with a written space program meeting the OSHA requirements.
 - a. Tell the subcontractor of the elements, including the hazards identified and our experience with the space, that make the space in question a permit space.
 - Tell the subcontractor of any precautions or procedures that we have implemented for the protection of employees in or near permit spaces where subcontractor personnel will be working.
 - c. Coordinate entry operations with the subcontractor when both our employees and subcontractor employees will be working in or near permit spaces.
 - d. Debrief the subcontractor at the conclusion of the entry operations regarding the space program followed and regarding any hazards confronted or created in permit spaces during entry operations.
- 2. In addition to complying with its own written permit confined space entry program, each subcontractor who is retained to perform permit space entry operations must:

- a. Obtain any available information regarding permit hazards and entry operations from us.
- b. Coordinate entry operations with us, when both our employees and subcontractor employees will be working in or near permit spaces.
- c. Inform us of the permit space program that the subcontractor will follow and of any hazards confronted or created in permit spaces before the entry operation.

PROGRAM EVALUATION

- 1. Each canceled entry permit must be retained for at least 1 year to facilitate the review of this program. Any problems encountered during an entry operation must be noted on the pertinent permit so that appropriate revisions to the permit space program can be made.
- 2. Review of entry operations must be performed when there is reason to believe that the measures taken under the permit space program may not protect employees. The program must be revised to correct deficiencies found to exist before subsequent entries are authorized.

Note: An operation may perform a single annual review covering all entries performed during a 12-month period. If no entry is performed during a 12-month period, no review is necessary.

DEFINITIONS

Acceptable Entry Conditions means the conditions that must exist in a permit space to allow entry and to ensure that employees involved with a permit-required confined space entry can safely enter into and work within the space.

Attendant means an individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant duties assigned in the permit space program.

Authorized Entrant means an individual who has been authorized to enter a permit space.

Blanking or Blinding means the absolute closure of a pipe or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and can withstand the maximum pressure of the pipe or duct with no leakage beyond the plate.

Competent Person means one who can identify existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Confined Space means a space that has all the following:

Is large enough and so configured that an employee can enter and perform assigned work, has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits). Is not designed for continuous employee occupancy.

Construction Confined Space (other confined space) means an enclosed space in a construction workplace where existing ventilation is insufficient to remove dangerous air contamination or oxygen deficiency that may exist or develop.

Construction Workplace means a place where employment exists in connection with the construction, alteration, painting, repairing, construction maintenance, renovation, removal, or wrecking of any fixed structure or its parts. The term construction workplace does not include bins, bunkers, hoppers, silos or mixer drums associated with aggregate, asphalt or ready mix plants.

Emergency means any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit space that could endanger entrants.

Enclosed Space means a space in a construction workplace where access or egress for the removal of a disabled employee is difficult due to the location or size of the openings.

Engulfment means the surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

Entry means the action by which a person passes through an opening into a permit-required confined space. Entry includes work activities in the space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

Entry Permit (permit) means the written document that is provided by the entry supervisor to allow and control entry into a permit space and that contains the information specified in the confined space operating procedure.

Entry Supervisor means the person (such as the foreman or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry.

Hazardous Atmosphere means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

Flammable gas or vapor more than 10 percent of its lower flammable limit (LFL). Airborne combustible dust at a concentration that meets or exceeds its LFL.

Note: A concentration of combustible dust obscures vision at a distance of 5 feet less. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent. Atmospheric concentration of any substance that could result in employee exposure more than its dose or permissible exposure limit. Any other atmospheric condition that is immediately dangerous to life or health.

Note: For air contaminants where a dose or permissible exposure limit is not published in the applicable regulations, other sources of information such as: Safety Data Sheets, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

Hot Work Permit means the written authorization to perform operations (for example riveting, welding, cutting, burning, and heating) capable of providing a source of ignition.

Immediately Dangerous to Life or Health (IDLH) means any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space.

Inerting means the displacement of the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.

Note: This inerting produces an IDLH oxygen-deficient atmosphere.

Isolated means the process by which a permit space is removed from service and completely protected against the release of energy and material into the space by such means as: blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lock-out or tag-out of all sources of energy; or blocking or disconnecting all mechanical linkages.

Non-Permit Confined Space (non-permit space) means a confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

Oxygen Deficient Atmosphere means an atmosphere containing less than 19.5 % oxygen by volume.

Oxygen Enriched Atmosphere means an atmosphere containing more than 23.5% oxygen by volume.

Permit-Required Confined Space (permit space) means a confined space that has one or more of the following characteristics:

- a. Contains or has the potential to contain a hazardous atmosphere.
- b. Contains material that has the potential for engulfing an entrant.
- c. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section.
- d. Contains any other recognized serious safety or health hazard.

Permit-Required Confined Space Program (permit space program) means the overall program for controlling and, where appropriate, for protecting employees from permit space hazards and for regulating employee entry into permit spaces.

Prohibited Condition means any condition in a permit space that is not allowed by the permit during the period when entry is authorized.

Qualified Person means one who, by possession of a recognized degree, certificate, or professional standing, extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.

Rescue Service means the personnel designated to rescue employees from permit spaces.

Retrieval System means the equipment (including a retrieval line, chest or full-body harness, wristlets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.

Testing means the process by which the atmospheric hazards that may confront entrants of a permit space are identified and evaluated.

CONFINED SPACE PRE-ENTRY CHECKLIST

Work Location	_Job Number	Date	Time_	
Supervisor's Printed Name		Work to Be Performed		

1. Is this a construction workplace (as defined)? _____ If yes go to 2. If no go to 4.

2. Does space have limited access and a dangerous atmosphere? _____ If yes go to 3. If no this is not a construction confined space. Sign certification below and go to work.

3. Space may only be entered following the Construction Confined Space requirements.

4. Does space have all the following conditions?

It is large enough and so configured that an employee can enter and perform assigned work. It has limited or restricted means for entry or exit.

It is not designed for continuous employee occupancy. _____ If yes go to 5. If no this is not a confined space.

Sign certification below and go to work.

5. Does the confined space have one or more of the following characteristics?

It contains or has the potential to contain a hazardous atmosphere.

It contains a material that has the potential for engulfing an entrant.

It has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section.

It contains any other recognized serious safety or health hazard. _____ If yes go to 6. If no this is not a permit-required confined space. Sign certification below and go to work.

6. Will employees enter the space? _____ If yes go to 7. If not, post signs and prevent entry.

7. Are lines that may convey dangerous substances disconnected or blocked to prevent a hazardous atmosphere? _____ If yes go to 8. If not go to 15.

8. Has the space been emptied, flushed or purged of dangerous substances? _____ If yes go to 9. If not go to 15.

9. Does space have ventilation that will prevent a hazardous atmosphere? _____ If yes go to 10. If not go to 15.

10. Has the air in the space been tested for oxygen concentration, combustibility and toxicity by a qualified person? _____ If yes go to 11. If not, test air before continuing.

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11. Is oxygen concentration between 19.5% and 23.5%? If yes go to 12. If not go to 15.
12. Is combustible gas, vapor and mist <10 LEL? If yes go to 13. If not go to 15.
13. Is toxic substance concentration < PEL? If yes go to 14. If not go to 15.
14. Are space hazards eliminated? If yes this is not a permit-required confined space. If not go to.
15. THE SPACE MAY ONLY BE ENTERED USING AN ENTRY PERMIT.
I certify this space is not a construction confined space and is safe to work in I certify this space is not a confined space and is safe to work in I certify this space is not a permit required confined space and is safe to work in
I have determined that this space is a permit-required confined space and work in this space must be conducted using an entry permit
CONFINED SPACE ENTRY PERMIT
Date: Length of Entry Permit Not Valid for More than 8 Hours Space location and description
Purpose of entry
Entry Supervisor(s) Type of Crew
Authorized Entrant(s) Employee # Attendant(s) Employee #
Permit Space Hazards: Y / N Acceptable Entry Conditions: Y / N
Oxygen Deficiency <19.5% Pre-Entry Checks Complete Oxygen Enrichment >23.5% Secure Area (Post and Flag) Flammable Gases or Vapors Lines Disconnected/Blocked Airborne Combustible Dust Purge/Flush/Vent Toxic Gases or Vapors Ventilation Engulfment Hazards Lighting (Explosive Proof) Converging Walls Breathing Apparatus Sloped Floors Emergency Retrieval Equip Mechanical Hazards Full Body Harness
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Electrical Hazards _____ Protective Clothing _____ Other ____ Hot Work Permit _____

N/A for items that do not apply. N/A for items that do not apply.

Prohibited conditions

Methods used to isolate the space

Methods used to eliminate or control hazards before entry

Methods used to protect entrants from external hazards

Communication procedures

Rescue and emergency services on-site

Additional rescue services and the means for summoning them

Equipment required for entry

Air Tester's Name ______ Air Test Instrument(s) Used

Date Instrument(s) Last Calibrated ______ Instrument(s) Checked Against a Known Gas

Continuous Monitoring Acceptable Record Monitoring Results At Least Every 2 Hours

Test(s) to be Taken Entry Levels _____

Percent of Oxygen 19.5% to 23.5% _____

Lower Flammable Limit < 10% _____

Carbon Monoxide < 35 ppm _____

Aromatic Hydrocarbon < 1 ppm*, 5 ppm‡ _____

Hydrogen Cyanide < 4.7 ppm‡ S ______

Hydrogen sulfide < 1 ppm*, 15 ppm‡ ______ Sulfur Dioxide < 2 ppm*, 5 ppm‡ _____

Ammonia < 25 ppm*, 35 ppm‡ _____

Other

* 8 hour Time Weighted Average: Employee can work 8 hours. ‡ Short-term exposure limit: Employee can work up to 15 minutes.

Remarks: _____

Entry Supervisor's Signature Authorizing Entry _____

CRANES AND HOISTING EQUIPMENT

- 1. Cranes and hoists, exceeding 3 tons rated capacity, will not be used without a current annual certificate of examination issued by an accredited crane examiner.
- 2. Only qualified and authorized personnel will operate cranes or hoisting equipment. Operators will pass a physical examination every two years, as set forth in Section III. B of this program.

Note: The qualifications of crane operators must be evaluated in accordance with the requirements of the company's Policy on the Qualification of Mobile Crane Operators.

- 3. Crane's will be assembled and disassembled by a competent person according to the manufacturer's requirements and prohibitions. No modifications or additions may be made without written permission of the manufacturer.
- 4. Operators will make a visual inspection of their equipment before its first operation on any work shift and a monthly maintenance inspection. All safety devices and operational placards must be operational before any use. A record of these inspections will be maintained on the crane in the "Crane Inspection and Maintenance Log."
- 4. A qualified person will conduct a periodic inspection and wire rope inspection at least every 3 months or 750 operating hours, whichever comes first, and before the crane is returned to service after a month or more of inactivity.
- 5. All cranes will be equipped with an appropriate fire extinguisher or fire suppression system. These fire extinguishers should be rated at least 2-A: 10-B:C and contain at least 4.5 pounds of extinguishing agent.
- 6. Loads will be attached to the hook by slings or other suitable rigging to insure the safe handling of the load. Tag lines shall be used to control the load.
- A signaler (only one) using uniform hand signals will be used to direct the operator when the point of operation is not in direct view of the operator, unless a radio or other positive means of communications is used.

- 8. The operator will respond to signals from only one person. The operator will not follow any signal that is not understood but must always obey a stop signal.
- 9. The operator will be responsible for the operations under his direct control and operations shall be according to the manufacturer's specifications. Whenever there are doubts about the safety of a movement, the operator will stop operations until it is safe to continue.
- 10. A warning signal, such as a horn, will be sounded to alert personnel to proximity of moving loads. Loads should not be passed over personnel, and personnel should not be permitted to work in the area directly under a suspended load.
- 11. Cranes will not be left unattended with or used to store a suspended load.
- 12. Rotating cranes will be barricaded, or other positive means will be taken to prevent personnel from entering the area between the rotating machine deck, and any stationary machine parts or outside obstructions.
- 13. Cranes equipped with outriggers must be operated with the outriggers extended in accordance with the terms of the load chart for the crane. Ground conditions must be capable of supporting the machine and load according to the manufacturer's specifications.
- 14. Cranes will not be operated, or loads handled in such a manner that any machine part or load will come within ten feet of electrical lines carrying up to 50,000 volts. Greater distances are required for voltages over 50,000. A spotter will be used whenever a crane is used within one boom length of any overhead power line.
- 15. No person will be permitted to ride on loads, slings, hooks, buckets or other such load handling attachments. Hoisting of personnel will only be done in accordance with the Program Supplement: Crane Suspended Personnel Platform Procedure.

(CRANE C	PERAT	OR DAIL	Y INSPECTION CH	ECKLIS	Т		
Crane name/number	Crane type:		Crane capacity		Date of inspection:			
Location: Hour Meter: Start: Stop:			Total hours operated:					
Operator's name:				Oiler's name:				
INSTRUCTIONS: Check	all itoms	indicate	d Insner	t and indicate as sa	tisfactor	v = S U n	satisfact	torv = U
or not applicable = N/A	un norris	maiouto	a. mopor		lioraotor.	, 0, 0,	outoruot	,
Walk around	U	S	N/A	Operator Cab		U	S	N/A
inspection				Inspection				
Safety guards and				Gauges				
plates								
Carrier frame, rotate				Warning & indicat	or			
base				lights				
General hardware				Control/brakes				
Wire rope				Visibility				
Reeving				Load rating charts				- R
Block				Safety devices				
Hook			1	Emergency stops				
Sheeves				List/trim indicators				
Boom/lib				Boom Angle/Radi	IS			
				Indicator				
Gantry, pendants, boom stops				Machinery House Inspection	Ð	U	S	N/A
Walks, ladders, handrails				Housekeeping				
Wind locks, chocks, stops				Engine/Compress	or			
Tires, wheels, tracks				Leaks - Fuel, lube Water	, Oil,			
Leaks-Fuel, oil, lube, water	-			Lubrication				
Radius indicator				Battery				
Outrigger/locking device				Lights				
Operation Inspection	υ	S	N/A	Glass				
Area safety			1	Clutch/Brake lining	qs			
Unusual noises			1	Electric motors	<u> </u>			
Control Action			-	Warning tags				
Brakes/boom/load/				Fire extinguisher				
rotate				The extinguisher				
Crane stability				Comments:				
No load test								
Fleeting sheeve				1				
Limit switches								
Operator's signature:				Supervisor's signa	ature:			

This checklist is based on EM 385-1-1, dated 3 September 1996. Use of this checklist is optional.

Project Name:		Project Location:					
Inspected by:	Date:	Manufacturer:					
Equipment #:		Serial #:					

CRANE INSPECTION

 HOOK: Throat opening more than 15%. Hook in twisted (not straight or on one plane). More than 10% wear at the throat. Any cracks or corrosion 	Yes	No
 WEDGE SOCKETS: 1. Wire rope size and wedge socket is a proper match. 2. Dead end of wire rope extends at least 9 inches beyond wedge socket. 3. Dead end of the wire rope is secured properly. 		
 SHEAVES: The wire rope is seated properly in the sheaves. The wire rope keepers (keeps cable from coming out of the sheaves) are in good shape. Check the bolts on the sheave plates fortightness. Check for any weld cracks. Signs of bent or buckled panels or parts. 		
 BOOM: Hydraulic leaks. Check all 4 sides of boom for bent parts or buckled panels. Lattice boom extension is secured properly. Lattice sections are not bent (each rib is straight). 		
 TIRES: Properly inflated (look on load charts for Manufacturing recommendations) Cuts in the tires or bulges. 		-
 FLUIDS: 1. Crank case oil is clean and full. 2. Water is about 2 inches below cap. 3. Check hydraulic oil level. 		
 MISCELLANEOUS: Out rigger pads not cracked. Hydraulic hoses in good condition. The drum cable is properly spooled. 		

Crane Inspection Checklist

4.	Handrails leading into crane cab are good.		-
5.	Fire extinguisher is available.		_
6.	Load chart is in cab.		_
7.	Boom angle indicator is available and working.		
8.	Back alarm is working.	<u></u>	
9.	Engine is started and gauges are checked, working properly.		-
10.	Out riggers are extended out; working properly.		
11.	Crane is leveled, workin gproperly.		
12.	Boom up, unlock the swing break, does it swing when level?		-
13.	Swing through 360 degrees, does boom angle indicator stay the same		
thro	bughout rotation.		
14.	Does the horn work.		
15.	Does boom swing break work properly?		
16.	Extend out the boom, are all sections extending evenly.		2000 C
17	Brakes & brake systems check out.		
18	Safety pressure relief valves check out.		
10.	Surory hispars renter that so surger sun		-

Comments:



ph 360-314-2024 fax 360-828-5871

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Crane Lift Plan

Instructions

- 1. The Crane Use Planning Process has two parts:
 - ✓ Crane Lift Plan
 - ✓ Crane Daily Safety Review
- 2. A Crane Lift Plan is required for any crane lift on a MJ Hughes project.
- 3. Lifts exceeding 75% of the cranes stability / structural capacity chart, requiring movement of a crane carriage with the load, personnel platforms, sensitive loads (long lead time, cost), loads requiring two (or more) hooks, work over occupied facilities or work involving encroachment on public rights of way are considered critical. These lifts must be authorized in advance. Critical crane lift plans, if authorized, may have to be reviewed by a professional engineer (the contractor shall budget the PE review within project budget). Additionally, a critical lift JHA shall be submitted with the crane Plans must be submitted at least 48 hours (2 business days) prior to mobilization 5 days for critical lifts.
- 5. Crane Lift Plans must be based on "worst case" combination of load weight with chart deductions and lift radius for a specific crane configuration in a specific location.
- 6. The Crane Lift Plan may be valid for more than one day, as long as the configuration, location, maximum expected load, and maximum expected radius does *not* change. Use multiple lift plans for multiple locations.
- 7. The Crane Lift Plan must be COMPLETE along with attachments see Section 5 for the required Attachments.
- All rigging devices MUST bear the name of the manufacturer and be certified as to their capacity. Custom-fabricated devices (lifting beams, spreader bars, etc) may be acceptable with proper PE stamp or proof testing as required by applicable standards. Capacities shall be marked and legible on all such devices.
- 9. Work that is not anticipated in the Crane Lift Plan, but may arise due to site conditions (moving equipment, loading materials onto floors, etc) must be reviewed with MJ Hughes project manager prior to hoisting. Changes affecting crane configuration and / or location may require the Crane Lift Plan to be amended.
- 10. The site must be visited prior to the lift date to review documentary information pertaining to the site. The adequacy, supply and installation of all supporting material (as defined within 29 CFR 1926.1402) necessary for the crane lift must be included in the plan.
- 11. A power line safety plan must be provided.
- 12. All personnel involved in the Assembly / Disassembly and or Crane Lift must be trained and competent for the work.
- 13. The following information must be included along with the Crane Lift Plan:
 - Competent / Qualified Person Designation Forms for A/D Director, Operator, Rigger, Signal Person
 - Load Chart (complete with notes)
 - □ Range Chart
 - Dimension Illustration and Specifications for Crane
 - Lightning and Wind Restrictions (from operators manual)
 - □ Area (Quadrant) of Operation Diagram
 - Operators License, Operators Training Information, USDOT Medical Certification, OSHA 10/30 Hour Course Completion Cards, as may be required by the project.
 - □ Jurisdictional Registration, if required
 - □ JHA for Assembly / Disassembly of Crane, Severe Weather, Truck Load / Unload, Etc.
 - □ JHA for Power Line Encroachment
 - 3rd Party Inspection Certification and Report see Crane Lift Plan for requirements (Note: The inspector shall be certified with the CCAA).
 - Weights of Materials
 - Rigging Plan
 - □ Logistics Plan
- 14. The Site Specific Safety & Loss Control Program must be available and followed.
- 15. The crane operator and rigger are responsible for the accuracy of plan and inspections.

Date of Lift: Project Name: Lift Location:										
Company Nam	ne:									
'erson Respor	sible for Plan /	Contact in	fo:							
Name of Rigge	r / Signal Perso									
Crane Compar	v Name:				Rigg	ging C	ompany	Name:		
Person Respor	sible for Plan /	Contact In	fo:		Pers	son Re	esponsibl	e for Pla	n / Contact	Info:
Name of Opera	ator:				Nan	ne of I	Rigger:			
Name of Asser	nbly Disassemb	ly Director	:							
(Note: A Comp	etent / Qualifie	d Person D	Designa	ition Form must be su	ubmitt	ted fo	r each A/	D Direct	or, Operato	r, Rigger, or Signal
1. Crane Info	rmation		8.0							
Make:			Mod	lel:				S/N:		
Date of Manuf	acturer:				:	Size (O	Capacity i	in Tons):		
Type			riction		л	T	ruck		Rough Terra	ain 🗆 Crawler
Has the crane longer than 3 I	been idle for Months	C YE ce	S (Note rtificat	e: A new annual 3 rd pa ion and report must b	arty in De pro	spect	ion)		O (Note: Property inspec	ovide a copy of annual 3 rd ction certification report)
Length of Mair	n Boom?			Jib Used?	□ No □ Yes Length:			Length		Offset:
Load Line # of	Parts:			Line Pull:		Lbs. Block Capacity:				
Max working r Max working r plus ½ length	adius of boom i adius of boom of load) in feet:	n feet:			Max Vertical Boom Elevation (including erected jib) in feet:					
Will Max work within 20' of a	ing radius of bo n Overhead Pov	om (includ ver Line?	ling ½ l	ength of load) be	Will Max Vertical Boom Elevation exceed 200' above Existing Site Elevation?					
lf yes, Provide Voltage:	Power Line	lf O Hi S	yes, At utlinin azard v ee Sub	ttach a JHA g How Contact vill be Mitigated – part CC.	If yes, Provide FAA Permit No. (attach a copy of the permit to the Crane Lift Plan):					
Will Crane Rec Site?	uire Assembly (Dn- H Co	ow wil onfigur	l Outriggers be red?	 Fully Extended Intermediate and Pinned Fully Retracted 					
If yes, Provide and JHA Outlir	Manufacturers ning How this Ac	Assembly , tivity will b	/ Disas be Perf	sembly Instructions, ormed. (Note: A	 Provide a copy of Crane Dimensions and Area (Quadrant) of Operation Diagram 					
new annual 3 rd provided post was included i	^a party inspectic A/D) Exception: n the current ar	n certifica hydraulic nual 3 rd pa	tion an crane arty ins	id report must be with stowed jib that spection.	What is Max Imposed Operating ground Pressure of Crane and Load in PSI with Cribbing (minimum of 3 times float area)?					
Will this Activi	ty Involve a Mu	ti-Crane Li	ift and	/ or "Walking" a Load	l? If ye	es, Exp	olain*:			
Will any load b	e Tripped? If sc	, explain V	VHY an	d HOW (multi-crane,	multi	-drum	ı, lift / cri	b / lift, e	tc)*:	
*See items 3 of Crane Lift Plan Instructions for critical lift requirements.										
Lift Summary						NIC IS		11 - E E .		
Max Radius of	Boom Min I	300m Angl	e	Gross Deductions		Char	rt Capacii	ty	% of Capac Gross Deduct	ity ions / Chart Capacity
2. Load Chara	acteristics	nultiple pig	cks?				ni si			
	in plan cover i	indicipie pit								

Description of load(s):

Maximum Load Characteristics (Provide information on both the HEAVIEST and the LARGEST volume load):

Weight of Max Load (Provide manufacturers product data sheets and / or calculations):

Location of load Center of Gravity (Provide manufactures product data sheet and / or a sketch):

How will the Load Center of Gravity be determined:

Will any load be upended? If so, provide stability evaluation from manufacturer or professional engineer:

3. Rigging Information

List rigging components – be specific: manufacturer, number of pieces, description, size, length, capacity and component weight (NOTE: Job built equipment must be engineered and proof tested).

Minimum Capacity Component (describe, and show capacity):

(Note: Provide a diagram for each rigging configuration)

4. Itemization of Crane Chart Capacity Deductions

Deductions:

Weight of Heaviest Load:										
Rigging:										
Jib:	-									
Jib Hook:										
Hook Block:										
Load Line:										
Other:										
Gross Deductions:			(#)							
5 Crane Location/Clearances										
a. Provide a to-scale plot plan sh	owing crane loca	tion, adjacent b	uildings, pipe	racks, and other signif	ficant obstructions within					
b Provide a to-scale elevation de	enicting crane a	liacent structure	es, and load							
. What is the horizontal distance	e from the crane	center nin to th	e nearest stri	ucture:						
d. What is the minimum clearance	ce from boom to	highest point o	structure du	ring a pick?						
d. What is the minimum clearance	ce from load to h	ighest point of	tructure durin	ng a nick?						
e. What is the minimum distance	from boom to l	and during a pic								
r. What is the minimum distance		by active pipipe	tanks or og	uinmont during a nick?	Please evolain:					
g. Will the load or any part of the	e crane be over a	ny active piping	, tanks, or equ	dipinent during a pick:	riedse explain.					
h. Have underground site utilities	h. Have underground site utilities been identified and located?									
i. Will outriggers be located over underground utilities? If so, please explain protective measures to be taken:										
j. Describe signaling procedure -	who will be res	ponsible for sigr	aling? Will ha	and or radio signals be	used?					
6. Attachments Provided (All must be	e checked):									
] Plot Plan w/ Crane 🛛 Crane	Charts	Load Calcu	ations 🛛	Job Hazard Analysis	State of CT Fire					
Location (identify swing (Includ	ding any	Rigging List	s 🛛	Assembly /	Marshal Registration					
pat, delivery truck applica	able Notes)	□ Rigging Dia	gram	Dismantie Plan						

ר Bes	location, location of overhead power lines, for example) Elevation Plan (Utilize crane range diagram for example) ure you have considered The following Items ar	d the	Operator's License (copy) Operator's USDOT Medical Certificate OSHA 10 Hour (Note: in accordance with project requirements) following (all must be the Crane Cab:	cheo	Statement of Qualification and Competent Person Designation form for the crane operator to operate crane identified above. cked or marked N/A):		Statement of Qualifications and Competent Perso Designation form for A/D superviso rigger and signal person.	d on or,	3 rd Party Annual Inspection Report (Note: cranes erected on-site will require 3 rd party inspection as erected)
	Hand Signal Chart		Fire Extinguisher		Complete Load Capacity Charts with Notes		3 rd Party Annual Inspection Repor	rt	Completed Daily Inspection Sheet
	Operators Manual		State Crane License/Registration		All other required paperwork, equipment		Crane Lift Plan		
8	Be prepared to confirm	n the	following additional it	tems		100		in set	
0.	Crane Configuration in Compliance with Lift Plan		Maximum Radius Confirmed (MEASURED) Without Load		Maximum Load Confirmed Prior to Achieving Maximum Radius		All Pick Points Vertically Above Load Center of Gravity (NO SIDE LOADS)		Taglines to be Used
	Outrigger Floats & Dunnage Installed (Minimum 3 times pontoon area, or crane capacity divided by 5.)	Pos Cor	Outriggers Fully Extended ition: nputer Set at:		Lift Area and Equipment Inspected		Counterweight Swing Radius Barricaded		Load Swing Radius Barricaded
	Copy of the Demolition Plan in the Cab of the Crane (if applicable)		Lift Plan and Crane Permit in Cab of Crane		Lift Plan and Crane Permit Reviewed with Rigging, Erection or Demolition Crew			D	
*	Non-compliance with an removal from this site	iy pa	rt of this Crane Lift Plar	n will	be grounds for immed	iate	cessation of wor	k and p	ossible permanent
AL mo Re Su	L sections MUST be com bilization of crane – see ference the Section num bcontractor, Rigger and b	plete inst iber. Cran	ed and submitted to M ructions. This use of At e Operator are Respon	J Hug tach sible	hes Construction Com ments for Continuatio for the Accuracy of al	ns/E	y Project Manag xplanations is Er culations and Ins	er for n ncouragespection	review prior to ged – Please ns.
Re	sponsible Person		Name: Signature:		Rigger Respon	sible	Person N S	lame: ignatur	e:
Ph	one #				Phone#				
LM MJ Ma	Hughes Superintendent Hughes Site Safety mager:	:			Signature Signature				
	Submit th	is Co	mpleted form to your I	MJ HI	ughes Representative	18 ho	ours prior to any	crane r	nobilization.

		-
Date:		
Contractor:		
Responsible Pers	rson / Contact:	
Competent Perso	son Onsite:	
Crane / Rigging	Company:	

Responsible Person / Contact:	
Operator:	License #
Project:	Pick Location

Crane Information				وريب								
Make			Model					_		S/N		
Capacity			Туре									
Boom Length			Jib Use	d?		🗆 No	□ Y€	es	Length:	Offset, if	Used	
Load Line # of Parts:			Lift Blo	ck Ca	pacity:		w				_	
The Following Items are	in th	e Crane Cab:										
Hand Signal Chart	۵	Fire Extinguisher			Comple Capacit Notes	lete Load ity Charts with			3 rd Party Annual Inspection Report			Completed Daily Inspection Sheet, last three monthly
Operators Manual		State Crane License/Registrat	ion		All othe paperw	er required vork, equipm	nent					Inspection Reports
Check the Following:							hone					
Anti-two Block Operational		Overhaul Ball Cap Marked	pacity		Wedge Proper	Socket/Becl ly Installed	ket		Backup al working	arm		All warning placards in place
 Boom Angle Indicator Functioning Properly 	Q	Boom High Limit Functioning Prop (lattice boom)	erly		No bro glass	ken or fogge	d		Boom ligh if boom is than 200'	t/beacon higher	D	
 Slings and Rigging Inspected 		□ All wire rope inspected			 Chains and chain slings have capacity tags 		 All hooks inspected for wear and deformation 			Safety Latches in Place		
 Dunnage/Blocking Available to Secure Loads 		Demolition Plan Submitted and Re (if applicable)	molition Plan omitted and Reviewed applicable)		Bracing Suppor Use (wi be secu demolit	:/Temporary ts Available ill loads need red during tion?)	for d to	Π			0	12
Confirm the following ad	ditio	nal items:				20.22		18	Sec. 3			
 Crane Configuration in Compliance with Lift Plan 		Maximum Radius Confirmed (MEAS Without Load Note Radius	SURED)		Maximu Confirn Achievi Radius Note Lo	um Load ned Prior to ng Maximun pad	n 		I All Pick Vertica Load Ce Gravity LOADS	Points Ily Above enter of (NO SIDE		Taglines in Use
 Outrigger Floats & Dunnage Installed (Minimum 3 times pontoon area, or crane capacity divided by 5.) 	Pos (col	Outriggers Fully Extended ition: nsult Lift Plan if No	t)	Lift Area Inspecte		a and Equipr ed	ment		Counte Swing F Barrica	rweight Radius ded		Load Swing Radius Barricaded
Copy of the Demolition Plan in the Cab of the Crane (if applicable)	۵	Lift Plan and Cran Permit in Cab of (ie Crane		Lift Plan Reviewe Erection	and Crane Pe d with Rigging or Demolition	rmit g, n Crew		1			
Notes:												
Review By:												

CRISIS MANAGEMENT

Crisis management is a critical function to protect the company reputation, relationships; and financial condition, thus no crisis should ever be a surprise. The purpose of this plan is to provide a systematic approach to managing a crisis in an organized fashion, without causing a major disruption to normal activities. Just five minutes of proactive thinking of what could possibly go wrong at the beginning of the day could put you in control and prevent an accident. This program will be made available for all employees to read unless there are less than 10 employees whereupon it can be communicated verbally.

A. Identify and Attend to the Injured.

- 1. Are there injuries?
- 2. How bad?
- 3. Who are they?
- 4. Administer first aid to the injured.

B. Get Emergency Help.

- 1. 911 or other planned number in lieu of a 911 capability.
- 2. Identify yourself.
- 3. Identify the "specific" location
- 4. Calmly describe the problem.
- 5. Describe special issues.
 - a. Number of injuries.
 - b. Is there a hazard? What is it?
 - c. Are you evacuating?
 - d. Is anyone trapped?

C. Evacuation

- 1. Is it necessary?
- 2. Meeting place established.
- 3. Head count of employees.
- 4. Sub-contractor head counts.
D. Secure the Site

- 1. Post designated employee at the entrance to control access.
- 2. Direct emergency personnel.
- 3. NO ONE except emergency personnel; government; or company management gain entry.

E. Highway Accident Scenes

- 1. Roadway Right-of-way.
- 2. STOP all traffic but do not direct traffic. Let the police do that.
- 3. Attend to the injured same as any other accident; notify; secure our project.

F. Control the Workforce

- 1. Can they continue working?
- 2. Assist emergency personnel?
- 3. Send the home?
- 4. Keep them gathered for initial interviews?
- 5. Post traumatic stress counseling?
- 6. They DO NOT talk to the media.

G. Keep the Internal Grapevine Down

- 1. Restrict use of all cell phones.
- 2. No calls to outsiders or other employees (except authorized crisis team leaders)
- 3. NO communication on radios.
- 4. NO PICTURES EXCEPT FOR AUTHORIZED ACCIDENT INVESTIGATION
- 5. Explain this is to prevent harmful information leaking out to family members.

H. Media

- 1. Avoid the media, if possible, but if they are present, know they will seek you out.
 - a. Be prepared.
 - b. Have a designated spokesman, preferable the Superintendent or management if present. (buy time if spokesman is in route)
 - c. Have a designated media area as far away from the immediate scene as possible.

- d. Provide only the essential factual information and it's ok to say, "we don't know that as yet" or "it is under investigation".
- e. The media are masters at creating emotion and will do a story with or without you.
- f. Prepare for negative reactions from the media, KEEP YOUR COOL.
- 2. What the Media will seek.
 - a. Cause of the incident Never state a cause until the investigation is complete and we can say with 100% certainty.
 - b. Specific damage estimates isn't immediately available so don't speculate.
 - c. Who or what is at fault again, not until the investigation is complete.
- 3. Don't let them wander the site.
 - a. "I'm sorry, but currently we are only allowing emergency personnel and authorized inspectors into the area. This is for your and everyone's safety. Thank you for your cooperation".
- 4. State only the facts.
 - a. "There has been an accident. This is what happened".
 - b. "People have been injured and have been taken to area hospitals".
 - c. "Our main concern right now is for the employees and their families".
 - d. Avoid, "no comment".
 - e. NEVER provide information, "off the record" as with the media there is no such thing.
 - f. Assume anything you say could be a headline.
 - g. Tell the truth,

H. FOLLOW COMPANY INJURY POLICIES CONTAINED IN THIS SAFETY PROGRAM.

DRUGS AND ALCOHOL

INTRODUCTION

- 1. MJ Hughes Construction Incorporated and all its subsidiaries (Company) have the responsibility for maintaining a safe, healthful and productive work environment for our employees, for employees of third parties on our work sites and for the protection of property and the public. Employees who work under the influence of drugs or alcohol pose serious safety and health risks to themselves, their fellow workers and the public. The possession, use, sale or being under the influence of drugs or alcohol in the workplace presents an unacceptable risk to the Company and its employees.
- 2. To help provide a safe, healthy and productive drug-free work environment, it is the policy of the Company to prohibit the manufacture, possession, use, and sale or being under the influence of illegal drugs, controlled substances, alcohol or other mind-altering substances on any work location. It is also the policy of the Company to assist its employees in overcoming drug and alcohol addiction. To accomplish this the Company provides access to available community resources for non-collective bargaining employees needing assistance with personal problems, including substance abuse. Employees covered by collective bargaining agreements may be provided assistance for personal problems under the terms of those agreements. The Company has also implemented the following policies and drug-testing program in furtherance of its policy of maintaining a safe, healthful, productive and drug-free work environment for its employees.

PROHIBITED SUBSTANCES AND ITEMS

- The use, possession, manufacture, selling, distributing, concealing, receiving, transporting, or being under the influence of any of the following substances or items on Company property, by employees and all others, is prohibited:
 - a. Illegal drugs, controlled substances, marijuana, mood or mind-altering substances, "look-alike" substances, designer and synthetic drugs, and any other drugs or abnormal substances that may affect a person's senses, motor functions, or alter perception.
 - b. Alcoholic beverages, except at Company functions as specifically authorized by Company management.

- c. Drug paraphernalia.
- d. Prescription drugs and "over the counter" medications, except under the following conditions:
 - (1). The prescription drugs have been prescribed by a licensed physician for the person in possession of the drugs. In addition, the employee is taking the prescription following the lawful direction of the prescribing physician or a non-prescription medication following the manufacturer's instructions.
 - (2). The drugs/medication must be kept in their original container and must be taken in accordance with the dosage recommendations and usage cautions and must not affect the person's ability to perform work safely.
 - (3). The prescription was filled by a registered/licensed pharmacist within the last twelve (12) months for the person possessing the drug / medication: the label will contain the person's name, the physician's name, the prescription number and the date issued.
 - (4). The Company reserves the right to determine if a drug or medication, whether prescribed or not, produces hazardous or non-safe effects and may restrict the use of any such drug or medication on Company premises accordingly. This may also include restricting the individual's work activity or presence at the work site.

SEARCHES AND INSPECTIONS

- 1. Conditions
 - a. Searches or inspections of the Company's premises and the employees and visitors at those premises may be utilized for the following situations:
 - b. The Company reserves the right to search or inspect for purposes of insuring compliance with the Policy, all Company-owned vehicles and property at any time without prior notice.

- c. Upon reasonable cause, the Company retains the right to perform reasonable searches or inspections of employees' desks, offices, lockers, vehicles, lunch boxes and other personal effects while on Company premises during working hours.
- d. Where an employee is performing Company business on the property of a client, the employee will be subject to searches in accordance with the reasonable rules of the property owner/lessee.

2. Search Procedure

- a. Searches and inspections of personal property or effects are voluntary and will not be conducted without written consent.
- Searches will be performed with concern for the personal privacy of each employee or other individual. Body searches are not permitted. However, employees may be requested to empty their pockets.
- c. Any suspected unauthorized controlled substances, illegal drugs or alcohol found will be impounded and sealed in a container. The seal will bear the date and names of all the people present, and a general description of the item. A receipt will be given to the individual for such impounded property.

3. Discipline

a. Employees or individuals who refuse to cooperate with a reasonable search will be advised that submission to such a search is a condition of continuing employment or presence on the premises and that failure to cooperate will result in discipline up to and including termination of employment or removal from the premises.

DRUG TESTING

1. Conditions

- a. Testing for the presence of prohibited substances may be utilized for the following situations:
 - Employees covered by collective bargaining agreements will be subject to drug testing pursuant to the terms and conditions of the applicable collective bargaining agreement.
 - (2). All applicants for employment with the Company for a position not covered by a collective bargaining agreement are subject to drug testing in accordance with this policy.
 - (3). Employees not covered by a collective bargaining agreement who perform safety sensitive functions and attempt to work under the influence of drugs or alcohol pose a particularly serious safety risk to themselves and others. In an effort to reduce this risk, employees who perform safety sensitive functions as part of their regular work duties are subject to testing at the implementation of this policy and under the following conditions:
 - (a). Employees assigned to safety sensitive functions will participate in random testing.
 - (b). Employees assigned to safety sensitive functions may be required to participate in testing while assigned to a job site that is being surveyed.
 - (c). Upon reasonable cause, the Company will require employees assigned to safety sensitive functions to be tested for the use of controlled substances.

- (d). Post-accident testing will be required where, because of an accident causing or having the potential to cause serious injury or substantial property damage, there is reasonable cause to believe an employee has been working while under the influence of drugs or reasonable cause to believe the employee was at fault in the accident.
- b. All employees may be subject to drug testing as follows:
 - (1). Where, as a contractual condition of performing work for various owners and governmental agencies, the Company must certify that employees working on the project have passed a pre-access test within a prescribed period and agree to submit to specified testing requirements.
 - (2). Follow-up testing under terms and conditions agreed to by the employee and the Company pursuant to a Voluntary Rehabilitation Agreement.
 - (3). Employees will be subject to drug testing where required by law as a condition of performing their job duties.
- 2. Testing Procedures
 - a. A signed testing authorization form is required before any individual may be tested.
 - b. Specimens for screening and testing will be collected by an employee trained to test or in a medical facility or mobile clinical unit. Collection will be conducted in a setting and manner calculated to ensure applicant/employee privacy.
 - c. Initial screening of for drugs will be performed using approved point of collection device.
 - d. A positive laboratory test result does not automatically identify an applicant or employee as having used drugs in violation of Company policy. A Medical

Review Officer (MRO) with detailed knowledge of possible alternate medical explanations will review and interpret positive test results.

- e. If requested to do so by the donor, within 72 hours of having been informed of a verified positive test, the local program administrator will direct, in writing, a reanalysis of the original sample. Such a reanalysis may take place only at laboratories certified by DHHS and agreed upon by the donor and the Company.
- f. If the retest proves negative, the Company will reconsider any personnel action taken in response to the initial confirmed positive result.
- g. To ensure confidentiality, test results will only be provided by the MRO verifying the tests to the Safety Manager or Company official specifically designated by the Project Manager, who are responsible for taking action or providing advice based upon the results of the testing.
- Copies of documents received by the Company and/or maintained by the laboratory including test results, computer printouts, graphs, charts, interpretations, and chain-of-custody forms will be made available upon written request to the individual who is tested.

PENALTIES FOR VIOLATIONS OF POLICY

- 1. Right to Discipline
 - a. Nothing in this Program is to be interpreted as constituting a waiver of the Company's rights to take disciplinary measures for reasons other than an employee's refusal to submit to a drug test. A positive test result may result in discipline up to and including termination. The degree of discipline will be in the sole discretion of the Company.
- 2. Violations Requiring Discipline
 - All violations of the Policy including but not limited to using, possessing, concealing, receiving, transporting, manufacturing, or being under the influence of any of the items, drugs or substances prohibited by the Policy will be subject to at least minimum discipline.

- Refusal of consent to submit to reasonable search, provide valid urine specimens upon request, or sign related Company approved documents will result in at least minimum discipline.
- c. Employees who are convicted of or plead guilty or nolo contendere (not contend) to off-the job drug related crimes may be considered in violation of the Policy. In deciding what action to take, the Company will consider the nature of the crimes and other factors relative to the impact of the employee's conviction or guilty or nolo contendere plea upon the conduct of the Company's business.
- d. Any employee who is convicted of a drug-related crime that occurred during working hours at the workplace must notify the Director of Safety or the local project manager of such conviction within five (5) days of the conviction. Failure to notify will result in termination.
- 3. Minimum Discipline
 - a. Minimum violation discipline will consist of at least suspension of employment, without pay, pending the successful enrollment and participation in a substance abuse rehabilitation program, consistent with the requirements of the voluntary rehabilitation section of these guidelines. Minimum refusal discipline will consist of at least loss of the privilege to drive a Company vehicle or operate Company machinery.
- 4. Violations Requiring Termination
 - a. Any employee found to be in violation of the Policy by selling or distributing any of the items, drugs or substances prohibited by the Policy will be terminated.
- 5. Employability Pending Receipt of Test Results
 - a. Where an employee is not allowed to return to work until laboratory results are received, the employee will be suspended without pay. Where the test result is negative, the employee will be reinstated with back pay, provided the employee has not been given a disciplinary suspension covering time missed waiting for test results.

b. Where the Company determines the circumstances surrounding an occurrence or conduct warrant immediate discharge, it retains the right to discharge the employee and forgo the testing procedure.

VOLUNTARY REHABILITATION

- Employees who wish to seek the Company's assistance for rehabilitation of an alcohol or drug abuse problem should request such assistance prior to the Company's detection through search and/or testing.
- 2. When an employee, prior to selection for testing or an incident or detection, seeks the Company's assistance, reasonable efforts will be made to provide assistance with rehabilitation or counseling using the available Company or community resources.
- The cost of rehabilitation or counseling is the sole responsibility of the employee.
 However, if the employee is covered by the Company's insurance plan, the costs will be paid as specified in the insurance plan.
- 4. Any request for assistance will be kept confidential.
- 5. An employee who voluntarily requests assistance with a drug or alcohol problem will be required to enter into a rehabilitation agreement with the Company.

OTHER

- 1. The Company reserves the right to use other forms of drug testing and modify this program upon reasonable notice and consistent with privacy, accuracy, chain-of-custody and confidentiality considerations.
- 2. If any part of this Policy is held invalid by competent authority only such part will be invalid and the balance of the Policy will continue in full force and effect.

NOTE: SEARCHES AND SCREENING TESTS WILL ONLY BE UTILIZED TO THE EXTENT THAT THEY ARE CONSISTENT WITH FEDERAL, STATE OR LOCAL LAW AND EXISTING COLLECTIVE BARGAINING AGREEMENTS.

DEFINITIONS THAT APPLY TO THIS POLICY

APPLICANT means a person who applies for employment with the Company and has not been previously employed by the Company during the preceding thirty (30) calendar days.

APPROVED POINT OF COLLECTION DEVICE means a self-contained qualitative immunoassay devise that screens for amphetamine, cocaine, morphine, marijuana and phencyclidine at the US DOT initial test cutoff levels. Acceptable devices include but are not limited to Roche TesTcup -5[®], Pharmatech QuickScreen[™] Cup, Jant Pharmacal Accutest[®] Cup, Syva RapidCup[™], Redwood Biotech RediCup[™] and Forefront InstaCup[™].

COMPANY WORK LOCATION, COMPANY PREMISES means all property, facilities, land, offices, living quarters, buildings, structures, fixtures, installations, trailers, equipment, boats, vessels, barges, aircraft, automobiles, trucks, all other vehicles, and parking areas, whether owned, leased, used or under the control of the Company. This may also include other work locations, including the job site of a customer, or to and from those locations while in the course and scope of employment with the Company.

CONTROLLED SUBSTANCES means chemical substances and drugs controlled under the laws of the United States of America or by appropriate state law. Anything that one can consume but cannot purchase at will. Any controlled substance listed by the United States Drug Enforcement Agency as a controlled substance and listed in the Federal Register on Schedules I-V of 21 C.F.R. Section 1308, et seq. of the United States Drug Enforcement Agency Controlled Substances Code.

ILLEGAL DRUGS means drugs that are not legally obtainable and drugs that are legally obtainable but have been obtained illegally.

POSITIVE TEST RESULT means that a test performed on a urine specimen provided by an employee detected a measurable presence of a drug or controlled substance, was confirmed by a more sensitive test and verified by a Medical Review Officer.

RANDOM TESTING means a selection process where affected employees are selected for unannounced drug testing and each employee has an equal chance of being selected for testing.

REASONABLE CAUSE OR SUSPICION means a reasonable belief that the employee is under the

influence of a prohibited drug, after consideration of observations concerning the appearance, behavior or speech of the employee.

SAFETY SENSITIVE ASSIGNMENTS means all individuals who manage or supervise employees and all employees who in the normal course of their assignment could be expected to operate motor vehicles, construction equipment, mining, milling and manufacturing equipment or be exposed to the hazards associated with construction, mining, milling or manufacturing operations. The Company reserves the right to determine which assignments are safety sensitive.

UNDER THE INFLUENCE means an employee has a measurable presence of an illegal drug or controlled substance indicated by a positive test result.

VALID URINE SPECIMEN means at least 30 milliliters of an applicant/employee's urine with a normal temperature, in the range between 32-38°C/90-100°F, a specific gravity of more than 1.003 and a creatinine concentration above 0.2g/L that has not been artificially diluted or adulterated.

EDUCATION AND TRAINING

- Before their first job assignment, every new employee will receive a thorough safety orientation. They will be given a copy of the Company's Employee Handbook to read before their first assignment and instructed in job specific safe work practices.
- 2. Employees that may be exposed to known or expected workplace hazards will be instructed in the recognition of the hazard, in the procedures for protecting themselves from injury, and in the action to take in the event of injury.
- 3. Previous experience must be considered when assigning personnel. Only those qualified by training or experience will be permitted to operate machinery and equipment or project phase requiring specific knowledge and training.
- 4. Safety meetings with all supervisory personnel will be conducted by or at the direction of the Project Manager or Safety at least monthly to review accident prevention efforts and results, safety policy and the procedures pertinent to the work being performed.

- 5. Supervisors will attend and participate in these monthly supervisor safety meetings. This training will be documented.
- 6. First aid training will be provided to ensure that each supervisor has a current CPR with AED; Bloodborne Pathogens; and First Aid Certificate.
- 7. Supervisors will hold "toolbox" or "tailgate" safety meetings with their crews at the beginning of each new job and at least weekly after that to discuss procedures, suggestions for improvement, past accidents and educational material, such as a Job Hazard Analysis about the work involved. These meetings should be held at the beginning of the first shift each week. Additional meetings may be held when there are crew changes or significant changes in job conditions or phases. **NOTE: This training will be documented.**
- 8. In operations where more specific training is required by law or regulation, such as the use of respiratory protective equipment, work in confined spaces, exposure to hazardous substances, etc., additional training will be conducted according to the applicable regulations (see accident prevention program supplements).
- 9. The records of safety meetings and safety training will be documented in HCSS Field or in the supervisors HCSS Diary.

ELECTRICAL

- 1. All safety devices, tools; or pieces of equipment shall be inspected for flaws prior to use. Electrical installations and maintenance will be performed only by trained, qualified electricians. Damaged insulating equipment shall be removed from service immediately. Visual and electrical re-testing of all insulating gloves, sleeves and blankets shall be conducted at prescribed intervals when found to be damaged or defective. Insulating equipment shall be marked with the test date or the next due date. Any area of electrical work shall also be well illuminated. Fish tapes, measuring tapes; or any conductive material shall not be used in areas of exposed energized conductors or in raceways unless suitable protective barriers are present.
- 2. Electrical systems will conform to the requirements of the National Electrical Code, (NFPA 10) and the contract specifications as applicable.

- 3. All 125-volt single phase, 15 and 20 ampere receptacle outlets that are not a part of the permanent wiring of the building or structure will have ground-fault circuit-interrupter protection for personnel.
- 4. All electrical circuits, equipment and conductor enclosures will have a grounding system that is: permanent and continuous; of such capacity to conduct safely any fault current likely to be imposed on it; and of sufficiently low resistance to limit the voltage to ground and facilitate the operation of the circuit breaker in the circuit.
- 5. The continuity and resistance of plant grounding systems will be tested immediately after installation, repair or modification and annually after that.
- 6. Electrical hazards shall have protective shields, barriers; or insulating materials designed for the voltage levels encountered and utilized to prevent contact by workers or equipment. This includes working in confined or enclosed spaces. Qualified workers or workers in training shall attend work locations while exposed conductors or parts of equipment are connected to high voltage systems.
- 7. All electric powered machinery and equipment will be de-energized and the switch locked and tagged out before any maintenance or repair work is performed in accordance with Program Supplement: Lock-Out Tag Out. If a system cannot be de-energized, a responsible supervisor shall review the criteria and approve the work, workers must be instructed in the hazards present, and protective PPE; equipment; and safeguards must be present. The responsible person shall ensure all protective equipment is removed from the area and safeguards and barriers are replaced.
- 8. Precautions will be taken to prevent contact with energized electrical lines, either above or below ground. When above ground, only qualified employees will adhere to approach distances in table 55. Ladders and clothing must be non-conductive unless they are rendered non-conductive by covering, wrapping or another insulating means.
- Unless electrical lines are de-energized and visibly grounded, no equipment, machinery or tools will be operated or handled within ten feet of lines carrying up to 50,000 volts. Greater distances are required for voltages over 50,000.

- 10. Temporary lighting must have guards over the bulbs. Broken and burned-out bulbs must be replaced immediately. Empty bulb sockets must be used or protected from contact. Spaces will not be entered without proper lighting.
- 11. Hazardous areas must be barricaded and appropriately signed including those with overhead electrical lines. All work locations must have free and safe access.

LOCK-OUT & TAG-OUT

- 1. This procedure establishes minimum requirements to ensure that machines, equipment and energized electrical circuits are isolated from potential energy sources and locked and tagged out before maintenance or repairs are done.
- 2. This procedure applies to any operation where failure to lock and tag out a potential energy source could cause an accident.

ENERGY CONTROL

- 1. Before employees turn off a machine, equipment or electrical circuit, the employees must know the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy.
- 2. When identifying potential energy sources, all the following types should be considered:
 - a. Electrical energy sources including power panels, transformers, capacitors, batteries and generators.
 - b. Fluid energy sources including high pressure or high temperature lines and lines that carry caustic or flammable materials.
 - c. Stored energy sources including suspended loads, hydraulically lifted loads, compressed springs and equipment that could shift, move or rotate unexpectedly.

Note: This is only a guide to some types of potential energy, not a complete list of all potential energy sources.

3. The machine, equipment or electrical circuit must be turned off or shut down using the

procedures established for that machine, equipment or electrical circuit. An orderly shutdown must be utilized to avoid any additional or increased hazard(s) to employees because of the equipment stoppage.

- 4. All energy isolating devices needed to control the energy to the machine, equipment or electrical circuit must be located and operated in a way that isolates the machine or equipment from the energy source(s).
- 5. After the equipment is de-energized, each affected employee will lock the energy isolating device in the open position using a multiple locking hasp (i.e., three employees, three locks) and will retain possession of his/her key to prevent inadvertent re-energizing of the circuit. One supervisor will monitor all affected employees.

Note: Each affected employee should be issued a lock and tag that will identify that employee as the custodian of that lock and tag. All spare or additional keys must be locked in a box labeled "Lock out keys, authorized personnel only" and stored away from the lock out devices.

Note: Treat all de-energized circuits as if they were live until tested

- 6. The energy isolation device must then be tagged as out of service (e.g., "DANGER DO NOT OPERATE", "DANGER EMPLOYEES WORKING ON MACHINERY"). Tags must be attached to prevent inadvertent or accidental removal. Tag attachments must be of a non-reusable type, attachable by hand, self-locking, with a minimum unlocking strength of 50 pounds. All weather nylon cable ties are acceptable tag attachments.
- 7. Locks and tags must be attached in a way that will hold the energy isolating devices in a "safe" or "off" position.
- 8. Locks and tags must be attached in a way that will clearly indicate that the operation or movement of energy isolating devices from the "safe" or "off" position is prohibited.
 - Following the attachment of locks and tags to energy isolating devices, all potentially hazardous stored or residual energy will be relieved, disconnected, restrained, and otherwise rendered safe.

- 9. If there is a possibility that stored energy could accumulate to a hazardous level, verification of isolation must be continued until the servicing or maintenance is completed or until the possibility of stored energy accumulation no longer exists.
- 10. After machines, equipment or electrical circuits have been locked and tagged out, the machine or equipment must be test started, to ensure the right energy sources were in fact locked out, and any remaining stored energy must be bled off or released in a controlled safe manner.

RELEASE FROM LOCK AND TAG OUT

- 1. After maintenance or repairs have been completed, the affected area will be inspected to ensure that tools and nonessential items have been removed, guards have been replaced and employees have been notified that the machine, equipment or electrical circuit is being re-energized.
- 2. Each lock and tag must be removed from each energy-isolating device by the employee who applied the device. Exception: If the employee who applied a lock and tag is not available to remove them, the lock and tag may be removed by the supervisor, if the supervisor:
 - a Confirms that the employee who applied the lock and tag is not at the facility.
 - b. Personally informs the employee, before the employee returns to work, that his/her lock and tag have been removed.

TRAINING

- 1. All employees likely to be assigned tasks involving maintenance or repairs of equipment, machinery or electrical circuits will be trained using this procedure before their assignment.
- 2. Employees will be trained to identify potential energy sources within systems and job sites they work on and to properly lock and tag out all devices controlling them.
- 3. Employees who are or may be in an area where energy control procedures are utilized must be instructed about the procedure and about the prohibition relating to attempts to restart or re-energize machines or equipment that are locked and tagged out.

- 4. Employees will be instructed that compliance with danger, warning, and lock out tags is mandatory.
- 5. Retraining must be provided for all affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or a change in these lock out-tag out procedures.
- Retraining must also be conducted whenever a periodic evaluation reveals, or whenever a supervisor thinks that there are deviations from or inadequacies in the employee's knowledge or use of energy control procedures.
- 7. Training and retraining must be documented and certified as being accomplished and current. The certification must contain each employee's name and dates of training.

PERIODIC EVALUATION

- 1. Supervisors responsible for this procedure must conduct a periodic (at least annual) evaluation to confirm that it is being followed. The evaluation must include:
 - a. Observation of employees using the lock and tag out procedure.
 - b. A review of employees' responsibilities and correction of any misunderstanding or misapplication of the procedure.
- 2. The supervisor must certify that the evaluation has been completed including the following:
 - a. The machinery, equipment or energy source on which the energy control procedure was utilized.
 - b. The names of all the employees included in the evaluation.
 - c. The date and location of the evaluation.
 - d. The evaluator's name and position.

LOCK OUT TAG OUT DEFINITIONS

AFFECTED EMPLOYEE means an employee whose job requires him/her to operate or use a machine or equipment on which service or maintenance is being done under lock and tag out, who locks and tags out machines or equipment in order to perform service or maintenance or whose job requires him/her to work in an area in which such service or maintenance is being done.

ENERGY ISOLATING DEVICE means a mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: a manually operated electrical circuit breaker; a disconnect switch; a manually operated switch in which no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit type devices are not energy isolating devices.

ENERGY SOURCE means any source of electrical, mechanical, hydraulic, chemical, thermal, or other energy.

LOCK AND TAG OUT means the placement of a lock or lock out device and a tag indicating that the energy isolating device and the equipment being controlled may not be operated until the lock or lock out device and tag are removed, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lock or lock out device is removed.

LOCK OUT DEVICE means a device that utilizes a positive means such as a lock or multiple locking hasp, to hold an energy isolating device in a safe position and prevent the energizing of a machine or equipment.

Lockout/Tagout Energy Control Procedures Specific To Each Piece of Equipment

Preparation for Shut Down

- 1. Identify equipment to be shut down:
- 2. Location in facility:
- 3. Procedures to notify all affected employees:
- 4. Identify **all** power sources:
- 5. Identify lockout/tagout devices to be used:

Shut Down

Description of the shut down procedures:

Isolation

Procedures for isolation of equipment from **all** power sources:

Procedure for locking out or tagging out equipment:

Release of Stored Energy

Procedures for the release of stored energy (where applicable):

Verification of Isolation

Procedures to ensure that equipment is isolated from all power sources:

Start-Up

- 1. Visual inspection of the machine and equipment. Ensure all tools have been removed. Return guards to place.
- 2. Notify all affected employees and other employees of the start up.
- 3. Remove all lockout/tagout devices and restore power.

ENVIRONMENTAL SAFETY

- 1. Prohibited Activities Within Environmental Areas
 - a. Underwater blasting
 - b. Water jetting
 - c. Release of any petroleum products of chemicals into water or soil

REQUIREMENTS

- 1. All equipment must be checked for leaks and completely cleaned of any external petroleum products, hydraulic fluid, coolants, and other deleterious materials prior to any regulated work area.
- Response to accidental spills or leaks shall follow the Spill Prevention Control and Countermeasures plan. (SPCC) Spill kits will be provided according to the hazard presented. Communication devices will be present as well as the phone number of local incident responders.
- 3. Temporary Erosion and Sediment Control (TESC) measures will be put in place according to the SWPPP/TESC plans *prior* to any work commencing. Inspection of these measures will take place daily and documented by the site erosion and sediment control lead. Periodic evaluations will be made to determine the effectiveness of existing controls.
- 4. Fueling or lubrication of equipment must be outside any regulated area.
- 5. Personnel working within any regulated work area shall comply with all applicable regulations specific to the area and responsible employees shall be trained in spill response.
- 6. Personnel shall take precautions around shrubbery for exposure to poison oak or other hazardous natural items.
- 7. During clearing and grubbing operations, personnel will heed all safety precautions for overhead projections; trip/fall hazards; slopes; and tensioned wood.
- 8. Smoking and eating is only permitted in designated areas away from any regulated work area.
- 9. Trash or other items will be properly discarded. Materials of any nature will not be discarded into any regulated work area; waterway; or roadside.

- 10. Employees will wash their hands; arms; and faces after using hazardous products or concrete and *before* eating; drinking; smoking; leaving the jobsite, or *after* using the toilet facilities.
- 11. Gasoline or other flammable/combustible liquids will not be used for cleaning purposes.
- 12. Hazardous materials will be stored in such a manner as to minimize the potential for a spill.

EQUIPMENT/ TRUCKS and INSPECTIONS

- 1. All construction equipment will be maintained in safe working condition and will be appropriate and adequate for the intended use.
- 2. Equipment will be operated only by authorized personnel. Operators of equipment, machinery or vehicles must be qualified by formal instruction from a qualified trainer; practical exercises; and evaluation; and properly licensed, if required, for the operation involved. Training will include load capacity and balance; sight distances; spotting; ramps; refueling etc. Refresher training will be provided as required due to project specific items; accidents; carelessness; etc. as outlined in the training packet and at a minimum or 3-year intervals.
- 3. Equipment maintenance is to be performed only by qualified mechanics.
- 4. Equipment operators and truck drivers will make a pre-shift walk around safety inspection of their equipment, and any conditions that effect safe operation will be corrected before further use including chocks, supports, plates and any other safety related items.
- 5. Equipment will not be operated unless all required safety devices are in place and functioning properly.
- 6. Careless, reckless or otherwise unsafe operation or use of equipment will result in discipline and may constitute grounds for dismissal.
- 7. Before performing any service or repair work, all equipment will be stopped and positively secured against movement or operation, locked and tagged out of service, unless it is designed to be serviced while running, following the manufacturer's instructions.

- 8. When equipment has been tagged out of service the equipment will not be operated until repairs/service has been completed except by the employees doing the repairs/service.
- 9. When equipment is being serviced or repaired, the operator will dismount until the service or repair is completed and then make a complete walk-around safety check before remounting.
- 10. All bi-directional construction equipment and motor vehicles with an obstructed view to the rear will be equipped with a warning horn and an automatic back-up alarm that can be heard above and distinguished from the surrounding noise level.
- 11. All off-highway construction equipment and trucks such as loaders, dozers, scrapers, motor graders, rock trucks, tractors, rollers and compactors will be equipped with roll-over protective structures (ROPS) and seat belts, following the applicable regulations. Seat safety belts will be used by the operators of equipment provided with ROPS. Personnel will not be transported in or ride in vehicles that are not equipped with seats.
- 12. Mobile equipment will not be left unattended unless parked securely to prevent movement, with all ground engaging tools lowered to the ground, brakes set and the engine off. Equipment parked at night will be lighted, barricaded or otherwise clearly marked where exposed to traffic.
- 13. When fueling equipment or vehicles with gasoline or liquefied petroleum gas (LPG) the engine will be shut down.
- 14. All equipment and vehicles where a fire or its effects could impede escape from the equipment will be equipped with appropriate fire extinguishers or fire a suppression system. These fire extinguishers should be rated at least 2-A: 10-B: C and contain at least 4.5 pounds of extinguishing agent.
- 15. Haul roads will be designed, constructed and maintained for safe operation consistent with the type of haulage equipment in use. Standard traffic control signs will be used where necessary. Elevated roadways will have axle high berms or guards maintained on their outer banks.

- 16. Equipment, tools and materials hauled on pickups and flatbed trucks will be secured to prevent them from falling onto the road.
- 17. Equipment, pickups and passenger vehicles not necessary for performing the work should be parked well away from the work area to reduce congestion and avoid collisions.
- 22. Communication devices and headsets will not be used by equipment operators unless those devices are necessary for the performance of their duties.

Project Name:	Project Location:
Inspected by:	Date of Inspection:
Equipment Name:	Number:

CONSTRUCTION EQUIPMENT INSPECTION

	OK	BAD	N/A	Remarks		OK	BAD	N/A	Remarks
Tracks, tires, wheels		_	_		Motor (wiring)			<u></u>	
Brakes			_		Radiator	_			
Horn			-		Belts	_			
Lights			_		Hoses		_		
Clutch	_	_	_	3					
Windshield Wiper		_	2						
Glass			_						
Rear View Mirror	_		_		Shop Equipment				
Body			_		Lubrication Points			<u></u>	
Cover					Loose Bearings			_	-
Frame	-		_		Guards		_		
Dump Mechanism			_		Belt Tension				
Steering					Loose Gears	—			
Fire Extinguisher					Brakes			_	
Signal System					Vibration				
Fuel & Gas Lines			_		Pneu. Interlocks				
Fuel Tank			-	·	Exhaust System				
Exhaust System	-		a		Proper RPM	_	;;		<u> </u>
Boom					Overload Protect	_			
Boom Hoist			_		Mech. Switch				
Sheaves					Ground Continuity	_	_		
Hooks,					Limit Switches	_			
Grab Bars, Steps					Cords				
Warning Lights					Plugs/Receptacles			_	

Forklift Inspection Check	klist
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т F S S М Т W **Engine Off Checks** Leaks - Fuel, Hydraulic Oil, Engine Oil or Radiator Coolant Tires - Condition and Pressure Forks, Top Clip Retaining Pin and Heel - Check Condition Load Backrest - Securely Attached Hydraulic Hoses, Mast Chains, Cables and Stops - Check Visually Overhead Guard - Attached ROP/FOP Finger Guards - Attached Propane Tank (LP Gas Truck) - Rust Corrosion, Damage Safety Warnings - Attached (Refer to Parts Manual for Location) Battery - Check Water/Electrolyte Level and Charge All Engine Belts - Check Visually Hydraulic Fluid Level - Check Level Engine Oil Level - Dipstick Transmission Fluid Level - Dipstick Engine Air Cleaner - Squeeze Rubber Dirt Trap or Check the Restriction Alarm (if equipped) Fuel Sedimentor (Diesel) Radiator Coolant - Check Level Operator's Manual - In Container Nameplate - Attached and include Load Rating Information Seat Belt - Functioning Smoothly Hood Latch - Adjusted and Securely Fastened Brake Fluid - Check Level Engine On Checks - Unusual Noises Must Be т w т F S S M Investigated Immediately Accelerator or Direction Control Pedal - Functioning Smoothly Service Brake - Functioning Smoothly Parking Brake - Functioning Smoothly Steering Operation - Functioning Smoothly Drive Control - Forward/Reverse - Functioning Smoothly Tilt Control - Forward and Back - Functioning Smoothly Hoist and Lowering Control - Functioning Smoothly Attachment Control - Operation Horn and Lights - Functioning Cab (if equipped) - Heater, Defroster, Wipers - Functioning Gauges: Ammeter, Engine Oil Pressure, Hour Meter, Fuel Level, Temperature, Instrument Monitors - Functioning Т F S S M Т W Work & Travel Area: Boom/Mast/Load Height - clearance Counterweight swing - clearance Ground condition setup/outriggers Location of power lines Underground lines/hazards Pedestrian/vehicle hazards HOUR METER

Insert date for each day

Inspectors Initials (Required)

EXCAVATION AND TRENCHING

INTRODUCTION

- 1. This program establishes the minimum requirements for all work in excavations and trenches, which may expose employees to the hazards of moving ground and will be administered by a competent individual trained in excavation and trenching.
- 2. This program incorporates the pertinent requirements of the applicable State and Federal safety regulations or excavations and trenching.
- 3. Deviations from the requirements of this program or the applicable regulations and all excavations and trenches deeper than 20 feet will be constructed and maintained in accordance with the design prepared by a registered professional engineer.

GENERAL REQUIREMENTS

NOTE: All employees engaged in excavating and trenching shall be trained in the hazards therein associated as well as the requirements contained in this program.

- 1. All surface encumbrances adjacent to an excavation that may create a hazard to employees will be removed, secured or supported, as necessary, to protect employees.
- 2. The estimated location of underground installations, such as sewer, telephone, electric, water or other underground utilities will be identified prior to opening an excavation. The regional CALL BEFORE YOU DIG notification center in the area and the owners of underground facilities who may not participate in the regional CALL BEFORE YOU DIG program will be notified of proposed excavation at least 2 working days prior to the start of excavation operations. When excavations approach the estimated location of underground installations the exact location will be determined by probing or hand digging, as necessary, to prevent accidental contact with the underground installations. While the excavation is open, underground installations that create a hazard to employees will be supported, protected or removed, as necessary to protect employees.
- 3. Appropriate access and egress in the form of a stairway, ladder or ramp will be provided in all excavation deeper than 4 feet. In trenches the stairway, ladder or ramp must be within 25 feet of employees.

- 4. Employees exposed to vehicular traffic will wear orange vests or other equivalent high visibility orange apparel with reflective striping. (see PPE)
- 5. Employees will be protected from exposure to falling loads that may be dropped by lifting or excavating equipment.
- 6. A warning system for mobile equipment, such as barricades, signals or stop logs, will be provided when equipment is operated adjacent to an excavation and the operator does not have a clear and direct view of the edge of the excavation.
- 7. Excavations deeper than 4 feet will be tested, as necessary, to identify and prevent exposure to hazardous atmospheres. Provisions will be provided to exclude vehicle exhaust from creating hazardous atmospheres including ventilation when operated within excavations or shafts. Emergency rescue equipment such as rescue breathing apparatus, a safety harness and line or a basket stretcher, will be available where a hazardous atmosphere exists or could be expected to develop in an excavation. Employees shall wear a harness with a lifeline when entering deep and confined excavations. The lifeline shall be securely attached and separate from any other lines and shall be constantly attended while the employee is in the space.
- 8. Employees will not work in excavations where they will be exposed to the hazards associated with water accumulation. If water accumulation in an excavation is controlled using pumps, the operation of the pumps will be monitored by a competent person.
- 9. The stability of adjacent structures such as buildings, walls and sidewalks will be maintained using a support system, as necessary to protect employees.
- 10. Employees will be protected from loose rock or spoil that could fall or roll into the excavation by placing and keeping such material at least 2 feet from the edge of the excavation.
- 11. Daily inspections of excavations will be made by a competent person to identify and eliminate conditions that could result in possible cave-ins, failure of support systems hazardous atmospheres or other unsafe conditions. Inspections will be conducted before the start of work each day and after every rainstorm or other occurrence that may increase the hazard of moving ground.

12. Where employees or equipment are allowed or required to cross over excavations appropriate fall protection in the form of walkways or bridges with standard guardrails will be provided.

REQUIREMENTS FOR PROTECTIVE SYSTEMS

- 1. Sloping, shoring or shielding will be provided for protection of employees in excavations except where the excavation is made in stable rock, or the excavation is less than 4 feet deep and an examination by a competent person does not indicate a potential for cave-in.
- 2. When sloping or benching is chosen as the method to protect employees in an excavation one of the following optional designs of sloping and benching systems will be used:

Option 1 -Sloping the excavation at an angle of $1\frac{1}{2}$ horizontal to 1 vertical or flatter.

Option 2 -Performing a soil classification and determining the acceptable slopes.

Option 3 -The project specific design prepared by a registered professional engineer. Engineered designs must be in writing and must include the name and registration number of the engineer, detailed plans and the calculations used in the design, the magnitude of slopes and the configurations determined to be safe. A copy of the design will be maintained at the jobsite during the use of the engineered system.

3. When a shoring or shielding system is chosen as the method to protect employees in an excavation one of the following optional designs of support systems, shield systems and other protective systems will be used:

Option 1 -Performing a soil classification and determining the appropriate aluminum hydraulic shoring configuration using the shoring manufacture's tabulated data or Section F. of this program. When using the manufacture's tabulated data, the shoring system must be installed in accordance with all the specifications, recommendations, approvals to deviate issued by the manufacture. If used, the manufacture's tabulated data, specifications, recommendations, limitations and any approval to deviate from any of them must be in writing and maintained at the jobsite during the Use of the shoring system.

Option 2 -The project specific design prepared by a registered professional engineer. Engineered designs must be in writing and must include the name and registration number of the engineer, detailed plans and the calculations used in the design and the sizes, types and configurations of materials to be used in the support system. A copy of the design will be maintained at the jobsite during the use of the engineered system.

- 3. The materials and equipment used for protective systems will be free of damage or defects that might impair their proper function. Manufactured materials and equipment Will be maintained in accordance with the recommendations of the manufacturer. If material or equipment used in a protective system is damaged it must be inspected by a competent person before being reused.
- 4. The installation and removal of supports will be done in accordance with all the following:
 - a. Members of support systems will be securely fastened together as necessary, to prevent sliding, falling, kick-outs or other predictable failures.
 - b. Support systems will be installed and removed in a manner that protects employees from cave-ins, structural collapses or being struck be members of the support system.
 - c. Individual members of support systems will not be exceeding their design capacity.
 - d. Before temporary removal of individual members begins, additional precautions

will be taken to protect employees, including installing other structural members to support any additional load imposed on the support system.

- Removal will begin at, and progress from, the bottom of the excavation.
 Members will be released slowly to reduce the likelihood of failure of the remaining members or a cave-in.
- f. Backfilling will progress together with the removal of support systems.
- g. Support systems will be closely coordinated with the excavation of trenches and will extend to within 2 feet of the bottom of the trench, but only if the system is designed to resist the forces calculated for the full depth of trench, and there is no indication that there is a loss of soil from behind or below the bottom of the support system.
- F. Shield systems will not be subjected to loads exceeding their design capacity. Shields will be installed in a manner that restricts lateral or hazardous movement in the event of the application of a sudden lateral load. Employees will be protected when entering or exiting the areas protected by a shield. Employees will not be allowed in shields that are being installed, removed or moved vertically. When shield systems are used in trenches, excavation of material to a depth of not more than 2 feet below the bottom of the shield is permitted only if the shield is designed to resist the forces calculated for the full depth of trench, and there is no indication that there is a loss of soil from behind or below the bottom of the shield.

SOIL CLASSIFICATION

- This section describes a method of classifying soil and rock deposits based on site and environmental conditions and on the structure and composition of the earth deposits. This section contains definitions, establishes requirements and describes acceptable visual and manual tests for use in classifying soils.
- 2. This section applies and must be used when designing a sloping or benching system in accordance with Option 2 or 3 of Section C. 2. or a support or shield system in accordance with Option 1 or 2 of Section C. 3. of this program. A soil classification using this section is not necessary for excavations sloped at an angle of 1½ horizontal to 1 vertical or flatter.

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- 3. The classification of soil and rock deposits will be made based on the results of at least one visual and one manual analysis. These analyses will be conducted by a competent person using the tests described in this program or other approved methods of soil classification such as those adopted by the ASTM or the USDA.
- 4. The visual and manual analyses will be chosen and conducted to provide sufficient quantitative and qualitative information as may be necessary to identify properly the properties, factors and conditions affecting the classification of the deposits.
- When classifying a layered system, the classification is based on the weakest layer.
 However, each layer may be classified individually when a the more stable layer lies below a less stable layer.
- 6. If, after classifying a deposit, the properties, factors, or conditions change in any way, the changes will be evaluated by a competent person. The deposit will be reclassified, as necessary, to reflect the changed circumstances.
- 7. Visual analysis is conducted to collect qualitative information regarding the excavation site in general, the soil adjacent to the excavation, the soil forming the sides of the excavation and soil taken as samples from the excavated material. The visual analysis usually includes the following:
 - a. Observe samples of the soil that are excavated and soil in the sides of the excavation to estimate the range of particle sizes and the relative amounts of particle sizes. Fine-grained material is cohesive.
 - b. Observe the soil as it is excavated to determine if it stays in clumps. Soil that breaks up easily and does not stay in clumps is granular.
 - c. Observe the side of the opened excavation and the surface area adjacent to the excavation to identify tension cracks or fissured material.
 - d. Observe the area adjacent to the excavation and the excavation itself to identify existing underground utilities, structures or previously disturbed soils.
 - e. Observe the opened sides of the excavation to identify layered systems.
 Examine layered systems to determine if the layers slopes toward the excavation, if estimate the degree of slope in the layers.

- f. Observe the area adjacent to the excavation and the areas within the excavation to identify potential sources of vibration that may affect the stability of the excavation.
- 8. Manual analysis is conducted to collect quantitative as well as qualitative information regarding the properties of the soil and to provide more information in order to properly classify the soil. The manual analysis usually includes some or all the following:
 - a. Evaluate the soils plasticity by molding a moist or wet sample of soil into a ball and attempting to roll it into threads as thin as 1/8 of one inch in diameter.
 Cohesive soil can be rolled into thread at least 2 inches long without crumbling or breaking.
 - b. If the soil is dry and it crumbles on its own or with moderate pressure into individual grains or fine powder it is granular. If the soil is dry and falls into clumps, which break into smaller clumps, but the smaller clumps can only be broken up with difficulty, it may be clay in any combination with gravel, sand or silt. If the dry soil breaks into small clumps which can only be broken with difficulty, and there is no visual indication the soil is fissured, the soil may be considered un-fissured.
 - c. The thumb penetration test can be used to estimate the unconfined compressive strength of cohesive soils. Type A soils with an unconfined compressive strength of 1.5 tons per square foot (psf) can be readily indented by the thumb; however, they can be penetrated be the thumb only with very great effort. Type C soils with an unconfined compressive strength of 0.5 tsf can be easily penetrated several inches by the thumb and can be molded by light finger pressure. This test should be conducted on an undisturbed soil sample, such as a large clump of spoil, as soon as possible after excavation to keep to a minimum the effects of drying. If the excavation is later exposed to wetting influences (rain, flooding), the classification of the soil must be changed accordingly.
 - d. Estimates of the unconfined compressive strength of soils can also be obtained by using a pocket penetrometer or a hand operated shear-vane in accordance with the manufacturer's recommendations.

- e. A drying test can be used to differentiate between cohesive material with fissures, un-fissured cohesive material and granular material. The procedure for the drying test involves drying a sample of soil that is approximately one inch thick and six inches in diameter until it is thoroughly dry:
 - (1) If the sample develops cracks as it dries significant fissures are indicated.
 - (2) Samples that dry without cracking are to be broken by hand. If considerable to break the sample, the soil has significant cohesive material content. The soil can be classified as un-fissured cohesive material and the unconfined compressive strength should be determined.
 - (3) If the sample breaks easily by hand, it is either a fissure cohesive material or granular material. To distinguish between the two, pulverize the dried clumps of the sample by hand or by stepping on them. If the clumps do not pulverize easily, the material is cohesive with fissures. If they pulverize easily into very small fragments, the material is granular.

SLOPING AND BENCHING

- This section contains the specifications for sloping and benching when used as a method of protecting employees working in excavations. THESE SLOPE AND BENCH SPECIFICATIONS ONLY APPLY IF A SOIL CLASSIFICATION HAS BEEN CONDUCTED.
- 2. The maximum allowable slope based on the soil classification will be determined using the following table:

MAXIMUM ALLOWABLE SLOPES

SOIL OR ROCK TYPE	MAXIMUM ALLOWABLE SLOPES (H:V)(1)			
	FOR EXCAVATIONS LESS THAN 20 FEET DEEP (3)			
STABLE ROCK	VERTICAL (90 DEGREES)			
TYPE A (2)	34: 1 (53 DEGREES)			
ТҮРЕ В	1: 1 (45 DEGREES)			
ТҮРЕ С	1-1/2: 1 (34 DEGREES)			

NOTES:

- a. The numbers shown in parentheses are angles expressed in degrees from the horizontal. The angles have been rounded off.
- b. A short-term slope of 1/2: 1 (63 degrees) is allowable in excavations in Type A soil less than 12 feet deep. Short-term slope of $\frac{3}{2}$: 1 (53 degrees) is allowable in excavations in Type A soil deeper than 12 feet deep but less than 20 feet deep.
- A registered professional engineer will design sloping or benching for excavations c. deeper than 20 feet.
- 3. Allowable slope or configuration bench based on the soil classification will be determined using the following figures:




THESE CONFIGURATIONS MAY ONLY BE USED IN TYPE A SOIL



ALUMINUM HYDRAULIC SHORING

 This section contains the specifications for aluminum hydraulic shoring when used as a method of protecting employees working in excavations. THESE SHORING SPECIFICATIONS ONLY APPLY IF A SOIL CLASSIFICATION HAS BEEN CONDUCTED. 2. The maximum allowable spacing of aluminum hydraulic shoring components based on the soil classification and the depth of the excavation will be determined using the following tables:

VERTICAL SHORES FOR TYPE A SOIL

Hydraulic Cylinders

DEPTH OF TRENCH (FEET)	MAXIMUM HORIZONTAL SPACING (FEET)	MAXIMUM VERTICAL SPACING (FEET)	WIDTH OF TRENCH (FEET) UP TO 8	WIDTH OF TRENCH (FEET) OVER 8 UP TO 12	WIDTH OF TRENCH (FEET) OVER 12 UP TO 15
OVER 5 UP TO	8				
10					
OVER 10 UP TO	8				
15		4	2 INCH DIAMETER	2 INCH DIAMETER	3 INCH DIAMETER
OVER 15 UP TO	7			NOTE (2)	
20					
OVER 20	NOTE (1)	•	•	•	•

VERTICAL SHORES FOR TYPE B SOIL

Hydraulic Cylinders

DEPTH OF TRENCH (FEET)	MAXIMUM HORIZONTAL SPACING (FEET)	MAXIMUM VERTICAL SPACING (FEET)	WIDTH OF TRENCH (FEET) UP TO 8	WIDTH OF TRENCH (FEET) OVER 8 UP TO 12	WIDTH OF TRENCH (FEET) OVER 12 UP TO 15
OVER 5 UP TO	8				
OVER 10 UP TO 15	6.5	4	2 INCH DIAMETER	2 INCH DIAMETER	3 INCH DIAMETER
OVER 15 UP TO 20	5.5			NOTE (2)	
OVER 20	NOTE (1)				

WHALER SYSTEM FOR TYPE B SOIL

DEPTH OF	WHALES	HYDRAULIC CYLINDERS						TIMBER UPRIGHTS			
TRENCH	VERT.	SECTION	WIDTH OF TRENCH (FEET)						HORIZONTAL SPACING		
(FEET)	(FEET) SPACE		UP TO 8		8 TO 12		12 TO 15				
	(1221)	(114)(3)	HOR.	CYL.	HOR.	CYL.	HOR.	CYL.	SOLID	2 FEET	3 FEET
			SPACE	DIA.	SPACE	DIA.	SPACE	DIA.	SHEET		
		3.5	8.0	2 IN	8.0	2 IN	8.0	3 IN			
OVER 5 UP	4					(2)					3 X 12
TO 10		7.0	9.0	2 IN	8.0	2 IN	9.0	3 IN			
						(2)					
		14.0	12.0	3 IN	12.0	3 IN	12.0	3 IN			
		3.5	6.0	2 IN	6.0	2 IN	6.0	3 IN			
OVER 10	4					(2)				3 X 12	
UP TO 15		7.0	8.0	3 IN	8.0	3 IN	8.0	3 IN			
		14.0	10.0	3 IN	10.0	3 IN	8.0	3 IN			
		3.5	5.5	2 IN	5.5	2 IN	5.5	3 IN			
O VER 15	4					(2)			3 X 12		
UP TO 20		7.0	6.0	3 IN	6.0	3 IN	6.0	3 IN			
		14.0	9.0	3 IN	9.0	3 IN	9.0	3 IN			
OVER 20	NOTE (1)										

DEPTH OF	WHALES	HYDRAULIC CYLINDERS						TIMBER UPRIGHTS				
TRENCH	NCH VERT. SECTION			WIDTH OF TRENCH (FEET)						HORIZONTAL SPACING		
(FEET)	EET) SPACE		UP TO 8		8 TO 12		12 TO 15					
	(FEET)	(114)(3)	HOR.	CYL.	HOR.	CYL.	HOR.	CYL.	SOLID SHEET	2 FEET	3 FEET	
		3.5	6.0	2 IN	6.0	2 IN	6.0	3 IN				
OVER 5 UP	4	5.5	0.0	2	0.0	(2)	0.0	5	3 X 12			
TO 10		7.0	6.5	2 IN	6.5	2 IN (2)	6.5	3 IN	-			
		14.0	10.0	3 IN	10.0	3 IN	10.0	3 IN	-			
01/50.40		3.5	4.0	2 IN	4.0	2 IN	4.0	3 IN	0 Y 40			
OVER 10	4					(2)			3 X 12			
UP TO 15		7.0	5.5	3 IN	5.5	3 IN	5.5	3 IN	-			
		14.0	8.0	3 IN	8.0	3 IN	8.0	3 IN				
		3.5	3.5	2 IN	5.5	2 IN	3.5	3 IN				
O VER 15	4					(2)			3 X 12			
UP TO 20		7.0	5.0	3 IN	5.0	3 IN	5.0	3 IN				
		14.0	6.0	3 IN	6.0	3 IN	6.0	3 IN				
OVER 20	NOTE (1)	•	•	•	•	•	•	•	•	•	•	

WHALER SYSTEMS FOR TYPE C SOIL

3. The following footnotes apply to all of the aluminum hydraulic shoring tables:

- a. For trenches deeper than 20 feet will be constructed and maintained in accordance with the design prepared by a registered professional engineer.
- b. 2-inch diameter cylinders, at this width, must have structural steel tube (3.5X3.5X0.1875) over-sleeves, or structural over-sleeves of manufacturer's specification, extending the full, collapsed length.
- c. Hydraulic cylinders must have at least the following capacities:
 - (1) 2-inch cylinders will be a minimum 2-inch inside diameter with a safe working capacity of not less than 18,000 pounds axial compressive load at maximum extension. Maximum extension is to include full range of cylinder extensions as recommended by product manufacturer.
 - (2) 3-inch cylinders will be a minimum 3-inch inside diameter with a safe working capacity of not less than 30,000 pounds axial compressive load at maximum extension. Maximum extension is to include full range of cylinder extensions as recommended by product manufacturer.
- d. All spacing indicated is measured center to center.

- e. Vertical shoring rails will have a minimum section modulus of 0.40 inch.
- f. When vertical shores are used, there must be a minimum of three shores spaced equally, horizontally, in a group.
- g. Plywood will be 1.125 thick inches thick of wood or 0.75 inch thick, 14 ply, Arctic white birch (Finland form). Plywood is not intended as a structural member, but only for prevention of local raveling (sloughing of the trench face) between the shores.
- h. Timber specified in the tables is selected Douglas fir with a bending strength of not less than 1500 psi. The dimensions given are actual not nominal.
- i. Whalers are calculated for simple span conditions.
- j. The following are limits on the application of the shoring tables:
 - (1) It is not intended that these tables apply to every situation that may be experienced in the field. Shoring systems for use in situations not covered by these tables must be designed be a registered professional engineer.
 - (2) When any of the following conditions are present, the members specified in the tables are not adequate, and an alternate system must be designed by a registered professional engineer:
 - (a) When loads imposed by structures or by stored material adjacent to the trench weigh than the load imposed by a two-foot soil surcharge. The term "adjacent" as used here means the area within a horizontal distance from the edge of the trench equal to the depth of the trench.
 - (b) When vertical loads imposed on cross braces exceed a 240-pound gravity load distributed on a one-foot section of the center of the cross brace.
 - (c) When surcharge loads are present from equipment weighing more than 20,000 pounds.

(d) When only the lower portion of the trench is shored and the remaining portion of the trench is sloped or benched unless: the slopped portion is sloped at an angle less steep than 3:1 or the members are selected from the tables for use at a depth which is determined from the top of the overall trench, and not from the toe of the sloped portion.

DEFINITIONS THAT APPLY TO THIS SUPPLEMENT

ALUMINUM HYDRAULIC SHORING. A pre-engineered shoring system comprised of aluminum hydraulic cylinders (cross braces) use in conjunction with vertical rails (uprights) or horizontal rails (whalers). Such a system is designed specifically to support the sidewalls of an excavation and prevent cave-ins.

BENCHING. A method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal steps, usually with vertical or near vertical surfaces between levels.

CAVE-IN. The separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.

CEMENTED SOIL. A soil in which the particles are held together by a chemical agent, such as calcium carbonate, such that a hand-size sample cannot be crushed into powder or individual particles by finger pressure.

COHESIVE SOIL. Clay (fine grained soil), or soil with a high clay content, which has cohesive strength. Cohesive soil does not crumble, can be excavated with vertical side slopes and is plastic when moist. Cohesive soil is hard to break up when dry and exhibits significant cohesion when submerged. Cohesive soils include clayey silt, sandy clay, silty clay, clay and organic clay.

EXCAVATION. Any man-made cut, cavity, trench or depression in the earth surface, formed by earth removal.

FACES OR SIDES. The vertical or inclined earth surfaces formed because of excavation work.

FISSURED. A soil material that tends to break along definite planes of fracture with little resistance or material that exhibits open cracks, such as tension cracks, in as exposed surface.

GRANULAR SOIL. Gravel, sand or silt (coarse grained soil) with little or no clay content. Granular soil has no cohesive strength. Some moist granular soils exhibit apparent cohesion. Granular soil cannot be molded when moist and crumbles easily when dry.

HAZARDOUS ATMOSPHERE. An atmosphere which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic or otherwise harmful, may cause death, illness or injury.

LAYERED SYSTEM. Two or more distinctly different soil or rock types arranged in layers. Micaceous seams or weakened planes in rock or shale are considered layered.

PROTECTIVE SYSTEM. A method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems and other systems that provide the necessary protection.

REGISTERED PROFESSIONAL ENGINEER. A person who is registered as a professional engineer in the state where the work is being performed. However, a professional engineer, registered in any state is deemed a "registered professional engineer" within the meaning of this standard when approving designs for manufactured protective systems or tabulated data used in interstate commerce.

SHIELD. A structure that can withstand the forces imposed on it by a cave-in and thereby protects employees within the structure. Shields can be permanent structures or can be designed to be portable and moved along as the work progresses. Shields can be pre-manufactured or job-built in accordance with section III. C. of this program.

SHORING. A structure such as a metal hydraulic, mechanical or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins.

SLOPING. A method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences in such factors as the soil type, environmental conditions of exposure and application of surcharge loads.

STABLE ROCK. Natural solid mineral material that can be excavated with vertical sides and will remain intact while exposed. Unstable rock is considered stable when the rock material on the side or sides of the excavation is secured against caving-in or movement by rock bolts or by another protective system that has been designed by registered professional engineer.

TABULATED DATA. Tables and charts approved a registered professional engineer and used to design and construct a protective system.

TRENCH. A narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet. If forms or other structures are installed to reduce the dimensions measured from the forms or structure to the side of the excavation to 15 feet or less, an excavation is considered a trench.

TYPE A SOIL. Cohesive soils with an unconfined compressive strength of 1.5 ton per square foot (psf) or greater. Examples of cohesive soils are: clay, silty clay. sandy clay, clay loam and, in some cases, silty clay loam and sandy clay loam. Cemented soils such as caliche and hardpan are also considered Type A. However, no soil is Type A if:

- (1) The soil is fissured; or
- (2) The soil is subject to vibration from heavy traffic, pile driving or similar effects; or
- (3) The soil has been previously disturbed; or
- (4) The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater; or
- (5) The material is subject to other factors that would require it to be classified as a less stable material.

TYPE B SOIL. Cohesive soil with an unconfined compressive strength greater that 0.5 tsf but less than 1.5 tsf; or Granular non-cohesion soils including: angular gravel (similar to crushed rock), silt, silt loam, sandy loam and in some cases, silty clay loam and sandy clay loam; or. Previously disturbed soils except those which would otherwise be classed as Type C soil; or, Soil that meet the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration; or, Dry rock that is not stable; or, Material that is part of a sloped, layered system where the layers dip into the excavation on a slope less steep than four horizontal to one vertical (4H:1V), but only if the material would otherwise be classified as Type B.

TYPE C SOIL. Cohesive soil with an unconfined compressive strength of 0.5 tsf or less; or, Granular soils including gravel, sand and loamy sand; or, Submerged soils including soil from which water is freely seeping; or, Submerged rock that is not stable; or, Material in a sloped, layered system where the layers dip into the excavation at a slope of four horizontal to one vertical (4H:1V) or steeper.

UNCONFINED COMPRESSIVE STRENGTH. The load per unit area at which a soil will fail in compression. It can be determined by laboratory testing, or estimated a pocket penetrometer, by thumb penetration and other methods.

UPRIGHTS. The vertical members of a trench shoring system placed in contact with the earth and usually positioned so that individual members do not contact each other. Uprights placed so that individual members are closely spaced, in contact with or interconnected to each other, are often called "sheeting."

WHALERS. Horizontal members of a shoring system placed parallel to the excavation face whose sides bear against the vertical members of the shoring system or the earth.

FALL PREVENTION / PROTECTION

INTRODUCTION

- These guidelines establish the minimum fall prevention and protection requirements for all employees working at or over 4 feet above the ground or the next lower level. They contain requirements for fall protection from structures, ladders, scaffolds and aerial lifts. Fall protection may be required at lower levels if employees are exposed to falls.
- 2. The intent of these guidelines is to prevent employees from falling off, onto or through working levels and to provide protection from falling objects.
- 3. The methods found in this guideline are not the only methods by which protection can be achieved, and these guidelines and systems do not provide protection for every situation encountered in the workplace.
- 4. When different or unique applications arise, these guidelines can be used for basic information. If you are not sure how to use these guidelines or think you have a better alternative please, contact the project manager or safety.

GENERAL REQUIREMENTS

- 1. We must determine whether walking/working surfaces can support workers safely. All required fall protection systems are to be provided and installed and employees trained before commencing the work that requires fall protection.
- 2. Employees on walking/working surfaces with unprotected sides or edges 4 feet or higher above a lower level must be prevented from falling by using a Guardrail System, a Safety Net System, a Personal Fall Arrest System or a Positioning Device System. These requirements apply to all elevated walking and working surfaces, including Leading Edges, Hoist Areas, Holes, the face of Formwork and Reinforcing Steel, Ramps, Walkways, areas above or next to Dangerous Equipment, Scaffolding, Roofs, Precast Concrete Structures, Overhand Bricklaying and Wall Openings, where the hazard of falls is present.
 - Regardless of height, employees shall be protected from falling into or onto impalement hazards such as: reinforcing steel (rebar) or exposed steel or wood stakes; etc.

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- b. When fall hazards of 10 feet or more to the ground or lower level exists a written fall protection work plan must be developed and implemented and include:
 - (1) Identification of all fall hazards in the area.
 - (2) Describe the method of fall arrest or restraint to be provided.
 - (3) Describe the proper procedures for the assembly, maintenance, inspection, and disassembly of the fall protection system to be used.
 - (4) Include the proper handling and storage and securing of tools and materials.
 - (5) Detail the method of providing overhead protection for workers.
 - (6) Describe the method for prompt, and safe removal of injured workers.
 - (7) Be available on the job site for review by governing agencies and others as appropriate.
- 3. When it is infeasible or creates a greater hazard to install conventional fall protection systems to protect employees working on a Leading Edge, engaged in Precast Concrete Erection or Residential Construction, a site-specific Fall Protection Plan may be developed and carried out.
- 4. When fall protection is required on Low Slope Roofs, conventional fall protection systems may be used alone or in any of the following combinations:
 - a. Warning lines and guardrails.
 - b. Warning lines and safety nets.
 - c. Warning lines and personal fall arrest systems.
 - d. Warning lines and a safety monitoring system. On Low Slope Roofs 50 feet or less in width, a Safety Monitoring System may be used alone.

- 5. When employees are working below an elevated work area and toe boards do not provide sufficient protection from falling objects, screens, mesh or canopies must be installed for a distance sufficient to protect employees below.
- 6. Where tools, equipment, or materials are piled higher than the top edge of a toe board, paneling or screening must be erected from the walking/working surface or toe board to the top of a guardrail system's top rail or mid rail, for a distance sufficient to protect employees below.
- 7. When canopies are used as falling object protection, they must be strong enough to prevent collapse and penetration by any objects that may fall onto the canopy.

FALL PROTECTION SYSTEMS and PRACTICES

- 1. When used for fall protection, Guardrail Systems must consist of Top Rails, Mid Rails, Toe boards and Posts erected or constructed according to the following requirements:
 - a. The top edge height of top rails, or equivalent guardrail system members, must be 42 to 45 inches above the walking/working level.
 - b. The mid Rails must be installed at a height midway between the top edge of the guardrail system and the walking/working level.
 - c. The posts must be spaced at 8 feet or closer distance.
 - d. The toe boards must be at least 3½ inches in height and must be installed within ¼ inch of the walking/working surface.
 - e. Guardrail systems must be capable of withstanding, without failure, a force of at least 200 pounds applied within 2 inches of the top edge, in any outward or downward direction at any point along the top edge.
 - f. Mid Rails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members must be capable of withstanding, without failure, a force of at least 150 pounds applied in any downward or outward direction at any point along the Mid Rail or other member.

- g. Toe boards must be capable of withstanding, without failure, a force of at least
 50 pounds applied in any downward or outward direction at any point along the toe board.
- h. Guardrail systems must be surfaced as to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.
- i. The ends of all Top Rails and Mid Rails must not overhang the terminal post, except where they do not cause a projection hazard.
- j. There are several combinations of materials that may be used to construct guardrail systems. When constructed according to the height, strength and spacing requirements outlined above; the following combinations are acceptable:
 - Wooden guardrails must be made of Selected Grade lumber free of damage. The Top Rails and Posts must be at least 2 inches by 4 inches (nominal), the Mid Rails must be at least 1 inch by 6 inches.
 - (2). Pipe guardrails must be made of Schedule 40 pipe. The Top Rails, Mid Rails and Posts must be at least 1½ inch nominal diameter.
 - (3). Structural steel guardrails must be made of angle iron. The Top Rails, Mid Rails and Posts must be at least 2 inches by 2 inches by 3/8 inch angles.
 - (4). Wire rope may be substituted for top and Mid Rails but must be at least ¼ inch nominal diameter or thicker. If wire rope is used for top rails, it must be kept tight enough so that a 200-pound load will not deflect the line to less than 39 inches above the walking/working surface. Wire rope top rails must be flagged with high-visibility material at 6-foot intervals.
- 2. When used for fall protection, Safety Net Systems must be installed or erected according to the following requirements:
 - a. Safety nets must be installed, moved, altered or removed under the direct supervision of a competent person.

- Safety nets must be installed as close as practicable under the walking/working surface on which employees are working, but never more than 30 feet below, and the potential fall area to the net must be unobstructed.
- c. Safety nets must extend outward from the outermost projection of the work surface as follows:

Vertical Distance from Working	Minimum Required Horizontal
Level to Horizontal Plane of Net	Distance of Outer Edge of Net From The Edge of the Working Surface
Up to 5 feet	8 feet
More than 5 feet up to 10 feet	10 feet
More than 10 feet	13 feet

- d. Safety nets must be installed with sufficient clearance under them to prevent contact with the surface or structures below, when subjected to the drop test.
- e. Safety nets and their installation must be drop tested at the jobsite after initial installation and before being used as a fall protection system, whenever moved, after major repair and at 6-month intervals, if left in one place.
- f. The drop test must consist of a 400-pound bag of sand, 30 (plus or minus 2) inches in diameter, dropped into the net from the highest walking/working surface at which employees are exposed to the fall hazard, but not from less than 42 inches above that level.
- g. If doing the drop test is unreasonable, a competent person must certify that the net and its installation will provide sufficient clearance and will absorb an impact force equal to that of the drop test before the net is used as a fall protection system. The certification must include all the following:
 - (1). An identification of the net and its installation.
 - (2). That it was installed correctly.
 - (3). The date of installation.

(4). The name and signature of the person making the certification.

A copy of the certification must be kept at the jobsite for inspection.

- Safety nets and their components must be inspected by a competent person at least once per week for wear, damage and other deterioration. Additionally, an inspection must be made after any occurrence that affects the system's integrity.
- The maximum size of each net mesh opening must not exceed 36 square inches or be longer than 6 inches on any side, and the opening, measured center-to-center of mesh ropes or webbing, must not be longer than 6 inches. All mesh crossings must be secured to prevent enlargement of the openings.
- j. Each net must have a border rope for webbing, with a minimum breaking strength of 5,000 pounds.
- k. Connections between net panels must be as strong as integral net components and must be spaced not more than 6 inches apart.
- I. Materials, scrap pieces, equipment and tools that have fallen into the system must be removed as soon as possible and at least before the start of the next shift.
- 3. When used for fall protection Personal Fall Arrest and Positioning Device Systems must be used according to the following requirements:
 - Body harnesses and all associated attachments must be labeled and meet the requirements in ANSI Z 359.1 -1992. A body belt must not be used as part of a fall arrest system.
 - Connectors must be drop forged, pressed or formed steel or made of materials of equivalent strength. They must have a corrosion resistant finish and their surfaces and edges must be smooth to prevent damage to other system components.
 - c. D rings and snap hooks must have a minimum tensile strength of 5,000

pounds. They must have been proof tested by the manufacturer to a minimum tensile load of 3,600 pounds without cracking, breaking or permanent deformation.

- d. Snap hooks must be of the locking type, sized to fit with the member to which they connect and designed and used to prevent disengagement.
- e. Horizontal lifelines must be designed, installed and used under the supervision of a qualified person, as part of a complete personal fall arrest system, which maintains a safety factor of at least two. On work platforms where, because of an accident, a horizontal lifeline may become vertical, the device (such as a rope grab) used to connect to the lifeline can lock in both directions.
- f. Ropes and straps used in lanyards, lifelines and components of body harnesses must be made from synthetic fibers. Lanyards and vertical lifelines must be protected against cuts or abrasion and have a minimum breaking strength of 5,000 pounds. When using vertical lifelines each employee must use a separate lifeline.
- g. Self-retracting lifelines and lanyards that automatically limit free fall distance to
 2 feet or less must be capable of sustaining a minimum tensile load of 3,000
 pounds applied to the device with the lifeline or lanyard in the fully extended
 position.
- Self-retracting lifelines and lanyards that limit free fall distance to 2 feet or less, rip stitch lanyards, and tearing and deforming lanyards must 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.
- Anchorages used for attachment of personal fall arrest equipment must be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds per employee attached.
- j. Personal fall arrest systems, when stopping a fall, must do all the following:
 - (1). Limit maximum arresting force on an employee to 1,800 pounds.

- (2). Be rigged so that an employee cannot free fall more than 6 feet or contact any lower level.
- (3). Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3½ feet.
- (4). Have enough strength to withstand twice the potential impact energy of an employee free falling 6 feet or the free fall distance allowed by the system, whichever is less.
- k. The attachment point of a body harness used for fall protection must be in the center of the back near shoulder level or above the head.
- I. Harnesses and other fall arrest equipment may never be used for hoisting materials.
- Fall arrest systems and components subjected to impact loading must be immediately removed from service and not used until inspected and determined by a competent person to be undamaged and suitable for service.
- n. Rescue plans must be made for a prompt rescue of employees in case of a fall, unless it has been determined that employees can rescue themselves.
- Personal fall arrest systems must be inspected before each use, for wear, damage or other deterioration. Defective components must be removed from service.
- p. Personal fall arrest systems must not be attached to guardrail systems.
- q. When personal fall arrest systems are used at hoist areas they must be rigged to allow the movement of the employee only to the edge of the working surface.
- r. Positioning devices must be rigged such that an employee cannot free fall more than 2 feet and 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.
- s. All fall protection arresting and descent control and rescue equipment shall be approved and sued in accordance with the manufacturer's recommendations.

FALL PROTECTION PLAN OPTION

- 1. Fall protection plan option may only be used when employees are engaged in Leading Edge Work, Precast Concrete Erection Work, or Residential Work and we can demonstrate that it is infeasible, or it creates a greater hazard to use conventional fall protection equipment. OSHA considers conventional fall protection systems feasible and believes they do not create a greater hazard. If we decide to use a fall protection plan, we must document our decision.
- 2. The fall protection plan must be prepared by a qualified person and developed specifically for the site where the work is being done and the plan must be maintained up to date. The sample Fall Protection Plan (attached) may be used as a guideline when preparing a site-specific plan.
- 3. At a minimum, the fall protection plan must contain the following information:
 - a. Reasons why conventional fall protection systems are infeasible or would create a greater hazard.
 - b. A written discussion of other measures to be taken to reduce or eliminate the fall hazard (scaffolds, ladders, aerial lifts, etc.).
 - c. Location where conventional fall protection measures cannot be used.These locations must then be classified as Controlled Access Zones CAZ).
 - d. The names or other methods of identifying each employee designated to work in a CAZ. Only those designated employees may enter a CAZ.
 - e. Where no other alternative measure has been carried out, a safety monitoring system must be carried out.
- 4. A copy of the fall protection plan must be maintained at the jobsite whenever conventional fall protection systems are not being used.
- 5. The application of the fall protection plan must be under the supervision of a competent person.

CONTROLLED ACCESS ZONES

- 1. When Controlled Access Zones (CAZ) are used to control access to areas where Leading Edge, Precast Concrete Erection or Overhand Bricklaying or related work is taking place, the CAZ must be defined by a control line or by another means that restricts access.
- 2. When used to control access to areas where Leading Edge and other operations are taking place, the control lines must be erected not less than 6 feet or more than 25 feet from the unprotected or leading edge.
- When Erecting Precast Concrete Members, the control line is to be erected not less than 6 feet or more than 60 feet, or half the length of the member being erected, whichever less, from the leading edge.
- 4. When used to control access on Leading Edge or Precast Concrete Erection, the control line must extend along the entire length of the unprotected or leading edge and be approximately parallel to the unprotected or leading edge and be connected on each side to a guard rail system or wall.
- 5. When used to control access to areas where Overhand Bricklaying and related work are taking place, the control lines must be erected not less than 10 feet or more than 15 feet from the working edge.
- 6. When used to control access to areas where Overhead Bricklaying and related work are taking place, the control line must extend a sufficient distance to enclose the employees and be approximately parallel to the working edge.
- 7. Control lines must consist of ropes, wires, tapes, or equivalent materials with a minimum breaking strength of 200 pounds and be rigged and supported so that the line is between 39 and 45 inches above the walking/working surface.
- 8. Control lines must be flagged or otherwise clearly marked with high-visibility material at intervals of not more than 6 feet.

WARNING LINE SYSTEM

- 1. If used, a warning line must be erected around all the unguarded sides of the work area.
- 2. Warning lines must consist of ropes, wires or chains with a tensile strength of 500 pounds supported by stanchions so that the line is between 34 and 39 inches above the walking/working surface. Warning lines must be flagged or otherwise clearly marked with high-visibility material at intervals of not more than 6 feet.
- Warning line stanchions, if used, must be erected so that they resist, without tipping over, a force of at least 16 pounds applied horizontally outward against the stanchion, 30 inches above the walking/working surface.
- 4. When mechanical equipment is not used, the warning lines must be erected at least 6 feet from the roof edges. If mechanical equipment is used, the warning lines must be at least 6 feet from the edge that is parallel to the direction of mechanical equipment operation and at least 10 feet from the edges perpendicular to the direction of mechanical equipment operation.
- 5. Points of access, material handling areas, storage areas and hoisting areas must be connected to the work area by an access path formed by two warning lines. When the path is not in use, it must be closed with a warning line or barricade or be offset to prevent employees from walking directly into the work area.

SAFETY MONITORING SYSTEMS

- 1. Safety monitoring systems may only be used when employees are engaged in activities on low-slope or horizontal systems or as part of a written fall protection plan.
- 2. When a safety monitoring system is used, a competent person, capable of recognizing fall hazards, must be designated as Safety Monitor.
- 3. The Safety Monitor's duties include:
 - a. Warning employees when they are approaching the open edge unsafely.

- b. Warning employees if a dangerous situation is developing that cannot be seen by the CAZ Workers.
- c. Making the CAZ Workers aware they are in a dangerous area.
- d. Warning employees that seem unaware of a hazard or are acting unsafely.
- e. Stopping the work process if he is unable to speak with the CAZ Workers.
- 4. The Safety Monitor must not have other responsibilities that could take his or her attention from these functions.
- 5. Mechanical equipment may not be used or stored in areas where safety-monitoring systems are being used to monitor employees.
- 6. Employees working in a CAZ must be instructed to comply with fall hazard warnings from Safety Monitors.

HOLES/COVERS

- 1. Covers for holes in floors, roofs, and other walking/working surfaces must meet the following requirements:
 - a. Covers located in roadways and vehicular aisles must be capable of supporting, without failure, at least twice the maximum axle load of the largest vehicle expected to cross over the cover.
 - b. All other covers must be capable of supporting without failure, at least twice the weight of employees, equipment, and materials that may be set on the cover.
 - c. All covers must be secured when installed to prevent accidental displacement by the wind, equipment, or employees.
 - d. All covers must be color-coded or they must be marked with the word "HOLE" or "COVER" to provide warning of the hazard.

TRAINING REQUIREMENTS

- 1. Each employee who might be exposed to fall hazards must be trained by a competent person qualified in the following areas:
 - a. The nature of fall hazards in the work area.
 - b. The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.
 - c. The use and operation of guardrails, personal fall arrest, safety net warning line, safety monitoring systems, CAZs and other protection used.
 - d. The role of employees when using a safety monitoring system.
 - e. The limitations on the use of mechanical equipment during the performance of work on low-sloped systems.
 - f. The correct procedures for handling and storage of equipment and materials and the erection of overhead protection.
 - g. The role of employees in fall protection plans.
 - h. The federal and state regulations relating to this program.
- 2. A written certification record, containing the name of the employee trained, the name and signature of the person who conducted the training and the date training was completed must be maintained.
- 3. Retraining must be conducted when we think that any affected employee who has already been trained does not have the understanding and skill required in the training section listed above, and when changes in the fall protection systems, equipment or workplace render previous training obsolete.
- 4. Any near misses; actual falls; or accidents will be addressed according to the accident procedure in this Safety Manual.

DEFINITIONS THAT APPLY TO FALL PROTECTION

ANCHORAGE means a secure point of attachment for lifelines, lanyards or deceleration devices.

BODY HARNESS means a design of straps that may be secured about the employee in a manner to distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders, with means for attaching it to other components of a personal fall arrest system.

CLEAT means a structural block used at the end of a platform to prevent the platform from slipping off its supports. Cleats are used to provide footing on sloped surfaces such as crawling boards or ramps. Cleat can also mean a ladder crosspiece of rectangular cross section placed on edge upon which a person may step while ascending or descending a ladder.

COMPETENT PERSON means one who can identify existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees and who has authorization to take prompt corrective measures to eliminate them.

CONNECTOR means a device used to couple (connect) parts of the personal fall arrest system and positioning device systems together. It may be an independent component of the system, such as a carabineer, or it may be an integral component of part of the system.

CONTROLLED ACCESS ZONE (CAZ) means an area in which certain work (e.g., leading edge) may take place without the use of conventional fall protection systems and access to the zone is controlled because of form or function, may be hazardous to employees who fall onto or into such equipment.

DECELERATION DISTANCE means the additional vertical distance a falling employee travels, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the location of an employee's body harness attachment point at the moment of activation (at the onset of fall arrest forces) of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop.

DOUBLE CLEAT LADDER means a ladder similar in construction to a single cleat ladder, but with a center rail to allow simultaneous two-way traffic for employees ascending or descending. EQUIVALENT means alternative designs, materials or methods to protect against a hazard that we can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the standard. FAILURE means load refusal, breakage, or separation of component parts. Load refusal is the point where the structural members lose their ability to carry the loads.

FIXED LADDER means a ladder that cannot be readily moved or carried because it is an integral part of a building or structure.

FREE FALL means the act of falling before a fall arrest system begins to apply force to stop the fall.

FREE FALL DISTANCE means the vertical displacement of the fall arrest attachment point on the employee's body harness between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance, and lifeline/lanyard elongation, but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.

GUARDRAIL SYSTEM means a vertical barrier, consisting of, but not limited to, top rails, mid rails, and posts, erected to prevent employees from falling off a scaffold, platform or walkway to lower levels.

HOLE means a gap or void 2 inches or more in its least dimension, in a floor, roof, or other walking/working surface.

INFEASIBLE means that it is impossible to perform the construction work using a conventional fall protection system (i.e., guardrail system, safety net system, or personal fall arrest system) or that it is technologically impossible to use any one of these systems to provide fall protection.

JOB-MADE LADDER means a ladder fabricated by employees, typically at the construction site, and not commercially manufactured.

LANDING means a platform installed at the end of a ladder to provide a safe location for employees to step off the ladder.

LANYARD means a flexible line of rope, wire rope, or strap that generally has a connector at each end for connecting a positioning belt or body harness to a deceleration device, lifeline, or anchorage.

LEADING EDGE means the edge of a floor, roof, or formwork for a floor or other walking/working surface (such as the deck) that changes location as additional floor, roof, decking, or formwork sections are placed, formed, or constructed. A leading edge is an "unprotected side and edge" during periods when it is not actively and continuously under construction.

LIFELINE means a component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline) or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

LOWER LEVELS means those areas below the level where the employee is to which an employee can fall. Such areas include ground levels, floors, roofs, ramps, runways, excavations, pits, tanks, material, water, equipment, and similar surfaces. It does not include the surface from which the employee falls.

LOW-SLOPE means a system having a slope less than or equal to 4 in 12 (vertical to horizontal).

MAXIMUM INTENDED LOAD means the total load of all persons, equipment, tools, materials, transmitted loads, and other loads reasonably anticipated to be applied to a ladder component, scaffold or scaffold component anytime.

MECHANICAL EQUIPMENT means all motor or human propelled wheeled equipment used for work, except wheelbarrows and mop carts.

OPEN SIDES AND ENDS means the edges of a scaffold or platform that are more than 14 inches away horizontally from a sturdy, continuous, vertical surface (such as a building wall) or a sturdy, continuous horizontal surface (such as a floor), or a point of access.

OPENING means a gap or void 30 inches or more high and 18 inches or more wide, in a wall or partition, through which employees can fall to a lower level.

OVERHAND BRICKLAYING AND RELATED WORK means the process of laying bricks and masonry units such that the surface of the wall to be jointed is on the opposite side of the wall from the mason, requiring the mason to lean over the wall to complete the work. Related work includes mason tending and electrical installation incorporated into the brick wall during the overhand bricklaying process. PERSONAL FALL ARREST SYSTEM means a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body belt or body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.

PLATFORM means a work surface elevated above lower levels.

POSITIONING DEVICE SYSTEM means a body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning back against the belt or harness.

PORTABLE LADDER means a ladder that can be readily moved or carried.

QUALIFIED means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.

ROPE GRAB means a deceleration device that travels on a lifeline and automatically, by friction, engages the lifeline and locks to arrest the fall of an employee.

SAFETY-MONITORING SYSTEM means a safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.

SCAFFOLD means any temporary elevated platform (supported or suspended) and its supporting structure (including points of anchorage) used for supporting employees or materials or both.

SCAFFOLD GRADE LUMBER means Douglas fir graded for scaffold plank use under standards as high as those followed by the West Coast Lumber Inspection Bureau or by the Western Wood Products Association as suitable for a bending stress of at least 1,910 pounds per square inch (psi).

SELECTED GRADE LUMBER means Douglas fir graded under standards as high as those followed by the West Coast Lumber Inspection Bureau or by the Western Wood Products Association as suitable for a bending stress of 1,500 pounds per square inch (psi). SELF-RETRACTING LIFELINE/LANYARD means a deceleration device containing a drum-wound line that can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, which, after the onset of a fall, automatically locks the drum and arrests the fall.

SINGLE CLEAT LADDER means a ladder consisting of a pair of side rails, connected by cleats, rungs, or steps.

SNAP HOOK means a connector consisting of a hook-shaped member with a normally closed keeper, or similar arrangement, that may be opened to allow the hook to receive an object and, when released, automatically closes to retain the object.

STEEP means a surface having a slope greater than 4 in 12 (vertical to horizontal).

TOE BOARD means a low protective barrier that will prevent the fall of materials and equipment to lower levels.

UNPROTECTED SIDES AND EDGES means any side or edge (except at entrances to points of access) of a walking/working surface 4 feet or higher above where there is no guardrail system, safety net system or personal fall arrest system.

UNSTABLE OBJECTS means items whose strength, configuration, or lack of stability may allow them to become dislocated and shift and therefore may not properly support the loads imposed on them.

WALKING/WORKING SURFACE means any surface, whether horizontal or vertical on which an employee walks or works, including, but not limited to, scaffolds, platforms, floors, roofs, ramps, bridges, runways, formwork and concrete reinforcing steel, on which employees walk or stand in order to perform their jobs. Walking/working surfaces do not include ladders or vehicles.

WARNING LINE SYSTEM means a barrier erected on a low-slope roof to warn employees that they are approaching an unprotected roof side or edge, which designates an area in which roofing work may take place without the use of conventional fall protection systems.

WORK AREA means that portion of a walking/working surface where job duties are being performed.

SAMPLE FALL PROTECTION PLAN

A fall protection plan can only be used for operations involving Leading Edge Work, Precast Concrete Construction Work or Residential Construction Work, where we can demonstrate that it is infeasible or creates a greater hazard to use conventional fall protection systems. Each fall protection plan must be site specific. This sample plan outlines the elements that must be addressed in a fall protection plan.

Fall Protection Plan

This Fall Protection Plan is specific for the following project:

Location of job ______ Erecting Company ______

Date Plan Prepared or Modified______ Plan Prepared By: _____

It is the responsibility of _______ to carry out this fall protection plan. Supervisors are also responsible for inspecting and correcting any unsafe acts or conditions immediately. Each employee is responsible for understanding and following the procedures of this plan and for following the instructions of a supervisor. Employees must also report any unsafe or hazardous conditions or acts. Any charges to this Fall Protection Plan must be approved in writing by ______.

REASONS FOR FALL PROTECTION PLAN

The following is a written explanation of why the use of conventional fall protection systems are infeasible or create a greater hazard.

Guardrail systems are not being used because:

Personal Fall Arrest Systems are not being used because:

Safety Net Systems are not being used because:

OTHER FALL PROTECTION MEASURES CONSIDERED FOR THIS PROJECT

The following is a list of other fall protection measures considered and an explanation of the limitations for their use on this project. If during this project any employee sees an area that could be erected more safely by these conventional fall protection measures, the supervisor should be notified.

Scaffolds are not being used because:

Ladders are not being used because:

Vehicle mounted platforms are not being used because:

Crane suspended personnel platforms are not being used because:

SPECIFIC AREAS COVERED BY THIS FALL PROTECTION PLAN

This fall protection plan addresses the use of other than conventional fall protection at some specific areas on the project. This section identifies specific activities that require other means of fall protection. Each of these areas will be identified as a Controlled Access Zone (CAZ). These include:

Connecting activity (point of erection) at:

Leading edge work at:

Unprotected sides or edges at:

FALL PROTECTION SYSTEMS TO BE USED ON THIS PROJECT

1. Controlled Access Zone System

Each of the work areas identified in Section 3 above will be identified as a Controlled Access Zone (CAZ). Each of those areas will comply with the following provisions:

The CAZ will be defined by a control line or by any other means that restricts access. The control line will extend along the entire length of the unprotected or leading edge and must be approximately parallel to the unprotected or leading edge. The control line will be connected on each side to a guardrail system or wall. Control lines will consist of ropes, wires, or other materials with a breaking strength of at least 200 pounds and be rigged and supported on stanchions so the line between 39 and 45 inches above the walking /working surface. Each line will be flagged or otherwise clearly marked at not more than 6-foot intervals with high-visibility material.

Where we have identified controlled access zones, we will expose only those employees necessary to safely accomplish the job. The maximum number of workers allowed inside any one Controlled Access Zone is _____. We are identifying the following trained employees as CAZ Workers. Only these workers are allowed to enter the controlled access zones and work without the use of conventional fall protection.

CAZ Workers:

These CAZ Workers will be identified by:

2. Safety Monitoring System

Where no other fall protection system can be used, we plan to do this work using a safety monitoring system. We will expose only those employees necessary to safely accomplish the job. The maximum number of workers to be monitored by one safety monitor is _____. Our safety monitoring system assigns a competent person who is responsible for recognizing and warning employees of fall hazards. The safety Monitor must be on the same walking/working surface and within visual contact with the monitored employees. He or She must also be close enough to speak with the employees. The Safety Monitor must not be assigned other duties that could limit his/her ability to monitor the work area. The duties of the safety monitor include:

Warning employees when they are approaching the open edge unsafely.

Warning employees if there is dangerous situation developing that cannot be seen by the CAZ Workers.

Making the CAZ Workers aware that they are in a dangerous area.

Warning employees if they appear to be unaware of a fall hazard or are acting unsafely. Stopping the work process if they are unable to speak with the CAZ Workers.

Safety Monitor: ______

The Safety Monitor will be identified by: ______

We are identifying the following trained employees as CAZ Workers. Only these workers are allowed to enter the controlled access zones and work without the use of conventional fall protection.

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CAZ Workers:

These CAZ Worker's will be identified by: _____

CAZ Workers will be constantly under the control of a safety monitor for fall protection and are directed to stay a minimum of six (6) feet from the edge.

The safety monitoring system will not be used when the wind is strong enough to cause loads with large surface areas to swing out of radius, or result in loss of control of the load, or when weather conditions cause the walking/working surfaces to become icy or slippery.

Employees exposed to falls of six (4) feet or more to lower levels, who are not actively engaged in leading edge work or connecting activity, such as welding, bolting, cutting, bracing, guying, patching, painting or other operations, and who are working less than six (6) feet from an unprotected edge will be always tied off, or guardrails will be installed. Employees engaged in these activities but who are more than six (6) feet from an unprotected edge as defined by the control zone lines, do not require fall protection but a warning line or control lines must be erected to remind employees they are approaching an area where fall protection is required.

TRAINING

Only individuals with the appropriate experience, skills, and training will be identified as CAZ Workers. All employees that will be working as CAZ workers under the controlled access zone or safety monitoring system will have been trained by a competent person and instructed in the following areas:

Recognition of the fall hazard in the work area.

Avoidance of fall hazards using work practices established for employees.

Recognition of unsafe practices working conditions that could lead to a fall.

The function and use of controlled access zones and safety monitoring systems.

The correct procedure for erecting, maintaining and inspecting the system(s) being used.

The intended construction sequence or erection plan.

The specific requirements of this fall protection plan and any approved changes.

SAFETY MEETINGS

A daily safety meeting will take place before starting work covered by this Fall Protection Plan. This safety meeting will be conducted by the ______ and supervisors in charge of this phase of work and should be attended by all CAZ Workers, members, and erection crew, crane crew, and the supervisors of affected employers. During the pre-shift safety meeting, erection procedures and sequence pertinent to the day's work will be thoroughly discussed and safety practices being used throughout the day will be specified. All personnel will be informed that the controlled access zones are off limits to all personnel other than those CAZ Workers specifically trained to work in that area.

ACCIDENT INVESTIGATIONS

In the event that an employee falls or there is another related, serious incident, this plan must be reviewed to decide if additional practices, procedures, pr training needs to be implemented to prevent similar types of falls or incidents from reoccurring.

CHANGES TO PLAN

Any changes to the plan will be approved in writing by ______. This plan will be reviewed by _______ as the job progresses to decide if additional practices, procedures or training needs to be implemented by the competent person to improve or provide additional fall protection. A copy of this plan and all approved changes must be maintained at the job

FIRE PREVENTION AND PROTECTION

- 1. All reasonable precautions will be taken in cooperation with local authorities to minimize fire hazards. The telephone numbers of local firefighting agencies will be posted at the office and be available for each jobsite.
- 2. Appropriate portable fire extinguishers, rated at least 2-A: 10-B: C containing at least 4.5 pounds of extinguishing agent, and hand tools will be available at the worksite. Additional 5-gallon Wildland water can extinguishers will be provided as conditions require.
 - a. Tanker or water wagon protection will be provided on projects that present an extreme fire hazard such as Wildland interface; wood; wood timber; and creosoted wood timber construction.
 - b. Any brush or trees or other combustible debris will be removed or covered prior to the start of any hot work.
- 3. All highway vehicles and cranes will be equipped with an appropriate fire extinguisher, rated at least 2-A: 10-B: C, or a fire suppression system. Fire extinguishers will be installed on other types of equipment in accordance with the applicable regulations.
- 4. All fire extinguishers and fire suppression systems will be inspected and serviced, as necessary, at least annually by a certified technician. All fire extinguishers and fire suppression systems will be inspected at least monthly by qualified person and a record of the inspection will be maintained with the extinguisher or system.
- 5. Demonstrations and training shall be provided to all personnel in the use of available first responder firefighting equipment prior to assignment and annually thereafter.
- 6. All flammable and combustible materials will be properly stored until consumed or otherwise removed.
- 7. Smoking and the use of open flames will be prohibited in any area where these

would present a fire hazard. This prohibition is to be noted by using signs.

- 8. Gasoline and other flammable liquids will be stored and handled only in approved portable tanks or safety cans.
- 9. Above ground fuel storage areas will be surrounded by a dike at least 12 inches high and of sufficient size to contain the contents stored.
- 10. Hot work operations around wood; wood timber; creosoted timber construction; or Wildland Interface will utilize appropriate cutting or burning equipment to minimize slag deposits. In all cases, the area will be copiously pre-wetted to help prevent hot spots, and water extinguishers will be utilized in dousing hot spots that are created. Prior to any hot work operations in these conditions, all areas will be again doused with copious amounts of water from a water tanker or wagon as required to prevent ignition and rekindling.
- 11. Fire watch will be conducted for a minimum of 30 minutes after hot work concludes and a minimum of 2 hours where timber or creosoted timber construction exists.
- 12. Above ground fuel storage tanks will be installed at least 20 feet from any building or facility and will be kept clear of weeds, debris and other combustible material.
- 13. At least one portable fire extinguisher having a rating of not less than 4-A:20-: BC will be maintained at a distance between 25 and 75 feet from fuel storage and dispensing areas and two will be carried on all fuel trucks.

FIRST AID AND MEDICAL SERVICES

Before the start of work, arrangements will be made with area doctors, hospitals, fire departments and ambulance services for the treatment of injured personnel and a list of available emergency services will be posted at the jobsite.

- 1. Emergency communications will be provided by mobile radio or telephone.
- 2. Injured personnel will be transported to medical facilities by the appropriate means available.
- At least one employee certified in first aid training by either the US Bureau of Mine;
 American Red Cross; or equivalent and verified by documentary evidence and will always be available to render immediate basic first aid treatment at each work site.
- 4. First aid materials will be periodically verified and readily available at each work site and will consist of at least one weatherproof 16-unit first aid kit filled following the recommendations of a consulting physician for specific worksites (Appendix E), for each 25 workers or less. Eye and/or body wash stations will be required for hazardous material contacts where applicable.
- 5. If an employee is injured on the job, that employee's immediate supervisor will complete an 801 form and turn it into the Administration Office on the same day the injury occurs. (fax or email attachment) Injuries must be reported to the Safety Manager immediately (the same day as the injury occurs).
 - a. Employees are required to report injuries *prior* to seeking medical services. Subsequently, *prior* to returning to work from an on-the-job related injury or illness, the employee must present a medical clearance from an attending physician.
- 6. Employees whose duties could include providing basic first aid treatment to injured personnel may be exposed to blood-borne diseases. Those employees will be trained and protected in accordance with the Program Supplement: Blood-borne Pathogens.

HAND AND POWER TOOLS

- 1. All hand and power tools will be used only for the purpose for which they are intended and will be maintained in safe working condition. Any tool broken or in need of maintenance will be tagged; taken out of service; and returned for maintenance or replacement.
- 2. All required guards and safety devices will be in place and functioning properly.
- 3. The noncurrent-carrying metal parts of electric tools will be grounded. When electrical tools are connected to a temporary power source, personnel will be protected by ground fault circuit interrupters.
- 4. Powder-actuated tools will be used only by trained and certified personnel. Powder actuated tools will be serviced and maintained only by qualified and authorized personnel.
- 5. Pneumatic impact tools will be equipped with safety clips or retainers to prevent tools from being expelled from the barrel.
- 6. The connections of compressed air hose with a one inch inside diameter or larger will be chained or secured to prevent whipping in the event of separation. Compressors will be equipped with an in-line pressure reducer that will reduce line pressure in the event of hose failure.
- 7. Chainsaws and other cutting tools will be operated only by qualified operators following manufacturers operating instructions and wearing appropriate eye, ear, hand and leg protection.
- 8. Pressure blasting, grinding and saw cutting may present special hazards and will be done using appropriate personal protective equipment and work practices.
- 9. Fueled tools must be shut off and cooled off prior to refueling. Smoking is prohibited within 50 feet of refueling operations.
HAZARDOUS SUBSTANCE COMMUNICATION PROGRAM

INTRODUCTION

- These procedures apply to all operations, which may expose employees to hazardous substances because of normal work conditions or as the result of a reasonably foreseeable emergency and shall also apply to multi contractor work sites.
- 2. Hazardous substances are chemicals, materials or mixtures, which contain ingredients that may create a physical hazard or a health hazard, example "Asbestos".
- Any situation arising from work conditions where an employee may ingest, inhale, absorb or otherwise be exposed to a hazardous substance will be deemed to be exposure and adequate controls shall be utilized according to site specific training.

HAZARDOUS SUBSTANCES USED IN THE WORKPLACE

1. A list of all the hazardous substances to which employees may be exposed, using the same identity used on the Safety Data Sheet (SDS) for each substance, will be maintained with this program at each jobsite. The list could include any of the substances, which are listed in Section VIII of this Program Supplement.

LABELS

- 1. When hazardous substances are received supervisors will examine the containers to determine that they are labeled to provide employees with the following information:
 - a. The identity of the hazardous substances they contain; and,
 - b. Appropriate warnings of the physical and health hazards associated with those substances.
- 2. When hazardous substances are transferred into portable containers the containers will be labeled with the following information:
 - a. The identity of the hazardous substances they contain; and,

- b. Appropriate warnings of the physical and health hazards associated with those substances.
- 3. Supervisors will ensure that the labels on containers of hazardous substances are not removed or defaced unless the containers are immediately re-labeled with the following information:
 - a. The identity of the hazardous substances they contain; and,
 - b. Appropriate warnings of the physical and health hazards associated with those substances.
- 4. Labels will be periodically audited by supervisors to ensure correct and readable labeling.

SAFETY DATA SHEETS

- 1. Safety Data Sheets (SDSs) are documents, which supply information about a particular hazardous substance or mixture including name and hazard per the requirements of the Universal Hazard Communication Program.
- 2. A SDS must be provided by the manufacturer or seller of a hazardous substance and will be requested at the time an order is placed for any hazardous material to be used on the jobsite.
- 3. A SDS for each hazardous substance which employees may be exposed to will be maintained at the jobsite or at a central location in the Branch/Project Office, accessible online and replaced with new sheets when new material is received.

TRAINING

- 1. When employees are or could be exposed to hazardous substances they will receive training using the SDSs for those hazardous substances they may be exposed to.
- 2. This training will be provided before employees are assigned duties, which may cause exposure to hazardous substances.

- 3. This training will be conducted and documented according to the specific hazard present and written program for hazard communication and will provide at least the following:
 - a. An explanation of what an SDS is.
 - b. An explanation of the labels used.
 - c. Any physical or health hazards associated with the substance or mixture, example, "Asbestos exposure can cause serious respiratory illness and is a carcinogen".
 - d. Proper precautions for handling, the necessary personal protective equipment or other precautions necessary to prevent or minimize exposure to a hazardous substance. Areas possessing materials that will present a hazard are not to be disturbed prior to testing and procedurally processing the required protective action. Example: asbestos in paint; pipe insulation; wall or ceiling materials.
 - e. Emergency procedures for spills, fires, disposal and first aid.
 - f. The methods and observations that will be used to detect the presence of a hazardous substance in the workplace.
 - g. The right of employees, their physicians or their collective bargaining agents to receive information of hazardous substances to which they may be exposed.
 - h. The right against discharge or discrimination due to an employee's exercise of the rights afforded by law.
 - i. The availability of this written program and any other hazardous substance information including SDSs and the contents of labels on containers.

NON-ROUTINE TASK TRAINING

When employees are assigned to non-routine task that may expose them to a hazardous substance they are not familiar with, they will be trained in the manner required by this Safety Manual.

ACCESS TO INFORMATION BY OTHER EMPLOYERS

- When another employer's workers may be exposed to hazardous substances while working on one of our jobsites the employer will be provided a copy of our Hazardous Substance Communication Program and the list of hazardous substances to which workers may be exposed and upon request receive a copy of the SDSs for those substances.
- 2. When another employer uses hazardous substances while working on one of our jobsites that employer will provide the Company with a copy of the other employer's written communication program and a list of those hazardous substances to which our employees may be exposed and a copy of the SDSs for those substances.

MATERIALS FOUND ON CONSTRUCTION SITES WHICH MAY CONTAIN HAZARDOUS SUBSTANCES

Acetylene gas Lime (calcium oxide)

- Adhesives Limestone
- Alcohol (ethyl, methyl) Lubricating oils
- Ammonia Lye (sodium hydroxide)
- Anti-freeze Metals
- Arsenic compounds Methyl ethyl ketone
- Asbestos Cement Pipe Motor oil
- Asbestos fibers
- Asphalt fumes Motor oil additives
- Bleaching agents Muriatic acid
- Caulking, sealant agents Oil de-emulsifier
- Caustic soda Paint
- Cleaning agents Paint remover
- Coal tar pitch Paint Stripper
- Coatings Particleboard
- Concrete curing compounds Photographic developers
- **Cutting oil Polishes**
- **Diesel Propanol**
- Drywall Resins, epoxy/synthetics
- **Dusts Sealers**
- Enamel Shellac
- Etching agents Solder, flux

Fiberglass, mineral wool Solder, soft (lead, tin) Foam Insulation Solvents Freon, 20, R20 (& others) Sulfuric acid Gasoline Thinner, paint/lacquer Glues Turpentine, gum spirit, etc. Graphite Varnishes Greases Waterproofing agents Hydraulic fluid Waxes Hydrochloric acid Welding rod Hydrogen Sulfide Inks Wood preservative Insulations

REFERENCE: TITLE 29 CODE OF FEDERAL REGULATIONS. PART 1926, SUBPART D, SECTION 1926.59

HEALTH AND PHYSICAL REQUIREMENTS

- Employees must be physically capable of safely performing their assigned duties
 And are required to comply with all the requirements of the MJ Hughes Safety Program.
 - a. Employees are to be trained in a general safety briefing including hazardous communication and job specific training prior to placement into any project. This and all the training documentation is kept in an electronic file.
- 2. No person will knowingly be permitted on the jobsite whose health or physical condition might be detrimental to their safety or the safety of others.
- 3. No person will knowingly be permitted on the jobsite while under the influence of any substance including alcohol, Illegal drugs, controlled substances and prescription or over the counter medications.
- 4. All drivers of vehicles with a rated capacity of more than 26,000 pounds and those carrying loads requiring placards will be required to pass a physical examination by a licensed physician every two years in accordance with the applicable Federal or State regulations.
- 5. All crane operators will be required to pass a physical examination by a licensed physician every two years and will meet the following minimum qualifications:
 - a. Vision of at least 20/30 Snellen in one eye and 20/50 in the other, with or without corrective lenses.
 - b. Ability to distinguish colors, if required for safe operation.
 - c. Normal depth perception and field of vision.
 - d. Adequate hearing, with or without hearing aid.
 - e. Sufficient strength, endurance, agility, coordination and speed of reaction to meet equipment demands.
 - f. No evidence of physical defects or emotional instability that could interfere with performance.

- g. No evidence of proneness to seizures or loss of physical control.
- 6. All operators of equipment, vehicles and machinery must be able to read and understand the signs, signals and operation instructions in use.
- 7. Employees will not be required or allowed to wear a respirator unless they have passed
 a Medical screening to determine they are physically able to perform work while using the required respiratory protective equipment.
- 8. Safety Managers and Project Managers respectively are responsible for ensuring the safety and health of employees.
- Communication of the requirements of all portions of this program and the overall MJ Hughes Safety Program are spelled out in the opening responsibility section of this safety program.
 - a. Hazards affecting the health and safety of any employee must be communicated to management and will be done without fear of reprisal.
 - b. Workplace hazards are identified by specific site inspections introduced by new processes, procedures, or substances as noted otherwise in this Safety Program. These inspections are documented on the site inspections checklist provided as an attachment to the MJ Hughes Safety Program.

COVID-19 and Other Communicative Diseases Construction Site Protocols

Worker Personal Responsibilities

Employees need to take steps to protect themselves. Refer to the provided CDC guideline poster: <u>How to Protect Yourself.</u>

Any employee showing signs of respiratory illness (i.e., fever, cough, shortness of breath), must stay home and not report to work until free of symptoms for at least 72 hours, without the use of medicine, or as recommended by the CDC. Refer to our provided CDC guideline: What to Do if You Are Sick.

Social Distancing

Work in occupied areas should be limited to only those tasks that are strictly necessary. Limit physical contact with others, utilizing the 6-foot rule wherever possible. Assemblage in gatherings such as safety meetings shall utilize the 6-foot rule and supervisors shall note those present vs passing along a sign in sheet.

7/1/2024

General Job Site/ Office Practices

A designated representative shall monitor for signs of illness in the workplace, and if someone is showing symptoms, follow the CDC guidance for how to conduct a risk assessment.

If an employee is confirmed to have COVID-19, or other like disease, inform fellow employees of possible exposure to the disease in the workplace, but maintain confidentiality as required by the Americans with Disabilities Act (ADA). Ask the affected employee to identify those other employees whom he/she came into contact with before the employee departs. Employees who worked in close proximity (3- to 6feet) to a coworker with confirmed disease should also be sent home for the suggested 7-day quarantine period and tested for the disease.

When possible, workers should not share tools. iPad and mobile device use should be limited to a single user.

Personal Protective Equipment (PPE)

Gloves: Gloves should be worn whenever possible while on site. The type of glove worn should be appropriate to the task.

Eye protection should be always worn while on site.

The CDC is currently recommending that healthy people wear face masks and are encouraged especially when working within 6 feet of another worker.

Face masks shall be always worn if mandated by the authority having jurisdiction.

Employees shall utilize respirators as required for the work being conducted.

Sanitation and Cleanliness

Frequent and thorough hand washing with soap and running water for at least 20 seconds shall be utilized when possible. Hand sanitizer will be utilized when available and hand washing facilities are not available. Refer to CDC guideline: <u>When and How to Wash Your Hands</u>.

All workers should wash their hands often, especially before eating, smoking, or drinking, and after blowing your nose, coughing, or sneezing. Workers should refrain from touching their face.

Disinfect frequently touched surfaces including tools at least once each day. Refer to the provided CDC guideline: <u>Clean & Disinfect.</u>

When sanitizing products are not available, a bleach and water solution will suffice. ¼ cup of bleach in a gallon of water. A spray bottle and rag may be utilized for this cleansing.

Portable job site toilets should be cleaned by the leasing company at least once per week (disinfected on the inside). Double check that hand sanitizer dispensers are filled—if not, fill them. Frequently touched items (i.e., door pulls and toilet seats) should be disinfected frequently, ideally after each use.

Job site offices/trailers and break/lunchrooms must be cleaned at least once per day.

HEARING PROTECTION

OBJECTIVE

The objective of the MJ Hughes Hearing Conservation Program is to minimize occupational hearing loss by providing hearing protection, training, and annual hearing tests to all persons working in areas or with equipment that have noise levels equal to or exceeding an eight-hour time-weighted average (TWA) sound limit of 90 dba (decibels measured on the A scale of a sound level meter). A copy of this program will be maintained at all project locations. A copy of OSHA's Hearing Conservation Standard, 29 CFR 1926.52, can be obtained from the Safety Manager and shall be posted in areas with affected employees.

ASSIGNMENT OF RESPONSIBILITY

- 1. Management
 - a. Use engineering and administrative controls to limit employee exposure
 - b. Provide adequate hearing protection for employees.
 - c. Post signs and warnings in all high noise areas.
 - d. Conduct noise surveys annually or when new equipment is needed.
 - e. Conduct an annual hearing test for all regular term employees.
 - f. Conduct hearing conservation training for all new employees.
 - g. Conduct annual hearing conservation training for all regular term employees.

2. Employees

- a. Use company-issue approved hearing protection in designated high noise areas.
- b. Request new hearing protection when needed.
- c. Exercise proper care of issued hearing protection.

PROCEDURES

1. Noise Monitoring

- a. Monitoring of noise exposure levels will be conducted by either the safety manager or project manager. It is the responsibility of each individual supervisor to notify the safety manager or project manager when there is a possible need for monitoring. Monitoring will be performed with the use of sound level meters.
- b. Monitoring will also be conducted whenever there is a change in equipment, process or controls that affect the noise levels. This includes the addition, removal or substitution of equipment in place of that previously used. The responsible supervisor must inform the safety manager or project manager when these types of changes are implemented.
- 2. Employee Training
 - a. Affected employees are required to attend training concerning the proper usage and wearing of hearing protection. The training will be conducted by the safety manager or a designated representative, within a month of hire and annually thereafter and updated according to project requirements.
 - b. Training shall consist of the following components:
 - (1) How noise affects hearing and hearing loss.
 - (2) Review of the OSHA hearing protection standard.
 - (3) Explanation of audiometric testing.
 - (4) Rules and procedures.
 - (a) Location where hearing protection is available
 - (b) How to use and care for hearing protectors.
 - c. Training records will be maintained by the Safety Managers.
- 3. Hearing Protection
 - Management, supervisors, and employees shall properly wear the prescribed hearing protection while working or traveling through any area that is designated as a high noise area.

- b. Hearing protection will be provided at no cost to employees who perform tasks designated as having a high noise exposure and replaced as necessary.
 - (1). It is the supervisor's responsibility to require employees to wear
 "appropriate" hearing protection when noise levels reach or exceed 85
 dba, taking into consideration the project environment and changes.
 - (2). Employees will have the opportunity to choose from at least two different types of hearing protection.
- c. Personal stereo headsets, or "Walkman," are not approved for hearing protection and are not permitted in any operating area of company property.
- d Signage is required in areas that necessitate hearing protection. It is the responsibility of supervisors to provide signage to the appropriate areas.
- e. Preformed earplugs and earmuffs should be washed periodically and stored in a clean area. Foam inserts should be discarded after each use.
 - (1). Hands should be washed before handling preformed earplugs and foam inserts to prevent contaminants from being placed in the ear.
- f. Supervisors will keep a log of the areas or job tasks designated as requiring hearing protection, as well as the personnel affected by this Hearing Conservation Program (see Attachment B).

4. Audiograms/Hearing Tests

- Employees subject to the Hearing Conservation Program who have timeweighted average (TWA) noise exposures of 85 dba or greater for an eight (8) hour work shift will be required to have both a baseline and annual audiogram. The audiograms will be provided at no cost to the employee.
- b. The baseline audiogram will be given to regular term employees within one (1) month of employment with MJ Hughes Construction, and 14 hours before any exposure to high noise levels.
 - (1). Annual audiograms will be performed within one year from the date of the previous audiogram.
 - (2). It is the responsibility of the individual and Safety Managers to schedule the annual audiogram.

- c. If an annual audiogram shows that an employee has suffered a standard threshold shift, the employee will be retested within thirty (30) days of the annual audiogram. If the re-test confirms the occurrence of a standard threshold shift, the employee will be notified in writing within twenty-one (21) days of the confirmation or termination.
 - (1). Employees who do experience a standard threshold shift will be refitted with hearing protection and provided with more training on the effects of noise.

Hearing Conservation Training Log

Training Date: _____

Topic: _____

Training Conducted by: _____

Employee Signature	Job Title
	Employee Signature

	Personnel in	Hearing Conser	vation Program	I			
		Date:					
Hearing	protection is rec	quired for and has	been issued to th	e following			
	personnel:						
Employee	Project	Job	Type of	Date Issued			
Name		Description /	Hearing				
		Equipment	Protection				
		Being Used	Issued				

Record of Hearing Protection Needs

HEAT ILLNESS PROTECTION

- 1. Employees shall have access to shade and potable water on all projects and shall be given training on heat illness prevention in general safety briefings and weekly tailgate meetings as appropriate for each project.
- Supervisors responsible for the safety of employees shall be First Aid / CPR / AED / Bloodborne Pathogens trained and shall be knowledgeable in heat illness prevention, treatment; and emergency response procedures prior to placement on projects.
- 3. When temperatures reach 80 degrees additional cooling methods shall be employed such as forced air fans; cooling vests; etc. Employees shall be given rest periods as required to keep them hydrated and cooled down.
- 4. Procedure's for preventing heat illness shall be made readily available to employees including the Health and Injury program within the MJ Hughes Safety Program.

OSHA Extreme Heat Guidance

7/1/2024

When the heat index is equal to or above 80 degrees Fahrenheit employers are required to provide: • Access to sufficient shade (specifics below) • An adequate supply of drinking water (specifics below)

When the heat index rises above 90 degrees Fahrenheit, all the rules for 80 degrees apply and, in addition, employers must:

• Ensure effective communication between an employee and a supervisor is maintained so that an employee can report concerns.

• Ensure that employees are observed for alertness and signs and symptoms of heat illness and monitored to determine whether medical attention is necessary.

• Provide a cool-down rest period in the shade of 10 minutes for every two hours of work. These preventative cool-down rest periods may be provided concurrently with any other meal or rest period required by policy, rule, or law.

• Develop and implement an emergency medical plan and practices to gradually adapt employees to working in the heat.

Access to shade to be sufficient, shade must:

- Be provided by any natural or artificial means that does not expose employees to unsafe or unhealthy conditions and that does not deter or discourage access or use.
- Either be open to the air or provide mechanical ventilation for cooling.
- At least accommodate the number of employees on recovery or rest periods, so that they can sit in in the shade.
- Be located as close as practical to the areas where employees are working.
- Shade present during meal periods must be large enough to accommodate the number of employees on the meal period that remain onsite.

Drinking water To qualify as an adequate supply of drinking water, it must:

• Always be readily accessible to employees and at no cost. • Enable each employee to consume 32 ounces per hour.

• Be cool (66-77 degrees Fahrenheit) or cold (35-65 degrees Fahrenheit). • Drinking water packaged as a consumer product and electrolyte-replenishing drinks that do not contain caffeine (for example, sports drinks) are acceptable substitutes, but should not completely replace the required water.

• Ensure that employees have ample opportunity to drink water. Supervisors are responsible for ensuring these requirements are met on their projects.

If any employee has questions about this requirement or are having difficulty achieving the requirements, please talk to your supervisor or Pat Nowak (360) 553-2089 (leave a message if I can't pick up please); Mike Hughes (360) 314-2024 x 103; or Amber Hughes in HR (360) 314-2024 x 107.

HOT WORK

- 1. Welding and cutting equipment will be inspected daily and will be maintained in accordance with the manufacturer's recommendations. Gas hoses and electric welding leads will be free of damage or defects. Any defective equipment will be removed from service; then repaired or replaced. When repaired, cables shall be repaired with insulation equivalent to their original capacity. Splices in cables shall not be closer than 10' from the electrode holder.
- 2. When not in use, torch and cylinder valves will be closed, regulators will be removed, and valve caps will be replaced.
- 3. Noncurrent-carrying metal parts of electric welding machines and circuits used for other than welding will be grounded.
- 4. The ground lead will always be attached to the work. The welding current will not be allowed to pass through bearings or other machine components. Ground connections shall be mechanically and electrically adequate to carry the current load imposed.
- 5. All fuel gas-oxygen welding and cutting equipment will have a reverse-flow check valve between the torch and regulator. When attaching regulators to a cylinder, the cracking method shall be utilized away from possible ignition sources and pointed away from the body.
- 6. Compressed gas cylinders will be secured in an upright position. Oxygen cylinders in storage will be separated from fuel gas cylinders and other combustible materials by at least 20 feet or by a noncombustible barrier at least 5 feet tall. Valve caps will be secured on cylinders not in use. Cylinders shall be handled in a safe condition whether in storage, transportation, or use. When in an unsafe condition of any kind, cylinders shall be marked with tags, the shop notified, and warning signs placed around the area of storage prohibiting introduction of ignition sources.

- 7. Fire extinguishers rated at least 2-A:10–B: C and containing at least 4.5 pounds of extinguishing agent will be available at all cutting and welding operations.
- 8. All persons will be shielded from welding flash, sparks; slag; and hazardous fumes; etc. Combustible materials will be protected from heat, molten metal and other ignition sources or moved a minimum of 35' away from the operation. Where hazardous fumes, gases, or dust is possible, ventilation / vacuum devices shall be utilized to render the area safe. Respiratory protection methods may be required.
- 9. Appropriate eye, face, hand, respiratory protective and other personal protective equipment will be used by personnel performing welding or cutting. Personnel conducting welding operations shall be trained in the use of equipment in service and the rules and instruction for the use, maintenance, storage of equipment shall be readily available.
- All hoses and leads must be kept up off walkways, passageways; stairs; ladders; or other areas where they could cause a tripping hazard or be exposed to physical damage. Machines shall be placed outside confined spaces and blocked from unintentional movement. Power supplies shall be switched off when leaving the work area or machines are moved.
- 11. The individual in charge must inspect the area to be sure that it is safe for the work to be done and that safe work procedures will be followed. If hot work cannot be conducted safely, it shall not be done. All moveable combustibles shall be removed or shielded as required. Damp or humid conditions will require additional protection such as mats, driers; or other physical barriers to contact that would create an unsafe condition.
- 12. A fire watch, trained in the use of the applicable extinguishing agent will be designated and remain at the location of hot work during, and a minimum of one-half hour after hot work is completed, or in the case of timber or creosoted timber construction, a minimum of two hours.
- 13. Hot work will not be conducted in areas that have not been inspected or authorized by a hot work permit included in this section.

- 14. Precautions will be taken wherever uncovered openings or cracks in floors and walls exist near the location of the work so that no combustible or flammable materials will be exposed to sparks or flames.
 - a. NOTE: See Fire Prevention for special conditions such as timber and creosoted timber construction.
- 15. Cylinders containing oxygen, acetylene or other fuel or gas will not be taken into confined spaces.
- 16. When hot work operations are suspended for any substantial period of time, such as lunch or overnight, gas cylinders will be shut off. Where practicable the torch and hoses will be removed from confined spaces.
- 17. Upon completion of welding operations, the welder will have a means of warning other workers to the location of hot metal.
- 18. All personnel performing hot work shall be trained on the equipment being utilized.

Hot Work Permit

			Time Limit	s
		Issued		AM/PM
		Expires		AM/PM
			* Hot Work Pe	rmit
			Limited To 1	Shift
Work Location	Specific Location		Date	
	-			
Person Requesting W	ork Completion			
Contractor/Person Pe	erforming Work			
Specifically Describe Hot Work	To Be Done & The Object To Be	Worked On:		
Confined Success				
Commen Space: Calibration Data: Serial # Of Ind	strument		Model Of	
	su unfult		Instrument	
Survey Results: * The Company Representa prevent accidental ignition a	% LEL (10 percent Ma ative will initial the appropria and note any additional cond	ximum)	<i>of Person Conducting</i> the precautions	<i>Survey</i> which were take
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HOUSEKEEPING and SANITATION

- 1. Work and storage areas will be maintained in a clean and orderly condition.
- 2. Materials will be stored in such a way as to ensure stability.
- 3. Rubbish, debris and waste in work areas should be collected and removed for disposal at least daily so the site is clear when work begins the next workday. These items will not be allowed to damage the environment or personnel in any manner, requiring employees to be trained in the proper handling and disposal.
- 4. Protruding nails and spikes (in boards, planks, etc.) will be bent down or removed.
- 5. Flammable or combustible liquid storage and dispensing areas will be kept clear of other combustible materials and be separated from other work areas and facilities.
- 6. Drinking water will be provided from sources approved by appropriate health authorities.
- 7. All outlets dispensing non-potable water will be conspicuously posted, "WATER UNFIT FOR DRINKING."
- 8. Disposable, single-use cups will be provided for drinking water. Used cups will be disposed of properly.
- 9. Adequate toilet facilities will be provided for employees, consisting of at least one portable chemical toilet at each worksite, unless transportation to other facilities is readily available.
- 10. Washing facilities, including soap, water, and paper towels will be provided with toilet facilities and when necessary for the prevention of injury or illness from exposure to hazardous substances or poisonous plants.
- 11. Waste shall be segregated according to hazard and proper disposal methods and opportunities for recycling shall be utilized whenever possible.

HYDROGEN SULFIDE

PURPOSE

The purpose of this program is to ensure that no employee is exposed to inhalation, ingestion, skin absorption, or contact with any material or substance at a concentration above those specified in the "Threshold Limit Values of Airborne Contaminants for 1970" found in Appendix A of 29CFR 1926.55 (also see 29CFR1910.1200) Areas of possible contamination are tunnels; tanks; sewers; other confined spaces.

CHARACTERISTICS

1. Hydrogen sulfide is toxic, colorless, with the odor of rotten eggs at low concentrations, soluble in water and flammable.

HEALTH EFFECTS

1. Effects may range from irritation of the eyes, nose and throat to temporary loss of smell. Headaches, dizziness, and upset stomach are more intense symptoms caused by higher concentrations. Exposure to high concentrations can cause instant paralysis of the respiratory system causing loss of consciousness and death.

GENERAL REQUIREMENTS

- 1. Permissible exposure levels (PEL) OSHA
 - a. 20 parts per million (PPM) ceiling level
 - b. 50 ppm maximum allowable peak for 10 minutes with no other exposure
- 2. Permissible exposure levels NIOSH
 - a. 10 PEL averaged over 10-minute period
 - b. 50 ppm area shall be evacuated

EXPOSURE DETECTION, ASSESSMENT, AND MONITORING

- Personal or area sampling shall be conducted whenever possible exposure is suspected. Employees and supervisors will follow the monitoring and exposure guidelines established in program LEAD HEALTH PROTECTION.
- Direct reading instruments and colorimetric tubes for quantification of exposures will be used. Personal and/or area monitors that alarm when PEL exceeds the preset level of 20 ppm for 1910 or 10 ppm for 1926. Upon alarm employees will vacate the area immediately.
 - a. 0.13 ppm Threshold of odor detection
 - b. 0.77 ppm Faint, but readily perceptible odor
 - c. 4.6 ppm Easily noticeable odor
 - d. 10 ppm Eye irritation, soreness, redness, burning
 - e. 27 ppm Strong, unpleasant, but not intolerable odor
 - f. 50 ppm irritation and dryness of nose, throat, and airways, cough, shortness of breath, pneumonia.
 - g. 100 ppm immediate irritation of eyes and respiratory tract
 - h. 150 ppm Sense of smell may be paralyzed
 - i. 200 ppm Headaches, dizziness, nausea
 - j. 500 ppm Unconsciousness and death within a few minutes, may be no warning odor
 - k. 1000 ppm immediate loss of consciousness and respiratory paralysis leading to death

NOTIFICATION

1. Signs shall be posted at entrances to regulated areas.

DANGER

HYDROGEN SULFIDE

TOXIC

FLAMMABLE - NO SMOKING

AUTHORIZED PERSONNEL ONLY

RESPIRATORS REQUIRED

METHOD OF COMPLIANCE

- 1. Engineering controls; work practices; personal protective equipment (PPE)
 - a. Ventilate spaces to mitigate accumulations
 - b. Assessment of spaces utilizing detection
 - c. Respirators and other PPE

EMERGENCY, SPILL AND LEAK PROCEDURES

1. The same procedures will be established as outlined in other emergency contingency planning procedures in this safety manual.

TRAINING

- 1. All employees accessing areas with the potential for containing Hydrogen Sulfide will be trained in proper procedures for safety accessing and carrying out their assignment including site specific contingency plans.
- 2. Training will follow that of the procedures for respiratory protection and Lead Health including baseline medical evaluations and follow-up examinations.

RECORD KEEPING

- 1. Exposure Monitoring 30 years.
- 2. Medical surveillance Duration of employment plus 30 years.
- 3. Training same as medical surveillance

IMPALEMENT PREVENTION

- 1. Employees will be protected from the hazard of impalement working around or over exposed, vertically or horizontally projecting, reinforcing steel or other similar projections as follows:
 - Employees working at grade or at the same surface as exposed vertically protruding reinforcing steel or other similar projections, will be protected by guarding the exposed ends with protective rebar covers or rebar troughs.
 - Employees working above grade or any surface and exposed to vertically protruding reinforcing steel or other similar projections will be protected by a fall protection system, or protective rebar covers.
 - Rebar caps may be used as impalement protection for employees exposed to vertically protruding reinforcing steel or other similar projection. Rebar caps may be used on horizontal rebar to protect employees from scratches and abrasions.
 - d. Rebar troughs may not be used as a substitute for engineered or manufactured protective rebar covers when employees are working at heights greater than 4 feet above grade or another working surface.
- 2. Protective rebar covers will be made of substantial wood, plastic, or other similar material.
- 3. Job-built wood protective rebar covers and rebar troughs will be constructed of at least "Standard Grade" Douglas Fir.

INSPECTIONS

- 1. Each project shall be inspected as a minimum once a week, more frequently depending on site conditions.
- 2. Inspections shall be conducted by a supervisor, or a competent person assigned the task.
- 3. The site inspection form included within this section may be used but the HCSS Field app or HCSS Diary is preferred to document every inspection except for regulatory inspections. The guidelines contained in that section of this program shall be followed and documented as required therein.
- 4. If a hard copy inspection form is utilized, it shall be kept in a log on site and forwarded to Safety each month.

JU Helpi	ing To Stop Accidents Before They Happen	A	
Date	e & Time: Location(s) Inspected:	nt	
Insp	ector: Site Foreman:		
Job	Number: Reason For Vist:		
S = S For This A.	Satisfactory / Yes U = Unsatisfactory / No NA = Not Applicable Unsatisfactory Items Please Indicate Problem And Action On The <u>Corrective Action Chart</u> At The End Of Form. General	Stat	us
1.	Are the public and other trades adequately protected from any dangers posed by our work?		
2.	Are the general work areas neat and orderly?		
3.	Is trash being placed in proper receptacles?		
4.	Does the foreman know the location of the closest hospital?		
5.	Have all employees taken part in a JHA discussion for their particular work task within the last week?		
6.	Do all employees have access to potable water?		
7.	Is a first aid kit available?		
8.	Are SDS readily available to all employees on site?		
9.	Are all flammable liquids stored in approved safety cans?		
10.	Are all flammable liquid storage containers labeled appropriately?		
11.	Is a fire extinguisher readily available, inspected monthly, and maintained annually?		
12.	Are all employees protected from accidental injury or impalement by sharp or slender objects (protruding nails, rebar, etc.)?		
В.	Slip, Trip, and Fall Prevention		
	Are all unattended manhole, catch basin, and similar openings protected with barricades or fencing, or covered securely with physicad or similar?		
1.			
1. 2.	Are all hoses, cords, cables, nylon strapping, metal banding, shovels, rakes, etc., placed neatly outside of common employee travel ways?		
1. 2. 3.	Are all hoses, cords, cables, nylon strapping, metal banding, shovels, rakes, etc., placed neatly outside of common employee travel ways? If hose, cable, cord, etc., must cross a common employee travel way is it securely fastened in such a manner as to prevent tripping?		
1. 2. 3. 4.	Are all excavations where crews are not actively working protected either by barricades, fencing, or parked machine?		
1. 2. 3. 4. 5.	Are all hoses, cords, cables, nylon strapping, metal banding, shovels, rakes, etc., placed neatly outside of common employee travel ways? If hose, cable, cord, etc., must cross a common employee travel way is it securely fastened in such a manner as to prevent tripping? Are all excavations where crews are not actively working protected either by barricades, fencing, or parked machine? Are employees working higher than 4' trained and protected by guardrails or a personal fall arrest system?		
1. 2. 3. 4. 5. C.	Are all hoses, cords, cables, nylon strapping, metal banding, shovels, rakes, etc., placed neatly outside of common employee travel ways? If hose, cable, cord, etc., must cross a common employee travel way is it securely fastened in such a manner as to prevent tripping? Are all excavations where crews are not actively working protected either by barricades, fencing, or parked machine? Are employees working higher than 4' trained and protected by guardrails or a personal fall arrest system? Ladder Safety		
1. 2. 3. 4. 5. C. 1.	Are all hoses, cords, cables, nylon strapping, metal banding, shovels, rakes, etc., placed neatly outside of common employee travel ways? If hose, cable, cord, etc., must cross a common employee travel way is it securely fastened in such a manner as to prevent tripping? Are all excavations where crews are not actively working protected either by barricades, fencing, or parked machine? Are employees working higher than 4' trained and protected by guardrails or a personal fall arrest system? Ladder Safety If an employee is using a ladder have then been trained in ladder safety?		
1. 2. 3. 4. 5. C. 1. 2.	Are all hoses, cords, cables, nylon strapping, metal banding, shovels, rakes, etc., placed neatly outside of common employee travel ways? If hose, cable, cord, etc., must cross a common employee travel way is it securely fastened in such a manner as to prevent tripping? Are all excavations where crews are not actively working protected either by barricades, fencing, or parked machine? Are employees working higher than 4' trained and protected by guardrails or a personal fall arrest system? Ladder Safety If an employee is using a ladder have then been trained in ladder safety? Does the ladder extend at least 3' above the upper landing?		

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Is the ladder in good working condition	4. Is	Is the lad	der in	good	working	condition	12
---	-------	------------	--------	------	---------	-----------	----

5. Is the ladder securely fastened, either by embedment into earth or some type of rope or cable?

6. Stepladders are being used only in the open position.

7. Are all ladder rungs free from grease and oil?

8. Are employees facing the ladder and maintaining three points of contact?

D. Personal Protective Equipment (PPE)

1. Are hard hats being worn by all employees?

2. Are work boots being worn by all employees?

3. Are jeans, canvas, or similar long pants being worn by all employees?

4. Are gloves, safety vests, earplugs, safety glasses, and similar PPE readily available to all employees?

5. Is hearing protection being worn where required?

6. Are gloves being worn where required?

7. Are safety vests being worn where required?

8. Are safety glasses being worn where required?

9. Is all utilized and available PPE in good working condition?

E. Trenching and Excavation

1. Is the work being performed by trained personnel?

2. Has the competent person inspected the excavation prior to any employee entering?

3. Has a JHA been completed?

4. Is the crew aware of all potential existing utilities in the work area?

5. Is the crew aware of all overhead electrical lines in the work area?

6. Has the competent person inspected the trench prior to an employee entering?

7. Are all excavations 4' or greater in depth protected from cave-in by proper shoring or sloping?

8. Are the sides of all trenches sloped at a rate no greater than 1.5H:1V?

9. Trench Box Safety

a. Is the tabulated data sheet on site for this trench box?

b. Is the excavation no greater than 2' below the bottom of the trench box?

c. Does the trench box extend at least 18" above the top of the vertical sides of the trench?

NA

10. Are spoils kept at least 2 feet away from the trench edge?

11. Is a ladder present in all excavations 4' or greater in depth?

12. If a ladder is used, is it positioned such that no employee has to travel greater than 25' to access it?

13. Is the trench protected from water accumulation?

F. Hand & Power Tools

1. Are shafts and handles of all tools free from cracks and in good working condition?

2. Are all tools stored neatly and protected from damage?

3. Are the proper tools being used for the job?

4. Are all power cords and extension cords free from cuts, frays, or other damage?

5. Have the employees operating a power tool been trained on that specific tool?

6. Are all impact tools free from splinters or mushrooms?

7. Are all damaged or malfunctioning tools tagged out?

8. Are all guards on tools in place and working properly?

9. Are GFCI's used for all portable electric tools?

G. Heavy Equipment

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1.	Are all backup alarms functioning properly?		
2.	Are all seat belts functioning and being used?		
Н.	Material Handling and Rigging		
1.	Are employees using proper lifting techniques when lifting objects manually?		
2.	Are machines being used to lift heavy objects?		
3.	Do all chains and straps have a legible capacity rating tag?		
4.	Are all chains and straps being used according to their capacity rating?		
5.	Do hooks used for lifting have a safety latch in place?		
6.	Are tag lines available and being used when appropriate?		
7.	Employees are not allowed underneath any overhead load.		
8.	Are lifting chains being rigged properly?		
9.	Are loads that have the potential to swing during movement being secured?		
10.	Are all lifting apparatus stored neatly and protected from weather and other damage?		
Ι.	Other Areas (Please Fill In As Necessary)		
1.			
2.			
3.			
4.			
5.			
		•	

Corrective Action Chart						
ltem Number	Problem / Action	Person Responsible	Correctio Verificati	on on		
			1			

Corrective Action Chart Usage:

Item Number: The letter and number of the problem item. i.e. G-1 for a machine not having a functioning backup alarm. **Problem / Action:** What is unsatisfactory about the item and how it will be addressed. **Person Responsible:** Who is responsible for addressing the problem item. **Correction Verification:** The date and initials of who verified that the problem was resolved.

JOB HAZARD ANALYSIS

INTRODUCTION

- One of the most important and effective tools in accident prevention is the Job Hazard Analysis (JHA). The following is a guide to assist personnel in developing a JHA for each type of operation.
- 2. The fundamentals of JHA are:
 - Each type of operation or major phase of work can be broken down into a series of general steps. Types of operations could include mobilization, grading, paving, excavations and so forth.
 - b. The hazards associated with each step can be identified.
 - c. Controls can be identified or developed to eliminate or reduce the severity of the hazards.

DEVELOPMENT

- The JHA process ideally involves personnel at various levels throughout the organization. Each JHA should, to the extent possible, be developed through the cooperation and participation of the affected users including the Estimator, Superintendent, Foreman, Safety Supervisor and an affected employee. The Project Manager should encourage the development of JHAs and participate when possible.
- 2. Each type of operation or major phase of work should be broken down into a series of general steps. Each step should be described (briefly) in the order it will be performed.
- 3. After each general step of the operation has been identified, the hazards associated with each step should be identified, to the extent practicable. The following questions should be asked about each step to help identify the potential hazards:
 - a. Can anyone encounter an energy source (electricity, noise, radiant energy) or hazardous materials (chemicals, dust)?
 - b. Can anyone be struck by a moving, falling or flying object?
 - c. Can anyone strike against a stationary or moving object?
 - d. Can anyone be caught in, under or between anything?
 - e. Can anyone slip, trip or fall?
 - f. Will there be any lifting, pushing or pulling of heavy objects or materials?
 - g. Will anyone have limited visibility due to dust, smoke or low light conditions?
 - h. Will there be any fire hazards?
 - i. Will there be any environmental hazards (rain, lightning, darkness)?
- 4. After the potential hazards have been identified for each step, appropriate controls to eliminate or reduce the accident producing potential of the hazards must be identified. If the hazards cannot be designed out of the job steps, other forms of protection must be provided (i.e. personal protective equipment, training, etc.) to reduce the hazard to employees.

IMPLEMENTATION

- 1. Before starting a new operation and before the next step of an ongoing operation, the JHA should be reviewed in a toolbox safety meeting, with all the employees potentially exposed to the hazards.
- 2. Supervisors should instruct new or transferring employees using the JHA developed for the steps of operations to which those employees will be assigned.

REVIEW

- 1. A periodic review of each JHA should be performed to evaluate the effectiveness of the controls in eliminating or reducing hazards identified in each operation.
- 2. The review provides an opportunity to reevaluate each step and amend the JHA to incorporate the latest and most effective methods of performing the work.

Job Hazard Analysis (JHA)

Activity/Work Task: Overall Risk Assessment Code (RAC) (Use highest code)					xode)			
Project Location:	Risk Assessment Code (RAC) Matrix							
Contract Number:				Probability				
Date Prepared:		Sev	verity	Frequent	Likely	O c c a s i o n a l	Seldom	U n l k e l y
Prepared by (Name/Title):		Cata	strophic	E	E	H	H	M
		Cr	itical	E	н	H	M	Ļ
Reviewed by (Name/Title):		Nec	rginai Iicible	M	M	M	L	÷
Notes: (Field Notes, Review Comments, etc.)		Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)				e above)	-	
		"Probability" is t identified as: Free	he likelihood to cause quent. Likely, Occasio	an incident, near nal. Seldom or Un	miss, or accident and likely.	F	AC Cha	rt
		"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible			E = Extremely High Risk H = High Risk			
		Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.			= Moderate sk • Low Risk			
Job Steps	Hazards			Co	ontrols			R A C
STEP 1:	STEP 1:		STEP 1:					
STEP 2:	STEP 2:		STEP 2:					

LADDERS

- Ladders will be of proper size, design and condition for the intended use and will not be used as work platforms. Ladders will be placed on a substantial footing and securely fastened. Ladders that are damaged will be removed from service.
- 2. Job-made ladders will be constructed and maintained in accordance with the applicable State or Federal regulations for the load imposed, constructed of straight grained wood with no knots larger then 3/4". Job made ladders will have rungs 12 inch on center, having filler blocks installed. If a job-made ladder provides the only means of access to a work area for 25 or more employees, or if simultaneous two-way traffic is expected, a double cleat ladder will be installed. Duplex nails will not be used in job made ladder production. (Reference OSHA/ANSI Regs)
- 3. Single cleat ladders will not exceed 30 feet in length between the base and top landing and have side rails of a minimum of 2x4 lumber if 16 feet or under and 2x6 lumber when over 16 feet long. Single cleat ladders will be at least 15 inches but not more than 20 inches between rails.
- 4. Double cleat ladders will not exceed 24 feet in length between the base and top of the landing and have side rails of a minimum of 2x4 lumber if 12 feet or under and 2x6 lumber when over 12 feet long. If the length required exceeds these maximums, two or more separate ladders, offset with a landing or platform, will be used. Double cleat ladders will be at least 18 inches but not more than 22 inches between rails.
- 5. Portable ladders will extend at least 36 inches above the top landing. Fixed ladders will extend at least 42 inches above the top landing. In either case, they will be adequately secured to a fixed object, never a moveable object and set back at the base a safe distance from vertical approximately one fourth (1/4) of the working length of the ladder. There shall be no tripping hazards around the base or top of ladders and be placed on substantial footing.
- 6. Metal ladders will not be used when there is exposure to electrical or explosive hazards.
- Ladders with broken or missing side rails or unevenly spaced rungs must not be used.
 Repair or destroy them immediately. All ladders to be repaired must be tagged "Do Not Use".

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- 8. Ladders will never be spliced together to make longer ladders.
- 9. Barricades or guards must protect ladders which project into passageways or doorways where personnel, moving equipment, or material being handled could strike them.
- 10. Making sure your feet are free of mud, grease, etc., always face a ladder when ascending or descending with both hands on the rails. Never carry objects while accessing ladders, use a hand line.
- 11. Step ladders must be fully opened to permit the spreader to lock. Never use a stepladder leaning against a wall for form.
- 12. If standing or working from the top three rungs or cleats on any ladder you must have a safety belt and lanyard which is secured to the structure.
- 13. Prior to using ladders, employees must inspect them; be trained in their use; and to recognize hazards related to heights. (Reference Fall Protection)

LEAD HEALTH PROTECTION PROGRAM

INTRODUCTION

- 1. This program establishes the minimum requirements for protecting employees from lead exposure and ensures compliance with the Occupational Safety and Health rules 1910.1025. It applies to any potential exposure to lead, including but not limited to the removal of paint by any employee unless testing has shown that the surface does not contain lead or was painted after 1978.
- 2. Project managers are responsible for carrying out this program in accordance with all Federal and State requirements.
- Project managers and site supervisors are responsible for identifying potential employee exposures to lead and utilizing the sample project specific submittal attached to this supplement.
 - a. Scheduling air monitoring; medical testing and follow-up.

- b. Documenting all lead exposure processes.
- 3. Employees are responsible for complying with procedures established by project managers as detailed by site supervisors.

COMPLIANCE

- 1. Allowable Airborne Exposure Levels
 - a. No employee shall be exposed to airborne lead concentrations greater than 50 micrograms per cubic meter of air (50ug/m3) averaged over an 8-hour workday.
 - Should an employee be exposed to lead for more than 8 hours per workday, the allowable exposure level shall be reduced for that day as follows:
 - (1). Allowable exposure level in ug/m3 equals 400 divided by the hours worked that day. For example, a 10-hour shift would have an allowable exposure of 400/10=40 ug/m3. These levels are established regardless of whether an employee is wearing a respirator.c. OSHA has established 50 ug/m3 as the permissible

exposure limit(PEL) and 30 ug/m3 as the action level (AL).Exposures at or above thePEL mandates additional precautions to betaken to protect the worker.PEL mandates additional precautions to be

- (1). Exposures at or above the AL but below the PEL requires the supervisor to take measures to avoid reaching the PEL. If a project will create airborne lead levels exceeding 50 ug/m3, the work will be contracted out to a firm experienced in removing lead-based coatings.
- d. Supervisors will identify jobs that will create airborne lead levels and arrange air monitoring for the purpose of determining initial exposure and developing future criteria for this program.
 - (1). Monitoring will include documentation of the job, weather conditions, temperatures, air movement, and note as much information as possible regarding engineering controls, work practices, type of coating, and removal process.

- (2). Data will be collected until an adequate amount of data is acquired to decide of the type of exposure, if any, which is occurring with specific jobs.
- (3). Employees involved in the monitoring will be required to comply with these guidelines.
- (4). Results from the monitoring will be shared with the involved employees.
- (5). If a process is found to exceed the PEL that process will be suspended until controls (engineering / administrative) have been put into place to reduce the exposure level below the PEL.
- (6). Post-job sampling may be done to ensure adequate cleaning of area or to determine potential hazards. These results will determine if further monitoring is necessary.

ENGINEERING CONTROLS

- In all cases, engineering controls will be viewed as the preferred method of controlling the potential hazard. The work environment will be separated from the rest of the environment when necessary. This will vary from project to project.
- 2. Engineering controls will also be considered in terms of how to minimize the exposure to workers to a level as low as possible and preferably below the action level. This should be accomplished by analyzing each task to determine what feasible controls are available and notifying safety of those controls that could be incorporated into this written program.

WORK PRACTICES

1. Each job should be evaluated to determine the method which will create the least amount of potential exposure. Standard operating procedures will be prepared by safety or supervisor that describes work practices to minimize airborne dust for the specific hazard. Certain practices may be prohibited when air monitoring suggests the PEL will be exceeded.

RESPIRATORY PROTECTION

- 1. Respirators will be used when a potential for lead exposure exists. Prior to issuance of a respirator the employee must be entered in MJ Hughes Respiratory Protection program.
 - a. In almost all cases, full face masks, air-purifying respirators with high efficiency filters will be issued.
 - b. Qualitative fit tests will be performed at the time of initial fitting and annually thereafter.
 - c. All employees using respirators will have gone through the MJ Hughes Respiratory Training program and will follow the written respirator protection requirements.

PROTECTIVE CLOTHING

- 1. Protective clothing will be provided by the company for employees with the potential for lead exposure at or above the AL, or where a possibility for eye or skin irritation exists.
 - Protective clothing shall include coveralls or equivalent, and may include gloves, hats and disposable shoe coverlets as well as any other necessary protective clothing to perform the necessary job.
 Workers must remove contaminated clothing prior to leaving the worksite.
- 2. Disposable clothing will be disposed of as frequently as necessary but used for no period greater than one week.
 - a. Non-disposable clothing shall be laundered by the company on a basis no greater than weekly.
 - b. Contaminated clothing will be put in plastic bags to be stored in a closed container 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.
- 3. Notification that the clothing was potentially contaminated with lead will be made to the person or company responsible for the laundry when non-disposable clothing is used.
 - This notification will be made by the person arranging the laundry. Copies of the notification must be kept on file for review.

HOUSEKEEPING

- 1. In jobs creating dust, such as paint removal by sanding, workers will be required to clean the workspace once the sanding is completed.
 - a. This will include a minimum of vacuuming surfaces with an HEPA vacuum to the point where no visible dust remains.
 - b. HEPA filters will be replaced according to standard operating procedures that minimize the creation of airborne dust.
 - c. Damp mopping shall also be used to minimize dust.
 - d. HEPA filters shall be disposed of according to the hazardous materials management plan.
- 2. In non-painting jobs, all surfaces will be maintained as free from lead accumulation as possible.

HYGIENE PRACTICES

- 1 Food and tobacco products will not be allowed to be present or consumed in the lead work areas.
- 2. Cosmetics may not be applied in the lead work area.
- 3. Employees shall wash their hands after working on a lead exposure project and shower if necessary.

MEDICAL SURVEILLANCE

 The company will institute a medical surveillance program for all employees who are or may have been exposed to lead at or above 30 ug/m3 (the OR-OSHA Action Level) for more than 30 days per year.

- 2. Medical surveillance will include offering the above employees biological monitoring in the form of blood sampling and analysis for lead and zinc protoporphyrin at least every six months; medical consultations for employees whose blood lead tests exceed 40 ug/100g, and employees who seek advice on reproduction concerns. Employees whose blood lead levels exceed 40 ug/100g will be offered more frequent testing.
- Employees will be notified of biological monitoring results within five working days after the receipt of the results. Those employees with blood lead levels exceeding 40 ug/dL, require medical removal with medical removal protection benefits.
- 4. The MJ Hughes contracting physician will be used for medical examinations, consultations, and blood testing.
- 5. Employees hired into positions which will require potential exposure to airborne lead for 30 days per year or more, will be offered a medical examination prior to their initial assignment.
- 6. In the event of questions among employees of the appropriateness of an exam or blood test, the OSHA regulations and safety will be consulted.

MEDICAL REMOVAL

- 1. In the event an employee's blood lead level exceeds the OSHA standards of 40 ug/100g, the employee will be removed from the lead exposure and other work shall be provided at the same pay rate as their usual position.
- 2. Blood testing will be conducted on a monthly basis following a removal until the blood lead level drops below 40 ug/100g. The employees shall have two consecutive blood samples below 40 ug/100g before being returned to their regular duties.

EMPLOYEE TRAINING

 Employees with potential exposure to airborne lead will be informed of the contents of Appendices A & B or OAR 437 Division 2, Subdivision Z (1910.1025). It shall be the responsibility of the individual supervisors to notify the safety department of the employment of a new employee or the new task for an existing employee that will require training and/or medical monitoring. a. It shall be the responsibility of safety to train or delegate the training of the new employee.

2. Annual retraining is required for those employees subject to exposure at or above the action level or for whom the possibility of skin or eye irritation exists.

SIGNS

- Signs will be posted on the exterior of worksites where workers may create a potential airborne lead exposure. Worksites which will not exceed the PEL will have signs posted stating "AUTHORIZED PERSONNEL ONLY" at the entry to the worksite.
 - a. Authorized personnel for this purpose will mean workers who are working the actual project, or workers who are not working on the project and have a need to be at the location and have been trained on Appendices A & B of the OSHA lead code and are following the companies written program.
 - b. Final decision of who is considered authorized personnel will rest with safety.
 - In worksites where it is anticipated that the PEL will be exceeded, a sign reading "WARNING, LEAD WORK AREA, POISON, NO SMOKING OR EATING" shall be posted.

RECORDKEEPING

- 1. Safety will maintain all records related to lead exposures. These forms will include:
 - a. The date, number duration and location of each sample as well as a description of the sampling procedure.
 - b. The type of respirator worn, the name, social security number and the job classification of the employee monitored.
 - c. Any environmental variables that could affect the results will also be noted on these forms.

- 2. Records will be maintained for 40 years or for the duration of employment plus 20 years, whichever is longer.
- 3. Medical surveillance records will include the employee's name, social security number and a description of the employee's duties.
 - Any written opinions from the physician will be included as will any air monitoring results which were requested by or furnished to the physician.
 - b. In addition, employee medical complaints will be included.
- 4. Safety will keep a copy of any medical examination results released to the company as well as any written work history which was presented to the physician and a copy of biological monitoring results.
 - a. These records will be maintained for 40 years or for the duration of employment plus 20 years, whichever is longer.
- 5. Project managers will be responsible for notifying safety of persons who should be included in the medical surveillance program.
- If medical removal should be required, records of the employee's name, social security number and dates of removal shall be maintained. A description and statement of the removal will be included.
- 7. Records will be made available to OSHA when requested. Medical removal and medical records will remain confidential except where required to be released by federal or state law. Employees may have access to their file upon request.
- 8. Prior to disposal of any of these records after the prescribed time, the company will notify the Director of OSHA and will transfer those records to the Director upon request.

ENVIRONMENTAL MONITORING OBSERVATION

- 1. Any employee or their designated representative may observe any monitoring of employee exposure to lead.
 - The employee or their representatives should notify safety of their interest in observing monitoring and safety will make arrangements at the earliest opportunity. Any observer will be required to comply with this written program.

Sample Field Lead Health Protection Program

This Lead Protection Compliance Program has been developed to comply with OSHA Construction Industry Lead Standard 29 CFR 1926.62 and with XXXXXXX. It is approved for use by MJ Hughes Construction, Inc. The MJ Hughes Construction, Inc competent person assigned to the project has the complete authority to implement this program.

Name of Project:	
Location of Project:	
Contract Number:	
Anticipated Project Dates:	
Μ	J Hughes Construction, Inc Representative:
Name:	
Title:	
Signature:	Date:
	Competent Person Assigned to Project:
Name:	
Title:	
Signature:	Date:

1. Introduction

Lead and other hazardous metals coatings generally occur in paint applied prior to 1978. Exposure to lead can occur when workers inhale or ingest lead dust or fumes during construction activities including but not limited to; demolition, renovation, or repair of surfaces or materials containing lead. In particular, the use of abrasive blasting, mechanical or manual sanding, manual scraping, manual demolition of structures, heat gun applications, power tool cleaning, welding, cutting and torch burning are covered by this program as well as the OSHA – Lead in Construction Standard 29 CFR 1926.62.

Lead and other hazardous metal coatings are associated with brain and nervous system disorders; behavior and learning disabilities; memory and concentration problems; muscle and point pain; high blood pressure and hypertension; slowed growth; hearing problems; headaches; reproductive problems in both men and women; anemia; liver/kidney failure; and death.

The purpose of this written program is to provide protection to all employees engaged in work that may expose them to lead hazards and to eliminate lead poisoning during construction as well as to the general public. This will be accomplished by site-specific instruction by supervisors, establishing and following safe work practices, establishing a medical surveillance program, and comprehensive supervision to ensure components of the program are achieved.

The project manager and supervisors should continuously communicate to their employees the importance of lead poisoning prevention and monitor work to ensure it is conducted in compliance with this program and state and federal regulations.

2. Identification of Lead Hazard and Exposure Assessment

The Contract Special Provisions XXXX details that the structural and non-structural materials located XXXXXXX contain lead-based products. Testing will need to be completed in order to determine the exposure level that an employee will be in contact with during construction activities involving the lead-based materials. XXXX Engineering + Environmental shall collect personal samples representative of a full shift including at least one sample for each job classification in each work area with the highest potential exposure level. The full shift personal samples shall be representative of the monitored employee's regular, daily exposure to lead. Protection measures will be utilized by employees during assessment of exposure.

The initial lead test and exposure assessment results will determine the level of protection and monitoring required to perform the work on XXXXXXXX. The following actions will be taken based on the results of the exposure assessment test based on XXXXXXXX

a) Positive initial assessment:

Where an initial assessment shows the possibility of any employee exposure at or above the action level MJ Hughes Construction, Inc shall conduct monitoring which is representative of the exposure for each employee in the workplace who is exposed to lead.

b) Negative initial assessment:

Where an initial determination is made that no employee is exposed to airborne concentrations of lead at or above the action level MJ Hughes Construction, Inc shall make a written record of such determination. The record shall include the date of determination, location within the worksite, and the name and Social Security number of each employee monitored.

The following steps will be taken once the results of the initial exposure assessment has been completed-

- a) If the initial determination reveals employee exposure to be below the action level further exposure determination need not be repeated except if there is a change of equipment, process, control, personnel or a new task has been initiated that may result in additional employees being exposed to lead at or above the action level. The action level is defined in XXXXXXXX as employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air (30 μ g/m³) calculated as an 8-hour time-weighted average (TWA).
- b) If the initial determination or subsequent determination reveals employee exposure to be at or above the action level but at or below the permissible exposure limit (PEL) MJ Hughes Construction, Inc will initiate additional monitoring in accordance with XXXXXX at least every six months. MJ Hughes Construction will continue to monitor at the required frequency until at least two consecutive measurements taken, at least seven days apart, are below this action level at which time MJ Hughes Construction will discontinue monitoring for that employee. Monitoring will discontinue for this employee unless there is a change of equipment, process, control, personnel or a new task has been initiated that may result in additional employees being exposed to lead at or above the action level. Permissible exposure limit is detailed in XXXXXXX that the employer shall assure that no employee is exposed to lead at concentrations greater than fifty micrograms per cubic meter of air (50 µg/m³) averaged over an 8-hour period.

c) If the initial determination reveals that employee exposure is above the PEL MJ Hughes Construction, Inc initiate monitoring quarterly. Monitoring will continue at the required frequency until at least two consecutive measurements, taken at least seven days apart, are at or below the PEL, and at or above the action level at which time MJ Hughes Construction, Inc shall repeat monitoring for that employee at the frequency specified in paragraph (b) above.

3. Project

Summary of Project:

4. **Competent Person**_____will be on-site and will act as the competent person for occupational health and safety issues. The Competent Person will conduct inspections of the work areas on a daily basis to ensure that control measures, work practices, personal protective equipment, and hygiene facilities are used as prescribed in this document.

5. Schedule

6. Lead Exposure Activities

Activities which may result in lead exposures:

Signs will be posted around work areas where exposures exceed the PEL.

7. Equipment

A list of equipment and materials (paint removal, containment, personal protective, etc.) to be used during this project includes:

Mechanical tools (Magnetic drills w/annular cutters and cutting oil), vacuums, compressors, PPE (Tyvek coveralls, gloves, safety glasses, and respirators), and containment system (aluminum joists, scaffold jacks, lumber, plywood, filter fabric, and plastic). Informational data for the equipment to be used is included in Appendix XX.

8. **Crew**

The work will be completed by a crew of approximately **xxx** workers.

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9. Engineering Control Measures

The primary engineering control methods for this project are (check all that applies):

\square	Containment
	General Ventilation (abrasive blast cleaning)
	Wet Methods (high pressure water, wet abrasive blast cleaning)
	Local Exhaust Ventilation (needle guns, rotary penning, vacuum blasting)
\square	HEPA Vacuums
	Other, describe:

10. Technology Considered in Meeting the Permissible Exposure Limit

The OSHA standards, other publications and past project experience have been used to determine the appropriate engineering controls to be used in this project. Alternative methods were considered, but determined to be inappropriate for the project for the reasons stated below:

Project specifications require containment, XXXXXX, and solvent/compressed air cleaning to remove loose lead paint in the areas requiring xxxxx.

11. Respirators

Respirators are provided in the context of a complete respiratory protection program. The written respiratory program is found in Appendix XX.

The types of respirators to be used on this project include:

North full face respirator with HEPA filters

- A. Air Purifying with HEPA Cartridges
 - Half Mask
 - Full Face piece
 - Powered Air-Purifying (half or full-face piece)
- B. Air Supplying
 - Type CE Abrasive Blast Helmet

Other, describe: Protective Clothing Protective Clothing provided to employees who may be exposed to lead more than the PEL includes: Tyvek Suits, gloves and head covers xxxxx Laundry Reusable coveralls will be laundered as follows: No Reusable coveralls will be used Outside Laundry Address: Phone #: They have been approved for accepting lead contaminated clothing. Laundering will be accomplished off-site at the following location.		Type C Full Face piece Pressure Demand MSA
Protective Clothing Protective clothing provided to employees who may be exposed to lead more than the PEL includes: Tyvek Suits, gloves and head covers xxxxx Laundry Reusable coveralls will be laundered as follows: No Reusable coveralls will be used Outside Laundry Name: Address: Phone #: They have been approved for accepting lead contaminated clothing. Laundering will be accomplished off-site at the following location.		Other, describe:
Protective Clothing Protective clothing provided to employees who may be exposed to lead more than the PEL includes: Typek Suits, gloves and head covers xxxxx Laundry No Reusable coveralls will be laundered as follows: Outside Laundry Name: Address: Phone #: They have been approved for accepting lead contaminated clothing. Laundering will be accomplished off-site at the following location.		
Protective clothing provided to employees who may be exposed to lead more than the PEL includes: Tyvek Suits, gloves and head covers xxxxx Laundry Reusable coveralls will be laundered as follows: No Reusable coveralls will be used Outside Laundry Name: Address: Phone #: They have been approved for accepting lead contaminated clothing. Laundering will be accomplished off-site at the following location.	Prote	ective Clothing
Tyrek Suits, gloves and head covers xxxxx Laundry No Reusable coveralls will be used Outside Laundry Name: Address: Phone #: They have been approved for accepting lead contaminated clothing. Laundering will be accomplished off-site at the following location.	Prote PEL i	ective clothing provided to employees who may be exposed to lead more than th ncludes:
Laundry No Reusable coveralls will be used Outside Laundry Name: Address: Phone #: They have been approved for accepting lead contaminated clothing. Laundering will be accomplished off-site at the following location.	Tyve	k Suits, gloves and head covers xxxxx
Reusable coveralls will be laundered as follows: No Reusable coveralls will be used Outside Laundry Name: Address: Phone #: They have been approved for accepting lead contaminated clothing. Laundering will be accomplished off-site at the following location.	Laun	dry
 No Reusable coveralls will be used Outside Laundry Name: Address: Phone #: They have been approved for accepting lead contaminated clothing. Laundering will be accomplished off-site at the following location. 	Reus	able coveralls will be laundered as follows:
 Outside Laundry Name: Address: Phone #: They have been approved for accepting lead contaminated clothing. Laundering will be accomplished off-site at the following location. 	\boxtimes	No Reusable coveralls will be used
 Name: Address: Phone #: They have been approved for accepting lead contaminated clothing. Laundering will be accomplished off-site at the following location. 		Outside Laundry
 Address: Phone #: They have been approved for accepting lead contaminated clothing. Laundering will be accomplished off-site at the following location. 		Name:
 Phone #: They have been approved for accepting lead contaminated clothing. Laundering will be accomplished off-site at the following location. 		Address:
 They have been approved for accepting lead contaminated clothing. Laundering will be accomplished off-site at the following location. 		Phone #:
Laundering will be accomplished off-site at the following location.		They have been approved for accepting lead contaminated clothing.
		Laundering will be accomplished off-site at the following location.

All surfaces shall be maintained as free as practicable of accumulations of lead. Loose dust and debris shall be removed to the extent that they will not be dislodged during movement prior to relocating containment materials and equipment from one portion of the project to the next. Clean-up of floors and other surfaces where lead accumulates shall wherever possible, be cleaned by vacuuming or other methods that minimize the likelihood of lead becoming airborne. 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 selected, the vacuums shall be equipped with HEPA filters and used and emptied in a manner which minimizes the reentry of lead into the workplace.

All Contractor equipment and materials will be removed upon completion of project activities. Reusable items will be thoroughly HEPA vacuumed, washed, or otherwise decontaminated until all loose surface dust and debris have been removed. These items include, but are not limited to, paint removal equipment, containment materials, ground covers, and scaffolding.

15. Disposal

(Modify to fit Project) Due to the small amount of material that will be generated the lead-based products will not be tested and will be treated as if it is hazardous. The amount of material to be generated will be less than 100 kilograms in a calendar month as such the hazardous waste meets the requirements for Conditionally Exempt Small Quantity Generator. As a small quantity generator this work will not be subject to regulation under parts 262 through 266, 268, and parts 270 and 124 of 261.5 40 CFR, and the notification requirements of section 3010 of RCRA.

Suspected lead-based products will be collected at the jobsite and containerized/stored in a secure, closed and properly labeled container at the project site. The disposable Tyvek suits worn by employees in contact with any suspected lead-based products will also be stored in a sealable container that is properly labeled and dated. Within 90 days of the work being performed the sealed containers will be disposed of at a disposal facility permitted, licensed, and registered by the state for hazardous waste material.

16. Hygiene Facilities

MJ Hughes Construction, Inc shall assure that in areas where employees are exposed to lead above the PEL without regard to the use of respirators, food or beverage is not present or consumed, tobacco products are not present or used, and cosmetics are not applied. Adequate handwashing facilities will be provided for use by employees exposed to lead in accordance with XXXXXXX. Where showers are not provided the employer shall assure that employees wash their hands and face at the end of the work shift.

Hygiene facilities are provided by:

MJ Hughes Construction, Inc.





 \boxtimes

General Contractor

Others (identify)

The following wash and/or shower facilities will be used to decontaminate workers and will consist of: <u>Hand wash station.</u>

The wash and/or shower facilities will be located at: XXXXXXXXXX. Water, soap, and towels will be provided. Hands and face will be washed before all breaks and at the end of the day.

17. Wastewater

Wastewater (wash and/or laundry water if laundry is accomplished on site) will be (check which ones apply):



Collected and filtered on site using (describe system)



Disposed of in accordance with prior arrangements made with (name of local water and sewage authority)



Containerized for testing and disposal without filtration.

Controlled by the Owner or General Contractor

18. Worker Exposure Air Monitoring Data

The testing firm used, and exposure results are reported on the attached Appendix XX.

19. Initial Medical Surveillance

MJ Hughes Construction, Inc will arrange for medical services using XXXXXXXX to provide initial medical surveillance to any worker occupationally exposed to lead at or above the action level of $30 \ \mu g/m^3$ (at no cost to the employee). Initial medical surveillance consists of biological monitoring in the form of blood sampling and analysis for lead and zinc protoporphyrin (ZPP) levels.

20. Medical Surveillance Program

21. Medical Removal Protection

Employees assigned to this project are removed from exposure above the action level if blood lead levels greater than 30ug/dl occur, or upon recommendation by the examining physician. Their seniority and benefits are protected during the removal period. They are returned to exposures above the action level only after 2 consecutive blood lead results are below 30ug/dl or lower, or when the physician indicates that the risk due to exposure no longer exists (in the case of removal for reasons other than blood lead).

22. Administrative Job Rotation Plans

Job rotation may be used on this project to reduce worker exposures to lead on a given day. The job rotation schedule will be as follows: Job rotation will not be used.

23. Multi-Contractor Site Arrangements

Arrangements will be made with other contractors on site to inform them of the potential lead exposures and for their respective responsibilities (e.g. the General Contractor may provide shower facilities for all contractors on site):

24. Training

All workers who will potentially be exposed to lead above the action level have been trained in accordance with all the requirements found in 29 CFR 1926.62 (j). The names of the employees trained, the training provider, and the training dates are recorded on Appendix 3.

Appendix 1

Employee Exposure Results

Name and address of person or firm completing air sampling:

Description of equipment used, model numbers, flow rates, etc.:

Name and address of AIHA accredited laboratory:

Employee Monitored	<u>SSN</u>	Date	Job Title/Task	<u>8-hour TWA ug/m³</u>
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

List all employees whose exposures are presented by the monitoring results reported above.

Appendix 2

Worker Blood Lead and ZPP Test Results

Lead blood test results are considered personal medical records and will not be made available. Information on testing and general results may be discussed with MJ Hughes Construction, Inc's Safety Managers.

Appendix 3

The training was conducted by:

Employee Acknowledgment

I acknowledge that I have received training in MJ Hughes Construction, Inc's "Lead Abatement" policy/ procedures and that the training included the following points:

- 1. Possible routes of exposure to lead.
- 2. The known health effects associated with exposure.
- 3. The importance of good personal hygiene.
- 4. The specific methods of abatement that may be used.
- 5. The proper use and maintenance of protective clothing and equipment.
- 6. The correct use of engineering controls and implementation of good work practices.
- 7. The purpose, proper selection, fitting, use, and limitations of respirators.
- 8. The specific nature of the operations which could result in exposure to lead above the action level.
- 9. The purpose and description of the medical surveillance program, and the medical removal protection program.
- 10. Ban on use of chelating agents to remove lead from the blood except under direction of physician.
- 11. Access to information and regulations.

Employee Name:	SSN:	
	(Please print)	
Employee Signature:	Date:	

7/1/2024

MATERIAL HANDLING, STORAGE, AND DISPOSAL

All material must be properly stacked and secured to prevent tipping, sliding, falling or collapse. Aisles, stairs, and passageways must be kept clear to provide for the safe movement of employees and equipment and to provide access in emergencies.

- 1. Use proper lifting techniques when handling materials:
 - a. Get down close to the load.
 - b. Keep your back straight.
 - c. Lift gradually, using your legs. Do not jerk or twist.
 - d. Get help with bulky or heavy loads.
- 2. The storage of materials must not block any stairs, ladders, or other means of exit from any area.
- 3. Stored material must not be placed within 6 feet of any access point.
- 4. Pipe, conduit, bar stock, and other cylindrical materials must be stored in racks or stacked and blocked to prevent movement.
- 5. The quantity of materials stored on scaffolds, platforms or walkways must not exceed that required for one day's operation and within load limits.
- 6. Materials must never be thrown or dropped from a distance of more than 20 feet. The drop area must be barricaded to protect personnel from being struck by falling materials. Trash chutes are required for dropping materials from heights above 20 feet.
- 7. Protruding nails must be bent or pulled.
- 8. Materials must be disposed of according to their category as required by local, state; and federal regulations.

OFFICE SAFETY

Offices are a comparatively safe place in which to work, yet accidents do occur. To make your work area safe, follow these rules:

- 1. Report all unsafe conditions and equipment to your supervisor or safety manager.
- 2. Means of egress shall be kept unblocked, well lit, and unlocked during work hours.
- 3. In the event of a fire, alert other employees to evacuate and call 911 once safely out of the building. Take personnel inventory to account for all workers and report this to responding fire crews.
- 4. Only trained and equipped workers may attempt to extinguish a fire or attend to injured employees.
- 5. Exit doors must comply with all safety regulations during business hours. This includes being unlocked; unblocked; and signed when applicable.
- 6. Stairways must be kept clear of items that can impede access or cause a trip hazard.
- 7. Materials or equipment cannot be stored against doors; exits; fire extinguisher stations; or within 36 inches of electrical panels.
- 8. Aisles must be kept clear at all times.
- 9. Work areas must be maintained in a neat, orderly manner; trash and refuse are to be thrown in proper waste containers.
- 10. All spills shall be cleaned up promptly.
- 11. Storage of files and supplies must be in a manner as to preclude damage to the supplies or injury to personnel when moving from storage. The heaviest items must be stored closest to the floor and lightweight items stored overhead.
- 12. All cords running into walk areas must have protectors to preclude tripping and damage to the cords.

- 13. Extension cords may not be used in place of permanent wiring.
- 14. Never stack material precariously on top of lockers, file cabinets, or other relatively high places.
- 15. Never leave lower desks or cabinet drawers open that could present a tripping hazard. Use care when opening or closing to prevent finger pinches.
- 16. Do not open more than one upper drawer at a time: particularly the top two drawers on tall file cabinets.
- 17. Always use the proper lifting technique. Never attempt to lift or push an object which is too heavy; you must contact another employee for assistance to move heavy or bulky objects.
- 18. When carrying material, caution should be exercised in watching for and avoiding obstructions, loose material, etc.
- 19. Individual space heaters must have tip over and high limit switches and never placed near combustible materials.
- 20. Appliances such as coffee pots and microwaves must be kept in working order; clean; and regularly inspected for fraying of cords or other wear.
- 21. Fans used in work areas must have fan guards in place.
- 22. Office equipment such as cutters, scissors; staplers; etc. must only be used for their intended purpose and care exercised when in use.
- 23. Cleaning supplies must be stored away from edible materials.
- 24. Cleaning solvents and flammable liquids must be stored in appropriate containers away from possible ignition sources.

OSHA INSPECTION PROCEDURES

- 1. Be polite, respectful and cooperative.
- 2. Check the inspector's credentials; keep their business card.
- 3. The highest-ranking company supervisor present at the jobsite must always accompany the inspector.
- 4. The inspector can investigate all that is reasonable. Should the company supervisor deem a request unreasonable, the Project Manager or Safety Manager must be contacted for guidance.
- 5. Take full and extensive notes of all items inspected, areas visited, and conversations held during the inspection. If the inspector takes a picture with his camera, the company supervisor must take the same picture with a company camera or phone.
- 6. The Project Manager and Safety Manager must be notified whenever an OSHA inspector visits a project site and a full follow-up report forwarded to them.
- 7. The regulatory inspection must be documented on the form included as part of this section.

REGULATORY SAFETY INSPECTION REPORT

Call the Safety Manager when a regulatory safety inspector arrives at your job.

OPENING CONFERENCE -IDENTIFICATION - Date: Time: Location (Specific):	PURPOSE OF INSPECTION Job Number:
Inspector's Name: Phone Number: Business Address:	Proof of Identity:
Type of Inspection: Special Ge Company Representative for Inspection:	eneral Complaint
INSPECTION AND CLOSING CONFERENCE Description of alleged violation:	
Applicable Abatement:	
1	
2	
3	
4	
5	
6	
7	

8._____

Were photos/measurements taken? If so, specify by whom and when:

Employees or witnesses involved with alleged violations:

Signature: ______

Please send this form and the original of any citations issued to the Safety Manager. Keep a copy of citations for posting at the jobsite, in accordance with the instructions on the citation.

PERSONAL PROTECTIVE EQUIPMENT

- 1. Appropriate clothing, including at least long pants and work shoes or boots with substantial soles will be worn by all personnel at all jobsites and workplaces with the exception of the office and shop.
- 2. Personal protective equipment, selected to protect against recognized hazards, will be used as necessary for protection from those hazards, i.e. safety glasses; gloves; hearing protection; etc. All equipment will be in good usable condition, clean and sanitary; fit the employee. Defective equipment shall not be used but tagged for removal and returned to the shop for repair or discarding.
- 3. Appropriate head protection will be worn by all personnel at all jobsites and workplaces, without exception. Bump caps and metal hard hats are prohibited. Hard hats will meet the requirements of ANSI Z89.1-1986, Class A or B.
- 4. Appropriate eye and face protection will be used by personnel exposed to injury from dust, flying particles, splashes and other physical, chemical or radiation agents. Face shields are not adequate eye protection and should only be worn over primary eye protection (spectacles or goggles).
- 5. Personnel on foot, within a public thoroughfare right-of-way or working around equipment, SHALL wear orange or lime high visibility vests or other equivalent high visibility warning apparel meeting the requirements of ANSI 107-2010.
 - a. Warning apparel must be reflectorized with at least two horizontal stripes that surround the wearer or one horizontal stripe that surrounds the wearer and one vertical band over each shoulder. All the reflectorized stripes must be at least 2 inches wide.
 - b. Night wear shall include reflectorized pants or leggings.
- 6. Employees exposed to impact or crushing foot injuries will wear appropriate footwear consisting of at least safety-toe shoes or step in foot protectors.
- 7. Appropriate hand protection will be used by personnel when handling hazardous materials, hot objects or tools or equipment which may cause hand injuries.

- 8. Appropriate respiratory protective equipment will be used when employees are required or allowed to wear respiratory protective equipment because of exposure to respiratory hazards, such as dusts, fumes, mists, vapors or gases.
- 9. Respiratory protective equipment will be selected, and employees will be trained in its use following the Respiratory Protection Program.
- 10. Appropriate hearing protection, such as plugs or muffs, will be used when noise levels exceed 85 decibels. Exposure to impact noise will not exceed 140 decibels peak sound pressure level.
- 11. Personnel driving and passengers riding in any vehicles will use seat safety belts.
- Mandatory initial employment training on PPE will be conducted before job assignment.
 Retraining will be completed when observation denotes remedial training is required.
 All training shall be documented.
- 13. A certified Project hazard analysis shall be completed and incorporate the use of appropriate PPE.
- 14. Employees may utilize their own appropriate PPE but will be subject to company policies and taken out of service if not approved.

	MJ Hughes C	onstruc	tion PPE I	Matrix	
Welding Activitie	2S				
a. Performing oxygen / fuel grazing/ cutting/ heating	WELDER GOGGLES OR SAFETY GLASSES W SIDE SHIELDS & FACE SHIELD SHADED	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED CHAPS	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
b. Chipping Slag	WELDING HOOD or FACE SHIELD CLEAR or MESH & DUST GOGGLES or SAFETY GLASSES W SIDE SHIELDS & CLEAR WRAP AROUND FACE SHIELD	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES or LEATHER WELDING GLOVES	ANSI SAFETY VEST WHERE REQ'D
c. Peening Welds	SAFETY GLASSES W SIDE SHIELDS or DUST GLASSES	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES or LEATHER WELDING GLOVES	ANSI SAFETY VEST WHERE REQ'D
d. Performing Arc Welding (note: overhead welding should use optrell helmet 383-5240	SAFETY GLASSES W SIDE SHIELDS or WELDING HOOD	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED CHAPS	LEATHER WELDING GLOVES	ANSI SAFETY VEST WHERE REQ'D
e. Performing Tig or Mig Welding	SAFETY GLASSES W SIDE SHIELDS or WELDING HOOD	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER WELDING GLOVES	ANSI SAFETY VEST WHERE REQUIRED
f. Performing air arc gouging	SAFETY GLASSES W SIDE SHIELDS or WELDING HOOD	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER WELDING GLOVES	ANSI SAFETY VEST WHERE REQ'D
g. Rail butt joing welding	SAFETY GLASSES W SIDE SHIELDS or WELDING HOOD	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED CHAPS	LEATHER WELDING GLOVES	ANSI SAFETY VEST WHERE REQ'D
h. Overhead oxygen/ fuel gas brazing/ cutting/ heating	SAFETY GLASSES W SIDE SHIELDS & FACE SHIELD SHADED or WELDING HOOD or WELDERS GOGGLES & FACE SHIELD CLEAR	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER WELDING GLOVES	ANSI SAFETY VEST WHERE REQ'D

Metal Working	g Activities				
a. Machining Steel/ cast iron/brass/bronze	SAFETY GLASSES W SIDE SHIELDS - & FACE SHEILD (CLEAR OR WIRE MESH)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
b. Working with forge/furnace	SAFETY GLASSES W SIDE SHIELDS - & CLEAR FACE SHEILD OR SHADED FACE SHIELD	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES OR HEAT RESISTANCE MITTENS	ANSI SAFETY VEST WHERE REQ'D
c. Chipping, Cutting GRINDING	WELDING GOOD or MESH FACE SHIELD & DUST GOGGLES or SAFETY GLASSES WITH SIDE SHIELDS & CLEAR FACE SHIELD (wrap around style)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED CHAPS	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
d. Cutting rivets/bolts with cutter	SAFETY GLASSES W SIDE SHIELDS - & FACE SHEILD (CLEAR OR WIRE MESH)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
e. Removing cotter keys with power tools	SAFETY GLASSES W SIDE SHIELDS - & FACE SHEILD (CLEAR OR WIRE MESH)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQUIRED
f. Remove cotter key with pliers or unpowered tools	SAFETY GLASSES WTH SIDE SHIELDS	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
g. Splitting nuts	SAFETY GLASSES W SIDE SHIELDS - & FACE SHEILD (CLEAR OR WIRE MESH)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
h. driving/bucking/ heating rivets	SAFETY GLASSES W SIDE SHIELDS - & FACE SHEILD (CLEAR OR WIRE MESH)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
i. Scaling/ scrapping/ removing flux	WELDING GOOD or DUST GOGGLES & FACE SHIELD (CLEAR OR WIRE MESH or SAFETY GLASSES W SIDE SHIELDS & CLEAR FACESHIELD (wrap around type)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
j. handling molten metal	SAFETY GLASSES W SIDE SHIELDS - & FACE SHEILD (CLEAR OR WIRE MESH)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	HEAT RESITANCE MITTENS OR LEATHER WELDING GLOVES	ANSI SAFETY VEST WHERE REQ'D

Bridge Mainter	Bridge Maintenace Activities						
a. Setting/removal of bridge materials (decking, beams, girders, etc)	SAFETY GLASSES W SIDE SHIELDS	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D		
b. Bridge Inspections	SAFETY GLASSES W SIDE SHIELDS	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES OR HEAT RESISTANCE MITTENS	ANSI SAFETY VEST WHERE REQ'D		
c. Chemical Treatment	SAFETY GLASSES W SIDE SHIELDS & FACE SHIELD (CLEAR)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D		
d. Sand/grit blasting	SAFETY GLASSES W SIDE SHIELDS - & SAND BLASTING HOOD	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D		
e. Epoxy repairs	SAFETY GLASSES W SIDE SHIELDS & FACE SHIELD (CLEAR)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D		
f. Welding/ torch cutting	WELDERS GOGGLES or SAFETY GLASSES W SIDE SHIELDS & FACE SHIELD (shaded)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED CHAPS	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D		
g. Pouring Concrete	SAFETY GLASSES W SIDE SHIELDS	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D		

Working with sp	pecific hand tools				
a. Hammers / mauls / sledges used to strike other metal tools	SAFETY GLASSES W SIDE SHIELDS - & FACE SHIELD (CLEAR OR WIRE MESH)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
b. Struck tools (chisels, pincers)	SAFETY GLASSES W SIDE SHIELDS - & FACE SHIELD (CLEAR OR WIRE MESH)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
c. Sockets / Wrenches	SAFETY GLASSES W SIDE SHIELDS	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
d. Jack hoist (come-a- long)	SAFETY GLASSES W SIDE SHIELDS	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
e. Air Tools	DUST GOGGLES or SAFETY GLASSES W SIDE SHIELDS & FACE SHIELD CLEAR or DUST GLASSES (XP 800)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
f. Knife type cutting tools	SAFETY GLASSES W SIDE SHIELDS	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
g. Ladders / Scaffolds	SAFETY GLASSES W SIDE SHIELDS	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
h. Electric drills	SAFETY GLASSES W SIDE SHIELDS	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
i. Gas powered drills	SAFETY GLASSES W SIDE SHIELDS	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
j. Lawn mowers / weed eaters	SAFETY GLASSES W SIDE SHIELDS - & FACE SHIELD (CLEAR OR WIRE MESH)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
k. Using a pick	SAFETY GLASSES W SIDE SHIELDS - & FACE SHIELD (CLEAR OR WIRE MESH)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D

Using Saws						
a. Rail saw	WELDING HOOD W CLEAR LENS or SAFETY GLASSES W SIDE	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED; CHAPS	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D	
	SHIELDS & WRAP AROUND FACE SHIELD (CLEAR) or FACE SHIELD CLEAR & DUST GOGGLES					
b. Using manual	SAFETY GLASSES W SIDE	HARD HAT	WORK BOOTS;	LEATHER GLOVES	ANSI SAFETY	
hand saw (metal or wood)	SHIELDS		SAFETY TOE WHERE REQUIRED;	OR HEAT RESISTANCE MITTENS	VEST WHERE REQ'D	
c. Using portable	WELDING HOOD W	HARD HAT	WORK BOOTS;	LEATHER GLOVES	ANSI SAFETY	
power saw (metal or wood)	CLEAR LENS or SAFETY GLASSES W SIDE SHIELDS & WRAP		SAFETY TOE WHERE REQUIRED		VEST WHERE REQ'D	
d. Using table	WELDING HOOD W	HARD HAT	WORK BOOTS;	LEATHER GLOVES	ANSI SAFETY	
mounted power	CLEAR LENS or FACE		SAFETY TOE WHERE		VEST WHERE	
saw (metal or	SHIELD (MESH) AND		REQUIRED		REQ'D	
wood)	DUST GOGGLES or SAFETY GLASSES W/ SIDE SHIELDS & FACE SHIELD CLEAR (wrap around style)					
e. Using chain saw	DUST GOGGLES or SAFETY GLASSES W/SIDE SHIELDS & FACE SHIELD (CLEAR OR MESH)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED CHAPS	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D	
f. Using portable	DUST GLASSES (XP800)	HARD HAT	WORK BOOTS;	LEATHER GLOVES	ANSI SAFETY	
saw on concrete	& WRAP AROUND FACE		SAFETY TOE WHERE		VEST WHERE	
and other silica based materials	SHIELD (CLEAR) or DUST GOGGLES & FACE SHIELD (CLEAR)		REQUIRED		REQ'D	

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Painting Activities						
a. Using pressurized air spray paint	FACE SHELD (CLEAR) & DUST OR SPLASH GOGGLES or SAFETY GLASSES W SIDE SHIELDS & FACE SHIELD CLEAR (WRAP AROUND TYPE)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	COATED GLOVES (NOEPRENE or NITRILE OR PVC)	ANSI SAFETY VEST WHERE REQ'D	
b. Using pressurized spray cans of paints, cleaners or	SAFETY GLASSES W SIDE SHIELDS - & CLEAR FACE SHEILD OR SHADED FACE SHIELD	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	COATED GLOVES (NOEPRENE or NITRILE OR PVC)	ANSI SAFETY VEST WHERE REQ'D	
c. Using brush/rolle	SAFETY GLASSES W SIDE SHIELDS	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D	
d. Using dip vat	FACE SHELD (CLEAR) & SPLASH GOGGLES	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	COATED GLOVES (PVC)	ANSI SAFETY VEST WHERE REQ'D	
e. Using sand or shot blast equipment	SAFETY GLASSES W SIDE SHIELDS & SAND BLASTING HOOD	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D	
f. Use of a powered wire wheel for paint removal	FACE SHELD (CLEAR) & DUST OR SPLASH GOGGLES or SAFETY GLASSES W SIDE SHIELDS & FACE SHIELD CLEAR (WRAP AROUND TYPE)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D	

Miscellaneous W	/ork Activities				
a. Breaking / Cutting concrete, stone, asphalt	SAFETY GLASSES W SIDE SHIELDS & FACE SHEILD (CLEAR OR MESH)	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES OR ANTI VIBRATION GLOVES	ANSI SAFETY VEST WHERE REQ'D
b. Using compressed air or electric jack hammers	SAFETY GLASSES W SIDE SHIELDS FACE SHEILD CLEAR	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED; METAL FOOT COVERS	LEATHER GLOVES OR ANTI VIBRATION GLOVES	ANSI SAFETY VEST WHERE REQ'D
c. Using explosive (powder activated or butane activated) tools	SAFETY GLASSES W SIDE SHIELDS & FACE SHEILD CLEAR or DUST GOGGLES	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES OR ANTI VIBRATION GLOVES	ANSI SAFETY VEST WHERE REQ'D
d. Using 50 volt + or air powered impact tools	SAFETY GLASSES W SIDE SHIELDS & FACE SHEILD CLEAR or MONOGOGGLE XTR	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES OR ANTI VIBRATION GLOVES	ANSI SAFETY VEST WHERE REQ'D
e. Battery powered impact tools	SAFETY GLASSES W SIDE SHIELDS or DUST GLASSES	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES OR ANTI VIBRATION GLOVES	ANSI SAFETY VEST WHERE REQ'D
f. Spraying or manual spreading of herbicides/insecticides	SPLASH GOGGLES & FACE SHIELD GEAR	HARD HAT	RUBBER BOOTS (SAFETY TOED) or RUBBER OVERSHOES	COATED GLOVES NITRILE	ANSI SAFETY VEST WHERE REQ'D
g. Using laser distance measuring devices	LASER GOGGLES	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
h. Overhead work with potential dust and debris	DUST GOGGLES or DUST GLASSES	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D

a Machining	DUST GOGGLES & FACE		WORK POOTS	LEATHER CLOVES	ANCI SAFETY
steel/ cast iron/brass/bronze	SHIELD CLEAR or MESH or DUST GLASSES FACE SHIELD CLEAR OR MESH or SAFETY GLASSES W/ SIDE SHIELDS & FACE SHIELD CLEAR (wrap around style)		SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	VEST WHERE REQ'D
b. Working with forge/furnace	WELDING HOOD W CLEAR LENS or FACE SHIELD CLEAR & DUST GOGGLES or SAFETY GLASES W SIDE SHIELD & FACE SHIELD CLEAR (WRAP AROUND TYPE	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES OR HEAT RESISTANCE MITTENS	ANSI SAFETY VEST WHERE REQ'D
c. Chipping, Cutting	DUST GOGGLES & FACE SHIELD CLEAR or MESH or SAFETY GLASSES W SIDE SHIELD & FACE SHIELD CLEAR (WRAP AROUND TYPE) or DUST GLASSES AND FACE SHIELD CLEAR OR MESH	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	Do Not Wear Gloves	ANSI SAFETY VEST WHERE REQ'D
d. Cutting rivets/bolts with cutter	WELDING HOOD W CLEAR LENS or FACE SHIELD CLEAR & DUST GOGGLES or SAFETY GLASES W SIDE SHIELD & FACE SHIELD CLEAR (WRAP AROUND TYPE	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D

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Handling Ma	terials				
a. Handling acids and caustics	SPLASH GOGGLES & FACE SHIELD CLEAR	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	COATED GLOVES NEOPRENE	ANSI SAFETY VEST WHERE REO'D
b. Low pressure washing with diluted cleaner	SAFETY GLASSES W SIDE SHIELDS & FACE SHIELD CLEAR	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	COATED GLOVES NEOPRENE	ANSI SAFETY VEST WHERE REQ'D
c. Handling chemicals and refrigerants	SAFETY GLASSES W SIDE SHIELDS & FACE SHIELD CLEAR	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	COATED GLOVES NEOPRENE	ANSI SAFETY VEST WHERE REQ'D
d. Battery servicing/ charging (does not include adding liquids. See (a) above)	SAFETY GLASSES W SIDE SHIELDS & also suggested FACE SHIELD CLEAR	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	COATED GLOVES NEOPRENE	ANSI SAFETY VEST WHERE REQ'D
e. Creosoted material by hand	SAFETY GLASSES WITH SIDE SHIELDS	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES OR COATED GLOVES (NEOPRENE OR LEATHER)	ANSI SAFETY VEST WHERE REQ'D
f. Elevated loads suspended near employees - any location	SAFETY GLASSES WITH SIDE SHIELDS	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
g. Elevated load on jacks or stanchions	SAFETY GLASSES WITH SIDE SHIELDS	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
h. General Merchandise (handling by hand)	SAFETY GLASSES WITH SIDE SHIELDS	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
i. Operating a forklift	SAFETY GLASSES WITH SIDE SHIELDS	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REO'D

Maintenance/	housekeeping Ac	tivities			
a. Machining Steel/ cast iron/brass/bronze	FACE SHIELD CLEAR & SPLASH GOGGLES	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	RUBBER GLOVES OR COATED GLOVES (PVC OR NEOPRENE)	ANSI SAFETY VEST WHERE REQ'D
b. Working with forge/furnace	FACE SHIELD CLEAR & SPLASH GOGGLES	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	RUBBER GLOVES OR COATED GLOVES (PVC OR NEOPRENE)	ANSI SAFETY VEST WHERE REQ'D
c. Chipping, Cutting	SAFETY GLASSES W SIDE SHIELDS or DUST GLASSES or DUST GOGGLES	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D
d. Cutting rivets/bolts with cutter	SAFETY GLASSES W SIDE SHIELDS & FACE SHIELDS CLEAR OR SPLASH GOGGLES	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	RUBBER GLOVES OR COATED GLOVES (PVC OR NEOPRENE)	ANSI SAFETY VEST WHERE REQ'D
e. Removing cotter keys with power tools	FACE SHIELD CLEAR & SPLASH GOGGLES	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	COATED GLOVES (PVC)	ANSI SAFETY VEST WHERE REQ'D
f. Remove cotter key with pliers or unpowered tools	FACE SHIELD CLEAR & SPLASH GOGGLES	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	COATED GLOVES (PVC)	ANSI SAFETY VEST WHERE REQ'D
g. Splitting nuts	DUST GOGGLES or DUST GLASSES	HARD HAT	WORK BOOTS; SAFETY TOE WHERE REQUIRED	LEATHER GLOVES	ANSI SAFETY VEST WHERE REQ'D

PUBLIC PROTECTION

- 1. Warning signs and devices will be placed as necessary to provide adequate warning of hazards to the public.
- 2. Visitors will not be permitted in work areas without clearance unless accompanied by a proper escort. Visitors will wear appropriate Personal Protective Equipment.
- 3. Open excavations will be backfilled as soon as practicable or otherwise protected.
- 4. Mobile equipment will be secured when left unattended to prevent tampering and hazards to persons or property.
- 5. If it becomes necessary to delay, detour or otherwise inconvenience the public, every effort will be made to do so as courteously and as safely as possible.
- Measures will be taken to control noise and dust levels created by project operations to comply with the applicable job specifications, regulations and local ordinances.
- 7. Work should be planned and conducted in a way that will not obstruct or inconvenience the public on existing roads outside the project.
- If necessary to operate on existing roads outside the construction area, all necessary permits will be obtained from the appropriate public or private authority.
- 9. If spillage of earth, rock, mud or other material occurs on a project or other roads, such spillage will be removed and kept clear throughout the day and at the end of each workday.

RESPIRATORY PROTECTION PROGRAM

INTRODUCTION

- 1. This program establishes the minimum requirements for the use of respiratory protective equipment, including selecting respirators, evaluating the medical condition of respirator users, fit testing, using respirators, maintaining respirators, ensuring adequate air quality, quantity, and flow for supplied-air respirators, employee training, and evaluating the effectiveness of this program.
- 2. When it is clearly impractical to remove respiratory hazards through engineering controls or where emergency protection against occasional or brief exposures is necessary, approved respiratory protective equipment will be issued and used in accordance with this program.
- 3. These requirements apply to all exposures in which employees are required or allowed to wear respiratory protective equipment.
- 4. The Safety Manager will oversee the respiratory protection program and conduct the required evaluations for the program's effectiveness.

PROCEDURES FOR SELECTING RESPIRATORS

- Before the selection of respirators, we must evaluate the potential respiratory hazard(s) in the workplace, identify relevant workplace and user factors, and base respirator selection on these factors. This evaluation should take place during the estimation phase of all work.
- 2. Respiratory hazards for the purpose of this program are classified as follows:
 - a. Oxygen deficiency
 - b. Gas and vapor contaminants
 - c. Particulate contaminants
 - d. Combinations of any of the hazards listed above
- 3. The evaluation must include a reasonable estimate of employee exposures to respiratory hazards and an identification of the contaminant's chemical state and physical form. Where employee exposure cannot be identified or reasonably estimated, the atmosphere must be considered to be immediately dangerous to life or health (IDLH).
- 4. An appropriate respirator, certified by the National Institute for Occupational Safety and Health (NIOSH) will be selected based on the respiratory hazards to which employees are exposed and workplace and user factors that affect respirator performance and reliability. Only respirators certified by NIOSH for use in a particular respiratory hazard will be used.
- 5. All filters, cartridges and canisters used in the workplace must be labeled and colorcoded with the NIOSH-approval label, and the label may not be removed and must remain legible.
- 6. Selection of respirators requires consideration of the following factors:
 - a. The classification of the hazard
 - b. The extent and concentration of the hazard
 - c. The duration of potential exposure
 - d. The work requirements and conditions
 - e. The characteristics and limitations of available respirators
- 7. The respirator selected must be appropriate for the chemical state and physical form of the contaminant and must be chosen from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the employee.
- 8. The respirator selected must be adequate to protect the health of the employee and ensure compliance with all other applicable OSHA statutory and regulatory requirements, under routine and reasonably foreseeable emergency situations.
 - a. The classification and extent of the hazard should be verified by monitoring and evaluation of potential employee exposure.

- 9. If the potential respiratory hazards in the workplace include IDLH atmospheres, one of the following types of respirators must be provided and used:
 - a. A full-face piece pressure demand SCBA certified by NIOSH for a minimum service life of thirty minutes.
 - b. A combination full face piece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.
- 10. If the potential respiratory hazards in the workplace are gases and vapors that are not IDLH, one of the following types of respirators must be provided and used:
 - a. An atmosphere-supplying respirator.
 - b. An air-purifying respirator, provided that:
 - (1). The respirator is equipped with an end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant.
 - (2). If there is no ESLI appropriate for conditions in the workplace, the program administrator must implement a change schedule for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life. The program administrator must document and attach to this respirator program the information and data relied upon and the basis for the canister and cartridge change schedule and the basis for reliance on the data.
- 11. If the potential respiratory hazards in the workplace are particulates that are not IDLH, one of the following types of respirators must be provided and used:
 - a. An atmosphere-supplying respirator.
 - An air-purifying respirator equipped with a filter certified by NIOSH under 30
 CFR part 11 as a high efficiency particulate air (HEPA) filter, or an air-purifying respirator equipped with a filter certified for particulates by NIOSH under 42
 CFR part 84.

c. For contaminants consisting primarily of particles with mass median aerodynamic diameters (MMAD) of at least 2 micrometers, an air-purifying respirator equipped with any filter certified for particulates by NIOSH.

MEDICAL EVALUATIONS OF EMPLOYEES REQUIRED TO USE RESPIRATORS

- 1. Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee. Accordingly, these are the minimum requirements for medical evaluation that must be implemented to determine an employee's ability to use a respirator before the employee is fit tested or required or allowed to use the respirator in the workplace.
- Each Project must select a Physician or other Licensed Health Care Professional (PLHCP) to perform medical evaluations. The PLHCP must be provided with a copy of this respiratory protection program and a copy of the OSHA regulation 29 CFR 1910.134 Respiratory Protection.

NOTE: If we replace a PLHCP, we must ensure that the new PLHCP receives this information, either by providing the documents directly to the new PLHCP or having the documents transferred from the former PLHCP to the new PLHCP. Employees do not need to be medically reevaluated solely because a new PLHCP has been selected.

- 3.. The PLHCP must perform medical evaluations using an OSHA Respirator Medical Evaluation Questionnaire or a medical examination that obtains the same information as Sections 1 and 2, Part A of the OSHA Respirator Medical Evaluation Questionnaire.
- 4. The OSHA Respirator Medical Evaluation Questionnaire and examinations must be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee. The OSHA Respirator Medical Evaluation Questionnaire must be administered so that the employee understands its contents. We must provide the employees with an opportunity to discuss the questionnaire and examination results with the PLHCP.
- 5. There must be a follow-up medical examination for an employee who gives a positive response to any question among questions 1 through 8 in Section 2, Part A of the OSHA Respirator Medical Evaluation Questionnaire or whose initial medical examination demonstrates the need for a follow-up medical examination.

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- 6. The follow-up medical examination will include any medical tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination.
- 7. The following information must be provided to the PLHCP before the PLHCP makes a recommendation concerning an employee's ability to use a respirator:
 - a. The type and weight of the respirator to be used by the employee.
 - b. The duration and frequency of respirator use (including use for rescue and escape).
 - c. The expected physical work effort.
 - d. Additional protective clothing and equipment to be worn.
 - e. Temperature and humidity extremes that may be encountered.
- 8. We must obtain a written recommendation regarding the employee's ability to use the respirator from the PLHCP. The recommendation must provide only the following information:
 - a. Any limitations on respirator use related to the medical condition of the employee, or relating to the workplace conditions in which the respirator will be used, including whether the employee is medically able to use the respirator. If, for instance, the respirator is a negative pressure respirator and the PLHCP finds a medical condition that may place the employee's health at increased risk if the respirator is used, we must provide a powered air-purifying respirator (PAPR) if the PLHCP's medical evaluation finds that the employee can use such a respirator.
 - b. The need, if any, for follow-up medical evaluations.
 - c. A statement that the PLHCP has provided the employee with a copy of the PLHCP's written recommendation.

- 9. Additional medical evaluations that comply with these requirements must be provided if any of the following occur:
 - a. An employee reports medical signs or symptoms that are related to ability to use a respirator.
 - b. A PLHCP, supervisor, or the respirator program administrator determines that an employee needs to be reevaluated.
 - c. Information from this respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluation.
 - d. A change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on an employee.

FIT TESTING PROCEDURES FOR TIGHT-FITTING RESPIRATORS

- 1. Before an employee may be required or allowed to use any respirator with a negative or positive pressure tight-fitting face piece, the employee must pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT) with the same make, model, style, and size of respirator that will be used.
- 2. An employee using a tight-fitting face piece respirator must be fit tested before initial use of the respirator, whenever a different respirator face piece (size, style, model or make) is used, and at least annually thereafter.
- 3. Additional fit tests must be conducted whenever the employee reports, or the PLHCP, supervisor, or program administrator makes visual observations of, changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.

- 4. If after passing a QLFT or QNFT, the employee subsequently notifies the program administrator, supervisor, or PLHCP that the fit of the respirator is unacceptable, the employee will be given a reasonable opportunity to select a different respirator face piece and to be retested.
- 5. The fit test must be administered using an OSHA-accepted QLFT or QNFT protocol. The OSHA-accepted QLFT and QNFT protocols and procedures are included at the end of this program.
- 6. QLFT may only be used to fit test negative pressure air-purifying respirators that must achieve a fit factor of 100 or less.
- 7. If the fit factor, as determined through an OSHA-accepted QNFT protocol, is equal to or greater than 100 for tight-fitting half face pieces, or equal to or greater than 500 for tight-fitting full-face pieces, the QNFT has been passed with that respirator.
- 8. Fit testing of tight-fitting atmosphere-supplying respirators and tight-fitting PAPRs will be accomplished by performing quantitative or qualitative fit testing in the negative pressure mode, regardless of the mode of operation that is used for respiratory protection.
 - a. Qualitative fit testing of these respirators will be accomplished by temporarily converting the respirator user's actual face piece into a negative pressure respirator with appropriate filters, or by using an identical negative pressure airpurifying respirator face piece with the same sealing surfaces as a surrogate for the atmosphere-supplying or powered air-purifying respirator face piece.
 - b. Quantitative fit testing of these respirators will be accomplished by modifying the face piece to allow sampling inside the face piece in the breathing zone of the user, midway between the nose and mouth. This requirement will be accomplished by installing a permanent sampling probe onto a surrogate face piece, or by using a sampling adapter designed to temporarily provide a means of sampling air from inside the face piece.
 - c. Any modifications to the respirator face piece for fit testing will be completely removed, and the face piece restored to NIOSH-approved configuration, before that face piece can be used in the workplace.

PROCEDURES FOR PROPER USE OF RESPIRATORS IN ROUTINE AND REASONABLY FORESEEABLE EMERGENCY SITUATIONS

- 1. These requirements include prohibiting conditions that may result in face piece seal leakage, preventing employees from removing respirators in hazardous environments, taking actions to ensure continued effective respirator operation throughout the work shift, and establishing procedures for the use of respirators in IDLH atmospheres.
- 2. Employees may not wear respirators with tight-fitting face pieces if they have:
 - a. Facial hair that comes between the sealing surface of the face piece and the face or that interferes with valve function.
 - b. Any condition that interferes with the face-to-face piece seal or valve function.
- 3. If an employee wears corrective glasses or goggles or other personal protective equipment, that equipment must be worn in a manner that does not interfere with the seal of the face piece to the face of the user.
- 4. Employees who use a tight-fitting respirator must perform a user seal check to ensure that an adequate seal is achieved each time the respirator is put on. Either the positive and negative pressure checks listed below, or the respirator manufacturers recommended user seal check method must be used. User seal checks are not substitutes for qualitative or quantitative fit tests.
 - a. To perform a positive pressure check close off the exhalation valve by covering with the palm of the hand and exhale gently into the face piece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the face piece for ten seconds without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.
 - b. To perform a negative pressure check close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s) and inhale gently into the face piece. The face fit is considered satisfactory if a slight negative pressure can be built up inside the face piece for ten seconds without any evidence of inward leakage of air at the seal.

- 5. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, the program administrator must reevaluate the continued effectiveness of the respirator.
- 6. The supervisor or program administrator must ensure that employees leave the respirator use area:
 - a. To wash their faces and respirator face pieces as necessary to prevent eye or skin irritation associated with respirator use.
 - b. If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece.
 - c. To replace the respirator or the filter, cartridge, or canister elements.
- 7. If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece, the respirator must be replaced or repaired before allowing the employee to return to the work area.
- 8. For all IDLH atmospheres, the supervisor must ensure that:
 - a. At least one standby employee is located outside the IDLH atmosphere.
 - b. Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the standby employee(s).
 - c. The standby employee(s) are trained to provide effective emergency rescue.
 - d. The program administrator is notified before the standby employee(s) enter the IDLH atmosphere to provide emergency rescue.
 - e. The program administrator, once notified, provides necessary assistance appropriate to the situation.
 - f. Standby employee(s) are equipped with a pressure demand or other positive pressure SCBAs, or a pressure demand or other positive pressure supplied air respirator with auxiliary SCBA; and either:

- (1). Appropriate retrieval equipment for removing the employee(s) who enter(s) these hazardous atmospheres where retrieval equipment would contribute to the rescue of the employee(s) and would not increase the overall risk resulting from entry; or
- (2). An equivalent means for rescue where retrieval equipment is not used because it increases the overall risk of entry.

PROCEDURES AND SCHEDULES FOR CLEANING, DISINFECTING, STORING, INSPECTING, REPAIRING, DISCARDING, AND OTHERWISE MAINTAINING RESPIRATORS

- 1. Each respirator user will be provided a respirator that is clean, sanitary, and in good working order. Respirators will be cleaned and disinfected using procedures recommended by the respirator manufacturer or the following procedures:
 - a. Remove filters, cartridges, or canisters. Disassemble face pieces by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
 - Wash components in warm (110° F maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
 - c. Rinse components thoroughly in clean, warm, preferably running water. Drain.
 - d. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
 - Hypochlorite solution (50 ppm of chlorine) is made by adding approximately one milliliter of laundry bleach to one liter of warm water.
 - (2). Aqueous solution of iodine (50 ppm iodine) is made by adding approximately 0.8 milliliters of tincture of iodine to one liter of warm water.

- (3). Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.
- e. Rinse components thoroughly in clean, warm, preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on face pieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
- f. Components should be hand-dried with a clean lint-free cloth or air-dried.
- g. Reassemble face piece, replacing filters, cartridges, and canisters where necessary.
- h. Test the respirator to ensure that all components work properly.
- 2. The respirators will be cleaned and disinfected at the following intervals:
 - a. Respirators issued for the exclusive use of an employee will be cleaned and disinfected as often as necessary to be maintained in a sanitary condition.
 - b. Respirators issued to more than one employee will be cleaned and disinfected before being worn by different individuals.
 - c. Respirators used in fit testing and training will be cleaned and disinfected after each use.
- 3. All respirators will be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they will be packed or stored to prevent deformation of the face piece and exhalation valve.
- 4. Respirators will be inspected periodically as follows:
 - a. All respirators will be inspected before each use and during cleaning.
 - b. Respirator inspections must include the following:

- A check of the function, tightness of connections, and the condition of the various parts including the face piece, head straps, valves, connecting tube, cartridges, canisters or filters.
- (2). A check of elastomeric parts for pliability and signs of deterioration.
- 5. Respirators that fail an inspection or are otherwise found to be defective must be removed from service and discarded or repaired or adjusted in accordance with the following procedures:
 - Repairs or adjustments to respirators are to be made only by people appropriately trained to perform such operations and who will use only the respirator manufacturer's NIOSH-approved parts designed for the respirator.
 - b. Repairs will be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed.
 - c. Reducing and admission valves, regulators, and alarms will be adjusted or repaired only by the manufacturer, or a technician trained by the manufacturer.

PROCEDURES TO ENSURE ADEQUATE AIR QUALITY, QUANTITY, AND FLOW OF BREATHING AIR FOR ATMOSPHERE-SUPPLYING RESPIRATORS

- 1. Compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration must meet the following specifications:
 - a. Compressed and liquid oxygen will meet the United States Pharmacopoeia requirements for medical or breathing oxygen.
 - b. Compressed breathing air will meet at least the requirements for Type 1-Grade
 D breathing air described in ANSI/Compressed Gas Association Commodity
 Specification for Air, G-7.1-1989, to include:
 - (1). Oxygen content (v/v) of 19.5-23.5%.
 - (2). Hydrocarbon content of 5 milligrams per cubic meter of air or less.
 - (3). Carbon monoxide (CO) content of 10 ppm or less.
 - (4). Carbon dioxide content of 1,000 ppm or less.
 - (5). Lack of noticeable odor.

- c. Compressed oxygen may not be used in atmosphere-supplying respirators that have previously used compressed air.
- d. Oxygen concentrations greater than 23.5% may only be used in equipment designed for oxygen service or distribution.
- e. Cylinders used to supply breathing air to respirators must meet the following requirements:
 - Be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR part 173 and part 178).
 - (2). Have a certificate of analysis from the supplier that the breathing air meets the requirements for Type 1-Grade D breathing air.
 - (3). The moisture content in the cylinder does not exceed a dew point of -50^o. F at one atmosphere pressure.
- f. Compressors used to supply breathing air to respirators are constructed and situated to:
 - (1). Prevent entry of contaminated air into the air-supply system.
 - (2). Minimize moisture content so that the dew point at one atmosphere pressure is 10°F below the ambient temperature.
 - (3). Have suitable in-line air-purifying sorbent beds and filters to further ensure breathing air quality. Sorbent beds and filters will be maintained and replaced or refurbished periodically following the manufacturer's instructions.
 - (4). Have a tag containing the most recent change date and the signature of the person authorized to perform the change. The tag must be maintained at the compressor.
- g. For compressors that are not oil-lubricated, the air supply will be monitored at intervals sufficient to prevent carbon monoxide levels in the breathing air from exceeding 10 ppm.

- h. For oil-lubricated compressors, a high-temperature and/or carbon monoxide alarm must be installed in line to monitor carbon monoxide levels. If only hightemperature alarms are used, the air supply must be monitored at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm.
- Breathing air couplings must be equipped with fittings that are incompatible with outlets for non-respirable worksite air or other gas systems. No asphyxiating substance may be introduced into breathing air lines.
- j. Breathing gas containers must be marked in accordance with the NIOSH respirator certification standard, 42 CFR part 84.

TRAINING OF EMPLOYEES IN RESPIRATORY HAZARDS AND THE PROPER USE OF RESPIRATORS

- 1. Effective training must be provided to employees who are required or allowed to use respirators. The training must be comprehensive, understandable, and repeated annually, and more often if necessary.
- 2. The training must be conducted so that it is understandable to the employees and must be completed before requiring or allowing employees to use respirators in the workplace.
- 3. The training must ensure that each employee can demonstrate knowledge of at least the following:
 - a. Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.

- b. What the limitations and capabilities of the respirator are.
- c. How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions.
- d. How to inspect, put on and remove, use, and check the seals of the respirator.
- e. What the procedures are for maintenance and storage of the respirator.
- f. How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
- h. The general requirements of this program and the OSHA regulation.
- 4. Retraining will be administered annually and when the following situations occur:
 - a. Changes in the workplace or the type of respirator render previous training obsolete.
 - b. Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the necessary level of understanding or skill.
 - c. Any other situation arises in which retraining appears necessary.
- If employees are allowed to wear respirators that are not required because of a hazardous atmospheric condition, the following additional basic advisory information on respirators must be provided:

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

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- 6. Employees must do the following:
 - Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.
 - b. 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.
 - c. Not wear respirators into atmospheres containing contaminants against which the respirator is not designed to protect. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
 - d. Keep track of their respirator so that they do not use someone else's respirator.

PROCEDURES FOR REGULARLY EVALUATING THE EFFECTIVENESS OF THE PROGRAM

- 1. The program administrator will conduct evaluations of the workplace as necessary to ensure that the provisions of the current written program are being effectively implemented and continue to be effective.
- The program administrator will regularly consult employees required to use respirators to assess the employees' views on program effectiveness and to identify any problems. Any problems that are identified during this assessment must be corrected. Factors to be assessed include, but are not limited to:
 - a. Respirator fit (including the ability to use the respirator without interfering with effective workplace performance).
 - b. Appropriate respirator selection for the hazards to which the employee is exposed.
 - c. Proper respirator use under the workplace conditions the employee encounters.
 - d. Proper respirator maintenance.

DEFINITIONS THAT APPLY TO THIS SUPPLEMENT

Abrasive-blasting Respirator means a respirator constructed so that it covers the wearer's head, neck, and shoulders to protect the wearer from rebounding abrasive.

Air-purifying Respirator means a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

Atmosphere-supplying Respirator means a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

Canister or Cartridge means a container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container. Demand Respirator means an atmosphere-supplying respirator that admits breathing air to the face piece only when a negative pressure is created inside the face piece by inhalation.

Emergency Situation means 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 significant release of an airborne contaminant.

Employee Exposure means exposure to a concentration of an airborne contaminant that would occur if the employee was not using respiratory protection.

End-of-service-life Indicator (ESLI) means 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.

Filtering Face piece (dust mask) means a negative pressure particulate respirator with a filter as an integral part of the face piece or with the entire face piece composed of the filtering medium.

Fit Factor means 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 means the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual. (See also qualitative fit test QLFT and quantitative fit test QNFT.)

High Efficiency Particulate Air (HEPA) filter means a filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.

Immediately Dangerous to Life or Health (IDLH) means 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.

Negative Pressure Respirator (tight fitting) means a respirator in which the air pressure inside the Face piece is negative during inhalation with respect to the ambient air pressure outside the respirator.

Oxygen Deficient Atmosphere means an atmosphere with an oxygen content below 19.5% by volume.

Physician or Other Licensed Health Care Professional (PLHCP) means an individual who's 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 section III of this program.

Positive Pressure Respirator means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

Powered Air-purifying Respirator (PAPR) means an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

Pressure Demand Respirator means a positive pressure atmosphere-supplying respirator that admits breathing air to the face piece when the positive pressure is reduced inside the face piece by inhalation.

Qualitative Fit Test (QLFT) means a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

Quantitative Fit Test (QNFT) means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

Self-contained Breathing Apparatus (SCBA) means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

Service Life means 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 means an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

Tight-fitting Face piece means a respiratory inlet covering that forms a complete seal with the face.

User Seal Check means an action conducted by the respirator user to determine if the respirator is properly seated to the face.

SAMPLE OSHA RESPIRATOR MEDICAL EVALUATION QUESTIONNAIRE

Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator

(please print and circle "yes" or "no").

1. Today's date: ______

2. Your name: ______

3. Your age (to nearest year):

4. Sex (circle one): M/F

5. Your height: _____ ft. _____ in.

- 6. Your weight: _____ lbs.
- 7. Your job title: _____

8. A phone number where you can be reached by the health care

professional who reviews this questionnaire (include the Area Code):

9. The best time to phone you at this number: _____

10. Has your employer told you how to contact the health care professional who will review this questionnaire: Yes/No

11. Check the type of respirator you will use (you can check more than one category):

a. _____ Disposable respirator (filter-mask, non-cartridge type only).

- b. ____ Other type (half-or full-face piece type, powered-air purifying, supplied-air, SCBA)
- 12. Have you worn a respirator: Yes/No If "yes," what type(s):

Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "yes" or "no").

- 1. Do you currently smoke tobacco or have you smoked tobacco in the last month: Yes/No
- 2. Have you ever had any of the following conditions?
 - a. Seizures (fits): Yes/No
 - b. Diabetes (sugar disease): Yes/No
 - c. Allergic reactions that interfere with your breathing: Yes/No
 - d. Claustrophobia (fear of closed-in places): Yes/No
 - e. Trouble smelling odors: Yes/No
- 3. Have you ever had any of the following pulmonary or lung problems?
 - a. Asbestosis: Yes/No
 - b. Asthma: Yes/No
 - c. Chronic bronchitis: Yes/No
 - d. Emphysema: Yes/No
 - e. Pneumonia: Yes/No
 - f. Tuberculosis: Yes/No
 - g. Silicosis: Yes/No
 - h. Pneumothorax (collapsed lung): Yes/No
 - i. Lung cancer: Yes/No
 - j. Broken ribs: Yes/No
 - k. Any chest injuries or surgeries: Yes/No
 - I. Any other lung problem that you've been told about: Yes/No
- 4. Do you currently have any of the following symptoms of pulmonary or lung illness?
 - a. Shortness of breath: Yes/No
 - b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes/No
 - c. Shortness of breath when walking with other people at an ordinary pace on level ground: Yes/No
 - d. Have to stop for breath when walking at your own pace on level ground: Yes/No
 - e. Shortness of breath when washing or dressing yourself: Yes/No
 - f. Shortness of breath that interferes with your job: Yes/No

- g. Coughing that produces phlegm (thick sputum): Yes/No
- h. Coughing that wakes you early in the morning: Yes/No
- i. Coughing that occurs mostly when you are lying down: Yes/No
- j. Coughing up blood in the last month: Yes/No
- k. Wheezing: Yes/No
- I. Wheezing that interferes with your job: Yes/No
- m. Chest pain when you breathe deeply: Yes/No
- n. Any other symptoms that you think may be related to lung problems: Yes/No
- 5. Have you ever had any of the following cardiovascular or heart problems?
 - a. Heart attack: Yes/No
 - b. Stroke: Yes/No
 - c. Angina: Yes/No
 - d. Heart failure: Yes/No
 - e. Swelling in your legs or feet (not caused by walking): Yes/No
 - f. Heart arrhythmia (heart beating irregularly): Yes/No
 - g. High blood pressure: Yes/No
 - h. Any other heart problem that you've been told about: Yes/No
- 6. Have you ever had any of the following cardiovascular or heart symptoms?
 - a. Frequent pain or tightness in your chest: Yes/No
 - b. Pain or tightness in your chest during physical activity: Yes/No
 - c. Pain or tightness in your chest that interferes with your job: Yes/No
 - d. In the past two years, have you noticed your heart skipping or missing a beat: Yes/No
 - e. Heartburn or indigestion that is not related to eating: Yes/No

f. Any other symptoms that you think may be related to heart or circulation problems: Yes/No

- 7. Do you currently take medication for any of the following problems?
 - a. Breathing or lung problems: Yes/No
 - b. Heart trouble: Yes/No
 - c. Blood pressure: Yes/No
 - d. Seizures (fits): Yes/No

8. If you've used a respirator, have you ever had any of the following problems? (If you've never used a respirator, check the following space and go to question 9:)

- a. Eye irritation: Yes/No
- b. Skin allergies or rashes: Yes/No

- c. Anxiety: Yes/No
- d. General weakness or fatigue: Yes/No
- e. Any other problem that interferes with your use of a respirator: Yes/No

9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes/No

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-face piece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

- 10. Have you ever lost vision in either eye (temporarily or permanently): Yes/No
- 11. Do you currently have any of the following vision problems?
 - a. Wear contact lenses: Yes/No
 - b. Wear glasses: Yes/No
 - c. Color blind: Yes/No
 - e. Any other eye or vision problem: Yes/No
- 12. Have you ever had an injury to your ears, including a broken ear drum: Yes/No
- 13. Do you currently have any of the following hearing problems?
 - a. Difficulty hearing: Yes/No
 - b. Wear a hearing aid: Yes/No
 - c. Any other hearing or ear problem: Yes/No
- 14. Have you ever had a back injury: Yes/No
- 15. Do you currently have any of the following musculoskeletal problems?
 - a. Weakness in any of your arms, hands, legs, or feet: Yes/No
 - b. Back pain: Yes/No
 - c. Difficulty fully moving your arms and legs: Yes/No
 - d. Pain or stiffness when you lean forward or backward: Yes/No
 - e. Difficulty fully moving your head up or down: Yes/No
 - f. Difficulty fully moving your head side to side: Yes/No
 - g. Difficulty bending at your knees: Yes/No
 - h. Difficulty squatting to the ground: Yes/No
 - i. Difficulty climbing a flight of stairs or a ladder carrying more than 25 lbs: Yes/No
 - j. Any other muscle or skeletal problem that interferes with using a respirator: Yes/No

Part B Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000') or in a place that has lower than normal amounts of oxygen: Yes/No

If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions: Yes/No

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: Yes/No

If "yes," name the chemicals if you know them: _____

3. Have you ever worked with any of the materials, or under any of the conditions, listed below:

- a. Asbestos: Yes/No
- b. Silica (e.g., in sandblasting): Yes/No
- c. Tungsten/cobalt (e.g., grinding or welding this material): Yes/No
- d. Beryllium: Yes/No
- e. Aluminum: Yes/No
- f. Coal (for example, mining): Yes/No
- g. Iron: Yes/No
- h. Tin: Yes/No
- i. Dusty environments: Yes/No
- j. Any other hazardous exposures: Yes/No
- If "yes," describe these exposures: ____
- 4. List any second jobs or side businesses you have:
- 5. List your previous occupations:
- 6. List your current and previous hobbies:
- 7. Have you been in the military services? Yes/No

If "yes," were you exposed to biological or chemical agents (either in training or combat): Yes/No

8. Have you ever worked on a HAZMAT team? Yes/No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): Yes/No

If "yes," name the medications if you know them: ____

- 10. Will you be using any of the following with your respirator(s)?
 - a. HEPA Filters: Yes/No
 - b. Canisters (for example, gas masks): Yes/No

c. Cartridges: Yes/No

11. How often are you expected to use the respirator(s)? (Circle "yes" or "no" for all answers that apply to you):

a. Escape only (no rescue): Yes/No

- b. Emergency rescue only: Yes/No
- c. Less than 5 hours per week: Yes/No
- d. Less than 2 hours per day: Yes/No
- e. 2 to 4 hours per day: Yes/No

f. Over 4 hours per day: Yes/No

12. While wearing a respirator is your work effort:

a. Light (less than 200 kcal per hour): Yes/No

If "yes," how long does this period last during the average

shift: ______hrs. _____mins.

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.

b. Moderate (200 to 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average

shift: _____hrs. ____mins.

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.

c. Heavy (above 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average

shift: ______hrs._____mins.

Examples of heavy work are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load.

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: Yes/No

If "yes," describe this equipment: _____

14. Will you be working under hot conditions (over 77 ºF): Yes/No

15. Will you be working under humid conditions: Yes/No

16. Describe the work you'll be doing while you're using your respirator(s):

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):

18. Provide the following information for each toxic substance that you'll be exposed to when you're using your respirator(s): Name of the first toxic substance:

Estimated maximum exposure level per shift: _____

Duration of exposure per shift ______

Name of the second toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the third toxic substance: ______

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

The name of any other toxic substances that you'll be exposed to while using your respirator:

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):

OSHA-ACCEPTED FIT TEST PROTOCOLS

- 1. Fit Testing must be conducted using the following procedures. These requirements apply to all OSHA-accepted fit test methods, both QLFT and QNFT.
 - a. The entire screening and testing procedure must be explained to the test subject before conducting the screening test.
 - b. The test subject must be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.
 - c. Before the selection process, the test subject must be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit.

- d. The test subject must be informed that he/she is being asked to select the respirator that provides the most acceptable fit. Each respirator represents a different size and shape, and if fitted and used properly, will provide adequate protection.
- e. The test subject must be instructed to hold each chosen face piece up to the face and eliminate those that obviously do not give an acceptable fit.
- f. The more acceptable face pieces are noted in case the one selected proves unacceptable; the most comfortable mask is donned and worn at least five minutes to assess comfort. Assistance in assessing comfort can be given by discussing the points in the following item A.7. If the test subject is not familiar with using a particular respirator, the test subject must don the mask several times and adjust the straps each time to become adept at setting proper tension on the straps.
- g. Assessment of comfort must include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:
 - (1). Position of the mask on the nose.
 - (2). Room for eye protection.
 - (3). Room to talk.
 - (4). Position of mask on face and cheeks.
- h. The following criteria must be used to determine the adequacy of the respirator fit:
 - (1). Chin properly placed.
 - (2). Adequate strap tension, not overly tightened.
 - (3). Fit across nose bridge.
 - (4). Respirator of proper size to span distance from nose to chin.
 - (5). The tendency of the respirator to slip.
- The test subject must conduct a user seal check. Before conducting the negative and positive pressure checks, the subject must seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another face piece must be selected if this test fails.

- j. Hair growth between the skin and the face piece sealing surface such as stubble beard growth; beard; mustache; or sideburns that cross the sealing surface may cause a failure and will have to be rectified.
- If the test subject exhibits difficulty in breathing during the test, the test must be terminated, and the subject referred to a physician or other licensed health care professional for assessment of fitness for respiratory usage.
- Before commencement of testing, the subject must be informed of the procedure and their responsibilities in the process. The respirator must be worn for at least 5 minutes prior to testing.
- m. The test must include wearing safety equipment the subject will use during their work if it appears it will interfere with the testing. (example: hoods, etc.) described in this program:
- n. The following test exercises are to be performed for all fit testing methods prescribed in this program. The test subject must perform exercises, in the test environment, in the following manner:
 - (1). Normal breathing. In a normal standing position, without talking, the subject must breathe normally.
 - (2). Deep breathing. In a normal standing position, the subject must breathe slowly and deeply, taking caution so as not to hyperventilate.
 - (3). Turning head side to side. Standing in place, the subject must slowly turn his/her head from side to side between the extreme positions on each side. The head must be held at each extreme momentarily so the subject can inhale at each side.
 - (4). Moving head up and down. Standing in place, the subject must slowly move his/her head up and down. The subject must be instructed to inhale in the up position (i.e., when looking toward the ceiling).
 - (5). Talking. The subject must talk out loud slowly and loud enough to be heard clearly by the test conductor.

- (6). Grimace. The test subject must grimace by smiling or frowning. (This applies only to QNFT testing; it is not performed for QLFT)
- (7). Bending over. The test subject must bend at the waist as if he/she were to touch his/her toes. Jogging in place must be substituted for this exercise in those test environments such as shroud type QNFT or QLFT units that do not permit bending over at the waist.
- (8). Normal breathing. Same as exercise a.
- o. Each test exercise must be performed for one minute except for the grimace exercise, which must be performed for 15 seconds. The test subject must be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator must be tried. The respirator must not be adjusted once the fit test exercises begin. Any adjustment voids the test, and the fit test must be repeated.
- 2. Qualitative Fit Test (QLFT) Protocols

The persons administering QLFT must be able to prepare test solutions, calibrate equipment and perform tests properly, recognize invalid tests, and ensure that test equipment is in proper working order. The QLFT equipment must be kept clean and well maintained so as to operate within the parameters for which it was designed.

- a. Bittrex[®] (Denatonium Benzoate) Solution Aerosol Qualitative Fit Test Protocol The Bittrex solution aerosol QLFT protocol uses the published saccharin test protocol because that protocol is widely accepted. Bittrex is routinely used as a taste aversion agent in household liquids that children should not be drinking and is endorsed by the American Medical Association, the National Safety Council, and the American Association of Poison Control Centers. The entire screening and testing procedure must be explained to the test subject before the conduct of the screening test.
 - (1). The Bittrex taste threshold screening, performed without wearing a respirator, is intended to determine whether the individual being tested can detect the taste of Bittrex.

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- (a) During threshold screening as well as during fit testing, subjects must wear an enclosure about the head and shoulders that is approximately 12 inches in diameter by 14 inches tall. The front portion of the enclosure must be clear from the respirator and allow free movement of the head when a respirator is worn. An enclosure substantially similar to the 3M hood assembly is adequate.
- (b) The test enclosure must have a 3/4-inch hole in front of the subject's nose and mouth area to accommodate the nebulizer nozzle.
- (c) The test subject must don the test enclosure. Throughout the threshold-screening test, the test subject must breathe through his or her slightly open mouth with tongue extended. The subject is instructed to report when he/she detects a bitter taste.
- (d) Using a ALLEGRO Model 2040-08N Inhalation Medication Nebulizer or equivalent, the test conductor must spray the Sensitivity Solution into the enclosure. This Nebulizer must be clearly marked to distinguish it from the fit test solution nebulizer.
- (e) The Sensitivity Solution is pre-prepared in commercial vials and placed in the nebulizer according to the manufacturer's instructions.
- (f) To produce the aerosol, the nebulizer bulb is firmly squeezed so that the bulb collapses completely and is then released and allowed to fully expand.
- (g) An initial ten squeezes are repeated rapidly, and then the test subject is asked whether the Bittrex can be tasted. If the test subject reports tasting the bitter taste during the ten squeezes, the screening test is completed. The taste threshold is noted as ten regardless of the number of squeezes actually completed.

- (h) If the first response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the Bittrex is tasted. If the test subject reports tasting the bitter taste during the second ten squeezes, the screening test is completed. The taste threshold is noted as twenty regardless of the number of squeezes actually completed.
- (i) If the second response is negative, ten more squeezes are repeated rapidly, and the test subject is again asked whether the Bittrex is tasted. If the test subject reports tasting the bitter taste during the third set of ten squeezes, the screening test is completed. The taste threshold is noted as thirty regardless of the number of squeezes actually completed.
- (j) The test conductor will count the number of squeezes required to cause a taste response.
- (k) If the Bittrex is not tasted after 30 squeezes (step 9), the test subject is unable to taste Bittrex and may not perform the Bittrex fit test.
- If a taste response is elicited, the test subject must be asked to take note of the taste for reference in the fit test.
- (m) Correct use of the nebulizer means that approximately 1 ml of liquid is used at a time in the nebulizer body.
- (n) The nebulizer must be thoroughly rinsed in water, shaken to dry, and refilled at least every four hours.
- (2). Bittrex Solution Aerosol Fit Test Procedure.
 - (a) The test subject may not eat, drink (except plain water), smoke, or chew gum for 15 minutes before the test.
 - (b) The fit test uses the same enclosure described above.

- (c) The test subject must don the enclosure while wearing the respirator. The respirator must be properly adjusted and equipped with particulate filter(s).
- (d) A second ALLEGRO Model 2040-08N Inhalation Medication Nebulizer or equivalent is used to spray the fit test solution into the enclosure. This nebulizer must be clearly marked to distinguish it from the screening test solution nebulizer.
- (e) The Bittrex Fit Test Solution is pre-prepared in commercial vials and placed in the nebulizer according to the manufacturer's instructions.
- (f) As before, the test subject must breathe through his or her slightly open mouth with tongue extended and be instructed to report if he/she tastes the bitter taste of Bittrex.
- (g) The nebulizer is inserted into the hole in the front of the enclosure, and an initial concentration of the fit test solution is sprayed into the enclosure using the same number of squeezes (either 10, 20 or 30 squeezes) based on the number of squeezes required to elicit a taste response as noted during the screening test.
- (h) After the aerosol is generated, the test subject must be instructed to perform the exercises in section XII. A. 15. of this program.
- Every 30 seconds the aerosol concentration must be replenished using one half the number of squeezes used in (7) above.
- (j) The test subject must indicate to the test conductor if at any time during the fit test the taste of Bittrex is detected. If the test subject does not report tasting the Bittrex, the test is passed.

- (k) If the taste of Bittrex is detected, the fit is deemed unsatisfactory, and the test is failed. A different respirator must be tried, and the entire test procedure is repeated (taste threshold screening and fit testing).
- Quantitative Fit Testing Procedures
 Quantitative fit testing will be accomplished utilizing a certified testing lab.

RIGGING

- 1. Ropes, slings, chains, hooks and fittings will be inspected by a competent person for proper affixed and readable identification labels denoting manufacturers recommended safe working loads, wear, and damage before each use. Rigging components including slings and shackles will be used in accordance with the manufacturer's recommendations and safe working loads. Deformed hooks or rings shall be replaced or repaired and reshaped under proper metallurgical control and proof testing.
- 2. Wire rope slings and rigging including but not limited to hooks will be inspected by a competent person at regular intervals and will be removed from service when any of the defects listed in the instructions of the "Crane Inspection and Maintenance Log" are noted. Wire rope slings shall not be kinked, shortened with knots; bolts; or other makeshift devices.
- 3. Chains should not be used for load carrying service and proof coil steel chains shall not be used for hoisting purposes. Wrought iron chains in constant use shall be annealed or normalized at 6-month intervals or less when and AS recommended by the manufacturer's SPECIFICATIONS.
- 4. If it becomes necessary to use chains for load carrying service, only welded alloy steel chain slings having permanently affixed durable identification of size, grade, rated capacity and manufacturer, will be used and every link will be thoroughly inspected for evidence of cracks, elongation, wear and other signs of damage before each use.
- 5. Hooks will be equipped with a safety latch or moused close where there is a danger of relieving tension on the hook due to the load fouling, and whenever lifting personnel or lifting loads over personnel.

- 6. Hooks, rings and other attachments will have a rated capacity at least equal to that of the chain being used. If no manufacturers recommendations are available, components shall be tested to twice the recommended safe working load prior to being placed in service.
- 7. Slings and chokers will be protected by padding or other approved means to prevent damage by sharp edges of the load.
- 8. Tag lines for controlling loads will be used when necessary for protection of personnel and property. Balancing loads on slings shall utilize a basket hitch to prevent slippage and shall always be set to avoid slippage.
- 9. When shackles are used, the live end of the sling or choker will not run across the shackle pin.
- 10. Prior to rigging any load, the following precautions will be taken:
 - a. Determine the weight of the load.
 - b. Determine the center of gravity and size of the load.
 - c. Obtain rigging equipment with appropriate size and rated capacity for the load, providing a safety factor of at least 5.
 - d. Inspect all rigging equipment and remove any components with defects that affect safety.
- 11. All rigging equipment should be removed from the work area and stored when not in use.
- 12. Employees shall never be allowed under loads and all rigging will be conducted according to MJ Hughes Rigging and Signaling Training Program and shall always deep hands and fingers clear of slings and loads while being tightened or used in any manner.
- 13. Shock loading is never allowed, and slings shall not be forcibly pulled out from under loads.

14. Special custom design grabs, hooks, clamps, or other devices 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 to 125% of the rated load prior to being placed in service.

SCAFFOLDS

- 1. Scaffolds must be inspected and approved by a supervisor prior to initial use and after any alteration, repair; or movement. Any person accessing or erecting scaffolds must be qualified by documented training. Training will include hazards such as electrical etc. and retraining required for changing conditions or absence of scaffold use for 1 year or more.
- 2. There is no such thing as a temporary scaffold. All scaffolding must be erected and maintained to conform to all established requirements of 29CFR 1926 Subpart L including load ratings for light scaffolds at a carrying capacity of 25#s per square foot, medium at 50#'s per square foot, and heavy scaffolds at 75#'s per square foot. They shall be leveled by means of screw jacks or another approved method. Any scaffold not meeting regulatory requirements will be tagged as unusable and access disabled.
- 3. Guardrails, mid-rails, and toe-boards must be installed on all open sides and ends on any scaffold more than 30" in height.
- 4. Guardrails, mid-rails, and toe-boards should be constructed from components furnished by the manufacturer. Where this is not possible, lumber graded "Select", which is sound and free of defects, must be used. Always use 2x4 inch lumber for guardrails and a minimum of 1x6 inch lumber for toe-boards.
- Scaffold planks must be at least 2x10 inch, scaffold grade ("Select Structural") lumber or equivalent, and span not more than one foot for each inch of the plank width between the end supports.
- 6. Scaffold planks must be cleated or otherwise secured and must extend over the end supports at least 6 inches but not more than 12 inches.

- 7. All scaffolds must be at least two (2) planks wide regardless of height and shall not exceed three times the smallest dimension of the base. The planks should cover the entire space between uprights but in no case be further than 8 inches from the outside guardrail and 14 inches from the building or structure. No employee shall work from a single plank.
- 8. Scaffold planks must be visually inspected before each use. Defective or damaged planks must be removed from use immediately.
- 9. Access ladders must be provided for every scaffold 4 feet or more in height and must provide an unobstructed and safe means of access. Climbing any portion of a scaffold frame is prohibited unless the design incorporates an unobstructed and safe means of access with rungs 12 inches on center.
- 10. Adequate mudsills or other rigid footing, capable of withstanding the maximum intended load must be provided.
- 11. Scaffolds must be tied to the building or structure at intervals, which do not exceed 20 feet horizontally and vertically. At least ONE row of ties is required, regardless of the scaffold height.
- 12. Do not overload any scaffold. Materials must be brought up as needed and not exceed 75 pounds. A scaffold must not be loaded more than one-fourth (1/4) its rated capacity.
- 13. Makeshift scaffolds and barrels, boxes, kegs, and similar unstable objects must never be used as work platforms or to support scaffolds. Their use will result in immediate discharge.
- A scaffold permit is required and must be posted for any scaffold over three (3) stories in height. This must be obtained from the superintendent before the scaffold can be erected.
- 15. Where persons are required or permitted to work or pass under a scaffold, a screen of 18 gauge, ½ inch standard wire mesh or equivalent material is required between the toe-board and the top rail.

16. Overhead protection is required if employees working on a scaffold are exposed to overhead falling hazards. Such protection must be 2-inch planking or equivalent.

ROLLING SCAFFOLDS

- 1. The platform must cover the entire space between the uprights and must be cleated with at least one-inch material at each end.
- 2. Casters must be properly designed for strength and dimensions and be provided with locking devices. At least 2 of 4 casters must be swivel-type and the casters must be locked before anyone is permitted to climb or work aloft on any rolling scaffold.
- The height of any rolling scaffold must not exceed three (3) times the width of the scaffold base unless substantial outriggers are provided. Every rolling scaffold must be rigid and self-supporting.

SUSPENDED SCAFFOLDS

- 1. Suspended scaffolds must not be less than 20 inches nor more than 36 inches wide unless they are engineered.
- Wire ropes or chains used to suspend such scaffolds must have a safety factor six
 (6) times the maximum intended load.
- 3. Non-conductive insulating material must be placed over the suspension of cables of each scaffold for protection when the chance of contact with an electrical current exists.
- 4. Each worker must be secured to the structure, or an independent lifeline suspended from above on non-engineered scaffolds.

NEEDLE BEAM SCAFFOLDS

- 1. All needle beam scaffolds must be constructed to support the intended load with a safety factor of four (4).
- 2. All persons working from needle beam scaffolds must use a safety harness and lifeline.

- 3. Needle beams must be at least 4x6 inches, and the span must not exceed 10 feet on center.
- 4. Rope supports must be at least 1 inch manila or larger, attached to the scaffold with a hitch or eye splice, properly secured to prevent the beam from rolling or being displaced.
- 5. Needle beams suspended by wire rope must be secured with three (3) wire clamps, properly attached.

FLOAT SCAFFOLDS

- 1. Floats are intended to support mot more than three (3) workmen and a few tools. They must be inspected carefully prior to each use.
- The platform must be constructed from ¾ inch exterior grade plywood, Grade B-B or better. The minimum width must be 3 feet, and the minimum surface must be 18 square feet.
- 3. The supporting beams must be 2x4 inch "Select" lumber and must project at least 6 inches beyond each side of the platform.
- 4. A toe-board consisting of a 1x2 inch edging must be placed on all sides of the platform to prevent tools and materials from rolling off.
- 5. Supporting ropes must be 1 inch manila, or equivalent, in "as new" condition and must be fastened so that the platform cannot slip or shift.
- 6. When working from floats, workmen must wear a safety harness and lifeline.
SILICA

PURPOSE

The purpose of an exposure control plan (ECP) is to protect workers from harmful exposure to airborne silica dust.

A combination of control measures may be required to achieve this objective. The following guidelines are to be utilized whenever a need for exposure control arises.

SILICA PROPERTIES

- Silica is the second most common mineral on earth and makes up nearly all of what we call "sand" and "rock. Silica exists in many forms and one of these, "crystalline" silica including quartz, is the most abundant and poses the greatest concern for human health. Some common materials that contain silica include:
 - a. Rock and Sand
 - b. Topsoil and fill
 - c. Concrete, cement, and mortar
 - d. Masonry, brick, and tile
 - e. Granite, sandstone, and slate
 - f. Asphalt (containing sand and stone)
 - g. Fibrous-cement board containing silica
- 2. Silica is a primary component of many common construction materials, and silica containing dust can be generated during many construction activities including:
 - a. Abrasive blasting (of concrete structures)
 - b. Jackhammering, chipping, or drilling rock or concrete
 - c. Cutting brick or tiles
 - d. Sawing or grinding concrete
 - e. Tuck point grinding
 - f. Road construction
 - g. Loading, hauling, and dumping gravel
 - h. Demolition of structures containing concrete
 - i. Sweeping concrete dust.
- 3. Unprotected employees performing such activities, or working in the vicinity, can be exposed to harmful levels of airborne silica and thus controls must be enacted for adequate protection.

HEALTH HAZARDS

- 1. Exposure to silica has been shown to cause silicosis, lung cancer, pulmonary tuberculosis and other airway diseases. Crystalline silica dust can cause a disabling, sometimes fatal disease called silicosis. The fine particles are deposited in the lungs, causing thickening and scarring of lung tissue. This scar tissue restricts the lungs' ability to extract oxygen from the air. This damage is permanent, but symptoms of the disease may not appear for many years.
- 2. A worker may develop any of the three types of silicosis, depending on the concentrations of silica dust and the duration of the exposure:
 - a. Chronic silicosis develops after 10 or more years after initial exposure to crystalline silica at relatively low concentrations.
 - b. Accelerated silicosis develops 5-10 years after initial exposure to crystalline silica at high concentrations.
 - c. Acute silicosis develops within a few weeks, or 4-5 years after exposure to very high concentrations of crystalline silica.
- 3. Initially workers with silicosis may have no symptoms; however, as the disease progresses, a worker may experience:
 - a. Shortness of breath
 - b. Sever cough
 - c. Weakness
- 4. Symptoms can worsen over time and lead to death. Exposure to silica has also been linked to other diseases, including bronchitis, tuberculosis, and lung cancer.

BEST PRACTICES

 Best practices include measures to be used to prevent the uncontrolled release of silica and the procedures to be followed if there is an uncontrolled release. Engineering controls such as ventilation or wet methods will be used to control silica-containing dusts.

RISK IDENTIFICATION, ASSESSMENT AND CONTROL

- The potential for employee exposure to silica should be identified during the hazard assessment. A worker's exposure to Silica is kept as low as reasonably achievable. Employees must not be exposed to airborne concentrations of silica in excess of 50 milligrams over an 8-hour period. Atmospheric testing results must be assessed before an employee is exposed or use of Table 1 of rule CFR 1926.1153 found at www.osha.gov/silica.
- 2. A key step in silica exposure control plan is to identify the work activities that would put employees at risk of exposure:
 - a. Work activities that would generate airborne silica dust necessitating a qualified person to review the planned work activities to identify those that may generate airborne silica.
 - b. Identify workers at risk of exposure.
 - c. Amount of exposure some work activities generate more dust than others, and the amount of exposure should be estimated. Published resources are available online that provide air sampling data and compare silica dust levels from various construction activities. (<u>www.silica-safe.org</u> or <u>www.osha.gov/silica</u> table 1 for example)
 - d. Duration of exposure employees who grind concrete for a full shift would be at greater risk than employees jackhammering for an hour.

CONTROL OPTIONS

1. Effective control options must be used to eliminate or reduce the risk to employees of the hazards of silica dust exposure. The following hierarchy of control measures must be followed:

- a. Elimination/substitution e.g. using products with less silica or using work methods that would eliminate the need for surface disruption.
- b. Engineering controls e.g. water, local exhaust ventilation, enclosure.
- c. Administrative controls e.g. coordination of tasks with subcontractors, signage.
- e. The use of proper PPE such as gloves, coveralls, respirators, and eye protection.

PERSONAL PROTECTIVE EQUIPMENT

1. Respiratory protection:

- a. All employees who wear respirators will do so in accordance with our respiratory program contained in the safety manual.
- b. Respirators must be selected based upon measured exposure levels and the assigned protection factor of respirators.
- c. Only approved respirators will be used.
- d. Workers who wear respirators will be ensured they have the same facial configurations (beard, mustache, etc.) as when they were fit tested.
- e. Workers who wear respirators will be trained and fit tested for the type of respirator in use.
- 2. Protective clothing:
 - a. Employees exposed to silica dust will be provided with appropriate protective clothing such as TYVEK suits with hoods, booties; etc. where exposures cannot be contained by wet systems or vacuums.
 - b. Street clothing shall not be used during operations that create silica dust exposures, and if worn under protective clothing, taping must be utilized to ensure street clothing doesn't become contaminated.

c. Under exposure conditions, areas will be provided for contaminated protective clothing removal with controls such as vacuum use to eliminate contamination of street clothing. (Blowing dust off with compressed air is prohibited)

HEALTH MONITORING

- 1. Employees engaging in work creating silica dust exposures, must be offered a physical examination including TB, spirometry testing and chest x-ray prior to work in silica producing environs for MJ Hughes Construction, to establish a baseline and if accepted shall have a monitoring examinations every three years thereafter.
- 2. Records shall be kept of these examinations as well as exposure sampling if not according to table 1 of the rule.

TRAINING AND EDUCATION

- 1. Any employee who may be exposed to silica is to be informed and trained in the following:
 - a. Hazards associated with exposure to silica dust.
 - b. The risks of exposure to silica and how to report exposure.
 - c. Signs and symptoms of silica diseases.
 - d. Safe work procedures to be followed e.g. enclosures, donning and doffing of personal protective equipment, respiratory protection including cleaning.
 - e. Use of control systems such as vacuums and wetting.
 - f. How to seek first aid such as eye wash stations.

NOTE: OSHA TABLE 1 MAY BE USED IN LIEU OF EXPOSURE TESTING

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
Stationary masonry saws	 Use saw equipped with integrated water delivery system that continuousl y feeds water to the blade. Operate and maintain tool in accordance with manufactur er's instructions to minimize dust emissions. 	(None required)	(None required)
Handheld power saws (any blade diameter)	• Use saw equipped with integrated water delivery system that continuousl y feeds water to the blade.		

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	• Operate and maintain tool in accordance with manufactur er's instructions to minimize dust emissions:		
	- When used outdoors	(None required)	(APF 10 required)

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	- When used indoors or in an enclosed area	(APF 10 required)	(APF 10 required)
Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less)	 For tasks performed outdoors only: Use saw equipped with commercial ly available dust collection system. Operate and maintain tool in 	(None required)	(None required)

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	 accordance with manufactur er's instructions to minimize dust emissions. Dust collector must provide the airflow recommend ed by the tool manufactur er, or greater, and have a filter with 99% or greater efficiency. 		
Walk-behind saws	• Use saw equipped with integrated water delivery system that continuousl y feeds water to the blade.		

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	• Operate and maintain tool in accordance with manufactur er's instructions to minimize dust emissions:		
	- When used outdoors	(None required)	(None required)
	- When used indoors or in an enclosed area		

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
		(APF 10 required)	(APF 10 required)
Drivable saws	 For tasks performed outdoors only: Use saw equipped with integrated water delivery system that continuousl y feeds water to the blade. Operate and maintain tool in accordance with manufactur er's instructions to minimize 	(None required)	(None required)

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Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	dust emissions.		
Rig-mounted core saws or drills	 Use tools equipped with integrated water delivery system that supplies water to cutting surface. Operate and maintain tool in accordance with manufactur er's instructions to minimize dust emissions. 	(None required)	(None required)

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
Handheld and stand-mounted drills (including impact and rotary hammer drills)	 Use drill equipped with commercial ly available shroud or cowling with dust collection system. Operate and maintain tool in accordance with manufactur er's instructions to minimize dust emissions. Dust collector must provide the airflow recommend ed by the tool manufactur er, or greater, and have a filter with 99% or greater efficiency 	(None required)	

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	 and a filter- cleaning mechanism. Use a HEPA- filtered vacuum when cleaning holes. 		
<image/>	 For tasks performed outdoors only: Use shroud around drill bit with a dust collection system. Dust collector must have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when 	(APF 10 required)	<image/>

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	cleaning holes.		
Vehicle-mounted drilling rigs for rock and concrete	Use dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector.	(None required)	(None required)
	OR		
	Operate from within an enclosed cab and use water for dust suppression on drill bit.		
		(None required)	(None required)
Jackhammers and handheld powered chipping tools	Use tool with water delivery system that		

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	supplies a continuous stream or spray of water at the point of impact:		
	- When used outdoors	(None required)	
		(rone required)	(APF 10 required)
	- When used indoors or in an enclosed area		

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
		(APF 10 required)	(APF 10 required)
	 OR Use tools equipped with commercial ly available shroud and dust collection system. Operate and maintain tool in accordance with manufactur er's instructions to minimize dust emissions. 		

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	• Dust collector must provide the airflow recommend ed by the tool manufactur er, or greater, and have a filter with 99% or greater efficiency and a filter- cleaning mechanism :		
	- When used outdoors	(None required)	

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
			(APF 10 required)
	- When used indoors or in an enclosed area		
		(APF 10 required)	(APF 10 required)

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
Handheld grinders for mortar removal (i.e., tuckpointing)	 Use grinder equipped with commercial ly available shroud and dust collection system. Operate and maintain tool in accordance with manufactur er's instructions to minimize dust emissions. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater 	Image: constraint of the second sec	

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	efficiency and a cyclonic pre- separator or filter- cleaning mechanism.		
Handheld grinders for uses other than mortar removal	 For tasks performed outdoors only: Use grinder equipped with integrated water delivery system that continuousl y feeds water to the grinding surface. Operate and maintain tool in accordance with manufactur er's instructions to minimize 	(None required)	(None required)

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	dust emissions.		
	OR		<u></u>
	 Use grinder equipped with commercial ly available shroud and dust collection system. Operate and maintain tool in accordance with manufactur er's instructions to minimize dust emissions. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per 		

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre- separator or filter- cleaning mechanism :		
	- When used outdoors	(None required)	(None required)

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	- When used indoors or in an enclosed area	(None required)	(APF 10 required)
Walk-behind milling machines and floor grinders	 Use machine equipped with integrated water delivery system that continuousl y feeds water to the cutting surface. Operate and maintain 	(None required)	(None required)

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Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	tool in accordance with manufactur er's instructions to minimize dust emissions.		
	 Use machine equipped with dust collection system recommend ed by the manufactur er. Operate and maintain tool in accordance with manufactur er's instructions to minimize dust emissions. 	(None required)	When the two provided in the two pr

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	 Dust collector must provide the airflow recommend ed by the manufactur er, or greater, and have a filter with 99% or greater efficiency and a filter- cleaning mechanism. When used indoors or in an enclosed area, use a HEPA- filtered vacuum to remove loose dust in between passes. 		

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
style="color: black" Small drivable milling machines (less than half-lane)	 Use a machine equipped with supplement al water sprays designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions. 	(None required)	(None required)
Large drivable milling machines (half-lane and larger)	For cuts of any depth on asphalt only: • Use machines equipped with exhaust ventilation on drum enclosure and supplement al water	(None required)	(None required)

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Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	 sprays designed to suppress dust. Operate and maintain machine to minimize dust emissions. 		
	 For cuts of four inches in depth or less on any substrate: Use machines equipped with exhaust ventilation on drum enclosure and supplement al water sprays designed to suppress dust. Operate and maintain machine to 	(None required)	(None required)

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	minimize dust emissions.		
	OR		
	 Use a machine equipped with supplement al water spray designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions. 	(None required)	(None required)

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	 Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (e.g., hoppers, conveyors, sieves/sizin g or vibrating component s, and discharge points). Operate and maintain machine in accordance with manufactur er's instructions to minimize dust emissions. Use a ventilated 	(None required)	

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
	booth that provides fresh, climate- controlled air to the operator, or a remote- control station.		
Heavy equipment and utility vehicles used to abrade or fracture silica-containing materials (e.g., hoe-ramming, rock ripping) or used during demolition activities involving silica-containing materials	Operate equipment from within an enclosed cab.	(None required)	(None required)
	When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions.	(None required)	(None required)

Equipment/Task	Engineerin g and Work Practice Control Methods	Respirator Requirements and Minimum Assigned Protection Factor (APF) for 4 Hours or Less	Respirator Requirements and Minimum Assigned Protection Factor (APF) for More Than 4 Hours
Heavy equipment and utility vehicles for tasks such as grading and excavating but not including Demolishing, abrading, or fracturing silica-containing materials	Apply water and/or dust suppressants as necessary to minimize dust emissions.	(None required)	(None required)
	OR		
	When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab.	(None required)	(None required)

STATIONARY MACHINERY AND PLANT INSTALLATIONS

- All conveyor drive, head, tail, and take-up pulleys 7 feet or less above the ground or working level will be guarded in such a manner that prevents persons from reaching behind the guard and being caught between the belt and the pulley.
- 2. All gears, sprockets, flywheels, couplings, shafts and similar moving machine parts 7 feet or less above the ground or working level will be guarded. All overhead drive pulleys where the hazard of a broken drive belt exists will be guarded.
- 3. If it is necessary to remove the guards to perform maintenance or repairs the guards must be replaced before the equipment is restarted.
- 4. A safe means of access, such as ladders, ramps, stairs or catwalks will be provided to elevated work areas.
- 5. Standard guardrails, with a mid-rail and toe boards, will be installed on the open sides of all elevated platforms 4 feet or more above the ground, floor or level below.
- 6. A safety inspection of each workplace within a plant will be made by a competent person at least once each shift. Conditions that affect the safety of personnel will be corrected. A record of the inspection and the action taken to correct any conditions identified will be maintained at the plant site for at least one year.
- 7. When the entire length of a conveyor is not visible from the starting switch, a positive audible alarm will be sounded to warn personnel before the conveyor is started.
- 8. Whenever maintenance or repairs are performed on electrically powered machinery the electric circuit will be de-energized and the switch will be locked open and tagged to prevent inadvertent operation of the machinery.
- 9. The continuity and resistance of plant grounding systems will be tested immediately after installation, repair or modification and annually after that. Records of the tests will be maintained at the plant site for at least one year.

Note: Personnel working at aggregate crushing and milling plants must receive additional training in accordance with the requirements in 30 CFR Part 46 or Part 48 as applicable.

SUBCONTRACTORS

- 1. Subcontractors will be prequalified by their safety programs and statistics. They will be given a copy of this program and are responsible for providing safe working conditions and safety procedures for their employees including but not limited to:
 - a. Work within the scope of the subcontract must be performed in accordance with all applicable laws and regulations.
 - b. Safely perform all work to the contract specifications.
 - c. Inform the responsible individual at MJ Hughes Construction of any hazardous conditions created by the subcontractors' operations.
 - d. Participate in pre=construction project meetings; safety meetings; and inspections when work within the scope of their subcontract is in progress.
 - e. Prepare and submit to the project superintendent a site-specific Job Hazard Analysis (JHA) for each phase and/or operation.
 - f. Maintain SDS sheets and ensure employee familiarity and location.
 - g. Subcontractors will be reviewed post project for their safety performance.

SHOP PERSONNEL

 Shop personnel are responsible for all applicable sections of this program including yard storage. In addition, the shop manager is responsible for compliance with 49CFR and 29 CFR requirements for motor vehicle safety and hazardous materials.

TRAFFIC CONTROL

- 1. When work encroaches upon or is close to traveled roadways, traffic control measures will be used in accordance with the authorizing agency and following State or Federal standards for uniform traffic control signs and devices.
- 2. Barricades and warning and direction signs of sufficient size and number will be placed at appropriate locations to warn the public of lane closures and other traffic control measures.
- 3. The condition of traffic control devices will be monitored periodically to ensure their proper operation.
- 4. Traffic control devices should be removed or covered upon completion of the work protected by such devices.
- 5. Personnel shall wear attire meeting the requirements of ANSI 107-2010 as detailed in Section U "Personal Protective Equipment" 5 and 5a.
- 6. Flag persons will be used at all locations where barricades and signs are inadequate to control traffic or as required by specific site safety requirements.
- 7. Flag persons will be trained and certified in the proper techniques of flagging traffic.
- 8. Personnel responsible for traffic control will be trained and certified in the fundamentals of traffic control and the proper use of traffic control devices. Note: Traffic control signs and devices will conform to the "Manual on Uniform Traffic Control Devices for Streets and Highways." This Manual is available from State Departments of Transportation.

WILDFIRE SMOKE SAFETY PLAN (Washington)

The Wildfire Smoke Safety Plan for MJ Hughes Construction Company in compliance with 296-820 WAC involves several key steps to ensure the safety and well-being of employees during periods of poor air quality due to wildfire smoke.

1. Introduction

- Purpose: To protect the health of MJ Hughes employees during periods of wildfire smoke.
- Scope: Applies to all employees working outdoors or in poorly ventilated areas during wildfire smoke events.

2. Responsibilities

- **Management**: Responsible for implementing and maintaining the plan.
- **Employees**: Required to adhere to guidelines and report concerns promptly.

3. Hazard Identification

- Define what constitutes hazardous levels of wildfire smoke based on local air quality index (AQI) or other relevant metrics.
- Identify outdoor tasks and locations most affected by smoke exposure. Some acceptable sources of unhealthful air information are listed below:
 - WA Department of Ecology Air Quality Monitoring Network: Interactive map <u>https://enviwa.ecology.wa.gov/home/map</u>
 - – Reports: https://enviwa.ecology.wa.gov/Report/MatrixReportNew
 - U.S. Environmental Protection Agency (EPA) Fire and Smoke Map: <u>https://fire.airnow.gov</u>

4. Communication

- Management will monitor air quality forecasts and real-time conditions and initiate hazard communication with affected employees and project sites.
- The Safety Department will take the lead and communicate with Project Superintendent in determining when and how the hazard will be managed at the project level.
- Employees will be notified by their immediate supervisor as to how the hazard will be mitigated.
- 5. Control Measures
- Engineering Controls:
 - Encourage indoor work where feasible during hazardous air quality conditions.
Provide enclosed, filtered areas for tasks that must be performed outdoors (if applicable).

• Administrative Controls:

- Adjust work schedules to minimize outdoor exposure during peak smoke times.
- Rotate tasks to reduce individual exposure.
- Allow flexible work arrangements when air quality is severely impacted.
- Personal Protective Equipment (PPE):
 - Provide N95 or higher respirators for employees working outdoors in hazardous conditions.
 - Train employees on proper respirator use, fit testing, and maintenance.

6. Training

- Conduct training sessions for all employees on:
 - The health effects of wildfire smoke exposure.
 - How to recognize hazardous air quality levels.
 - Procedures for using respirators and other protective measures.

7. Response Plan

- Actions to be taken when air quality reaches hazardous levels:
 - Immediate suspension of outdoor work if AQI thresholds are exceeded.
 - Evacuation procedures if necessary.
 - Protocols for monitoring employees' health and providing medical assistance as needed.

8. Recordkeeping

- Maintain records of:
 - Air quality monitoring results.
 - Employee training sessions.
 - Respirator fit testing and distribution.

9. Review and Revision

• This plan will be reviewed as needed to ensure effectiveness and compliance with regulations. The plan will be updated based on feedback, new information, or changes in regulations.

10. Compliance

- Ensure all measures align with 296-820 WAC requirements.
- Conduct periodic audits to verify compliance and address any deficiencies.

11. Emergency Contacts

- Patrick Nowak Safety Manager 360.553.2089
- Ryan Nickerson Director of Operations 503.577.8527

By implementing this Wildfire Smoke Safety Plan, MJ Hughes Construction Company can effectively safeguard the health and safety of its employees during wildfire smoke events, ensuring compliance with regulatory standards and promoting a proactive approach to environmental health concerns.

WORK OVER WATER

 Employees working over or near water, where the danger of drowning exists, will wear U.S. Coast Guard approved personal flotation devices of a type that will support an unconscious person's head above water.

Exception: Personal flotation devices are not required where employees are continuously protected by guardrails, safety nets or a personal fall arrest system in accordance with the Fall Prevention Section of this manual.

- 2. Before and after each use, personal flotation devices will be inspected. If there are defects that could affect strength or buoyancy, the units will not be used.
- 3. U. S. Coast Guard approved 30-inch ring buoys with at least 150 feet of 600-pound capacity line will be readily available for emergency rescue operations. Distance between ring buoys will not exceed 200 feet.
- 4. One or more lifesaving boats will be always provided and readily accessible. Lifesaving boats will be properly maintained, ready for emergency use and equipped with oars and oarlocks attached to the gunwales, boathook, anchor, ring buoy with 50 feet of 600-pound capacity line and two personal flotation devices. Oars are also required on boats that are powered by an inboard motor.
- 5. Where, because of swift currents, lifeboats cannot be used, a line will be stretched across the stream with tag lines or floating planks trailing in the water at intervals not to exceed 6 feet. If this is impracticable, some other arrangement for providing effective lifelines near the water surface will be provided.