BENCHMARK
houston builders

DESIGN BUILD • CONSTRUCTION MANAGEMENT

SAFETY AND HEALTH MANUAL

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Safety and Health Policies

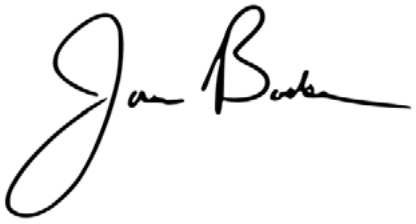
Safety and Health Philosophy

It is the philosophy of BENCHMARK HOUSTON BUILDERS, L.P., (BHB) that all injuries can be prevented. We are vitally concerned about the human suffering and financial losses resulting from on-the-job accidents, both for the individual and the company. Therefore, the prevention of accidents is a major company objective, requiring the active and sincere cooperation of all employees.

Total accident prevention can only be accomplished through the coordinated efforts of all employees. Therefore, BHB's personnel, as a condition of employment, must be knowledgeable of and follow the company safety and health requirements.

It is furthermore our policy that no job or service performed by an employee is so important or urgent that it cannot be performed in the safest manor. Safety and sanitary conditions will be taught and enforced by supervision. It is our firm commitment to truly make safety equal to cost and production.

We welcome suggestions from employees that will further help provide safe and healthful conditions and practices.



JASON BOEKER | PRESIDENT

BENCHMARK HOUSTON BUILDERS, L.P.

Safety Responsibilities

I. Management

A. Provide means to accomplish a sound safety policy.
B. Enforce this policy and discharge any employee willfully disregarding it.
C. Conduct periodic safety inspections and file reports.
D. Investigate or cause to have investigated any and all accidents and file such reports on each.
E. Establish procedure for treatment of injuries.
F. Establish weekly safety meeting procedures and provide safety training for personnel.
G. Provide each project with federal, state, and local safety code requirements.
H. Establish monthly accident reporting program and record keeping as required by OSHA.
I. Assign a member of the management staff the responsibility to carry out the company safety program.

II. Project Managers

A. With regard to safety, be responsible for including the proper amount of material, equipment and labor in the estimate to properly protect personnel and property.

   Planning will include the following:

   1. Scope of proposed operations
   2. Exposure to people - present and future
   3. Adjacent property
   4. Exposure to street traffic
   5. Project controls
   6. Utility exposure - existing facilities
   7. Housekeeping practices
   8. Personal protection
   9. Public relations
   10. Adjacent work in progress
   11. Excavation & trench safety

B. On each visit to the job site, make safety inspections of the job conditions. Discuss unsafe practices or situations noted with the project superintendent.
C. Check the job site safety records on a regular basis, noting any trends in types of accidents.
D. Make sure at project meetings that all subcontractor's supervisory personnel are aware of the requirements of the company safety program and that they understand that it is a part of their contract.
E. Verify that the project superintendent is keeping all logs correctly and up to date and that he is sending the required documentation to the main office.
F. Distribute relevant reports, accident data, changes in regulations, and other material to the job site(s).
G. Provide the project superintendent with all updates, trade bulletins, fact sheets and announcements pertaining to general and specific safety topics.
H. Verify that all personnel are provided a copy of the company Safety and Health Manual.

III. Superintendents

A. Be completely responsible for on-site safety and record keeping.
B. Complete and turn in the weekly safety audits by the end of day Tuesday each week.
C. Make available all necessary personal protective equipment, job safety materials and first aid equipment to BHB employees.
D. Instruct the field personnel and subcontractors that safe practices are to be followed and safe conditions maintained throughout the jobs.
E. Instruct the field personnel and subcontractors that they are not to require or permit their personnel to take unnecessary chances, but rather that they instruct them in proper and safe procedures.
F. When applicable instruct assistant superintendents and foremen with regard to their safety responsibilities; in such areas as giving individual safety instructions, construction toolbox safety meetings, accident investigations, and following up on all safety recommendations.
G. Review all accidents with field personnel. File reports, and see that corrective action is taken immediately.
H. Establish and maintain first aid, fire protection, sanitation (toilet, trash and hand washing) facilities.
I. Be responsible for job planning, layout, and inspection of all operations.
J. Have available copies of all federal, and other applicable regulations, at job site office. Post safety rules, OSHA forms, safety posters, etc.
K. Be familiar with the laws pertaining to safety and their basic requirements.
L. Consult with management on extra hazardous activities.
M. All of the following safety responsibilities are the responsibility of the superintendent unless the job has a foreman or assistant superintendent. In which case they will then be the responsibility of the foreman/assistant superintendent.
N. See that the entire company safety program is carried out at the work level.
O. See that the employees commit no unsafe practices.
P. Make sure no unsafe conditions exist in work areas.
Q. Make sure that necessary protective equipment is on hand and used.
R. Instruct all employees in safety procedures and job safety requirements. Follow up and insist on compliance.
S. Conduct and turn in safety meetings on a weekly basis, and discuss safety in personal contact with employees.
T. See that all injuries are cared for properly and reported promptly.
U. Investigate all accidents or “near miss” incidents and immediately report them to the project manager and safety coordinator; file complete reports, and correct the cause immediately.
V. Be familiar with the laws pertaining to safety and their basic requirements.

IV. Employees

A. Abide by Company safety rules and regulations on the job.
B. Decide to observe others around you for dangerous working habits or conditions.
C. Report unsafe acts to the project manager and/or superintendent/foreman. (You do not need to name the person involved.)
D. Make good safety practices a habit.
E. Attend all safety meetings.
F. Never hide unsafe conditions.
G. Immediately report any accident, injury or “near miss” to your foreman or superintendent

V. Subcontractors

A. All subcontractors must provide BHB with the following prequalification information prior to commencement of their work:

   Planning will include the following:

   1. A copy of their safety program (digital copy preferred)
   2. Safety training documents
   3. Safety Data Sheets
   4. Total Recordable Incident Rate (TRIR) for the last three years
   5. Experience Modification Rating (EMR) for the last three years
   6. Days Away Restrictions and Transfers (DART) for the last three years
   7. Fatality Rate for the last three years

B. All subcontractors shall familiarize themselves with and abide by the safety rules and regulations of BHB, the client, and any governmental body having the authority to control the manner or method of carrying out the work. Including, but without limitation the Williams-Steigner Occupational Safety and Health Act of 1970 (OSHA), all rules and regulations established pursuant thereto, and all amendments and supplements thereto. The subcontractor is expected to enforce its own safety program to the fullest extent relative to their scope of work. In no way does BHB release the subcontractor of their responsibilities concerning safety issues. It shall be the responsibility of the subcontractor to furnish and pay for any special tools and equipment required to comply with the safety standards herein stated. Check the job site safety records on a regular basis, noting any trends in types of accidents.

C. Without limiting the foregoing, the subcontractor shall specifically be expected to:

   1. Require all of his employees, visitors and suppliers to wear hard hats, safety glasses and high visibility vests at all times on the job site. Workers will be properly dressed for construction when entering the job site i.e. shirts with sleeves, long pants, shoes with hard soles and leather uppers, soft-soled shoes (sneakers, athletic shoes) and sandals are not permitted.
   2. Work from ladders, platforms, lifts and scaffolding that conform to OSHA requirements and follow the manufacturer's instructions for use and maintenance.
   3. Use full body harnesses when working in areas above 6' and not protected by guardrails.
   4. If it becomes necessary to have access to any opening or shaft or to remove any guardrail system, the subcontractor shall see that the openings or shafts are adequately protected while the work is in progress and that covers or handrails are replaced before leaving the area. If a subcontractor does not follow this procedure BHB will assess a back charge for its time and material in order to correct the problem.
   5. Require his foremen to attend all preconstruction meetings and safety orientations prior to beginning work on the job site.
   6. Require his foremen to attend all job hazard analysis meetings that involve their particular trade and actively participate in hazard assessment.
   7. Require his foremen and all his employees to attend weekly safety meetings and provide minutes of the meeting to the BHB's superintendent at the end of each week. Some subcontractors may be allowed to attend BHB's safety meetings in lieu of their own.

8. Require his foreman to complete and turn in the daily report to BHB's superintendent.
9. Furnish BHB with a report on any accident involving any of the subcontractor's employees or equipment as well as a copy of all insurance and worker's compensation claims involving the project.
10. The subcontractor must respond in writing to all safety violation notifications sent by BHB within one week. A safety violation is considered any regulation set in place by OSHA, BHB or the Client that has been broken or disregarded by an employee(s) and in effect put themselves or others at risk. The subcontractors response must indicate how and when the listed violation(s) were corrected, the subcontractor's plans to ensure the violation(s) will not occur again and any applicable documentation of the incident.
11. Provide BHB's superintendent with an emergency list showing your company doctor, hospital, insurance carrier, etc. Furnish the project with a first aid kit and/or send your first aid type injuries to your company doctor. The BHB first aid kit will not be available to subcontractor's employees except in emergency situations.

D. If subcontractor's foreman and/or his employee(s) do not comply with the above, BHB has the authority to remove them from the project and the subcontractor agrees to provide a new foreman and/or employee(s) who will abide by the safety rules.

E. Subcontractor shall be responsible for providing drug-free employees to the construction job site. Subcontractor warrants and agrees to advise its employees that alcohol and drugs will not be tolerated on any BHB job site. Subcontractor will furnish a post-accident drug test on any employee involved in a lost-time accident. BHB reserves the right to direct random drug testing of all Subcontractor employees on its job site(s), if reasonable suspicion of substance abuse is being experienced on said sites. This test will be conducted as outlined in the BHB Substance Abuse Policy. If the subcontractor's employee refuses a drug test in either case, BHB will not allow him/her back on the job site.

F. It shall be the responsibility of all subcontractors to provide the appropriate Safety Data Sheets (SDS) to BHB for all hazardous chemicals being used by their company at the job site. All SDS information shall be current and shall be specific to the project. BHB will provide a location on site for the storage of the subcontractor's Hazard Communication Program and Safety Data Sheets.

G. A post job safety performance review will be conducted at the end of each project. Subcontractors will be notified if their performance is seen as less than adequate. If a subcontractor is on multiple projects through out the year then a yearly review will be conducted as well.

Job Hazard Analysis

I. General

A Job Hazard Analysis (JHA) is an essential component to risk management for each project. The JHA is a planning tool that allows a project to get started on a safe basis. It is intended to force the project manager and superintendent to identify the hazards that will exist on a project, and start the planning needed to manage those hazards. The JHA will also be used to analyze potential hazards as the project progresses. JHA is not intended to create a procedure for each hazard; the safe task-training program will deal with the details. All employees will be trained in the hazard identification process.

II. Checklist

The following hazards and risks are to be considered prior to the start of each project and the JHA form filled out in its entirety. For each one that will exist on the project, a brief plan for management of the risk will be developed. Hazards must be classified/prioritized based on the risk associated with the task. A risk analysis matrix indicating the severity and probability of occurrence will be developed.

A. Will professional medical care be more than six minutes away from the project?
B. Are clean drinking water and restroom facilities in existence on the project site?
C. Will public intrusion onto the project be possible?
D. Will public traffic be impacted by the scope of the work on the project?
E. Will excavations be part of the scope of the work?
F. Will demolition be part of the scope of the work?
G. Are fire hydrants in existence on the property where the work will be performed?
H. Will flammable materials be stored on the project site?
I. Will arrangements for temporary electrical service be required?
J. Will workers be performing work over 6 feet in height or above operating equipment?
K. Will any scaffolding be used for any part of the job?
L. Will cranes be used for any part of the job?
M. Will motorized equipment be used for any part of the job?
N. Will welding, burning, or flame cutting be used for any part of the job?
O. Will pressurized lines be exposed to any part of the job?
P. Will any of the work be performed over or in waterways?
Q. Will any of the work be performed in confined spaces?
R. Will any of the work include tunneling?
S. Will any of the work include steel erection?
T. Will any hazardous materials be used or created in the course of the work?
U. Will workers be exposed to environmental health hazards during the course of the work?
V. What PPE will be workers need to wear?
W. Will workers need to wear respirators?

III. Professional Medical Care **(see sections 10 and 11)**

First aid arrangements will be necessary on the project. If professional care is not immediately available by 911 access, someone trained in CPR and Emergency First Aid will be on site at all times when work is being performed. A written Emergency Action Plan shall be developed for the project.

IV. Sanitation **(see section 15-4)**

A. How will drinking water and hand washing be provided?

B. How will restroom facilities be provided?
C. Will there be any possible exposures to bloodborne pathogens (body fluids, sewage)?**V. Public Intrusion (see sections 5 and 14)**
A. During normal operations hours?
B. After work shifts are ended?

VI. Traffic (see section 15-17)

A. Issues for workers reaching the project from parking areas?
B. Issues for work being performed alongside moving vehicles?
C. Issues for work by-products reaching public vehicles (parked or moving)?

VII. Excavations (see section 15-8)

A. Under 4 feet deep (underground utilities contact possible)?
B. Over 4 feet in depth (protect workers inside)?
C. Over 20 feet in depth (Professional Engineer required)?

VIII. Demolition (see section 15-25)

A. Manual (train workers)?
B. Mechanical (equipment involvement)?
C. Explosive (special requirements)?

IX. Fire Protection (see section 15-14)

A. Existing hydrant service and fire response time?
B. Additional arrangements?
C. Training for use of fire extinguishers?

X. Flammable Storage (see section 15-15)

A. Locations (outside, inside, upper floors, special lockers or rooms)?
B. Quantities (under 5 gallons, over 25 gallons, over 500 gallons)?
C. Containers (double lined tanks, containment dikes, bonding and grounding)?

XI. Electrical (see sections 15-10, 15-11, 15-12 and 15-13)

A. Existing services available?
B. Ground fault circuit interruption arrangements?
C. Assured equipment grounding conductor arrangements?
D. Overhead lines?
E. Voltages and amperages?
F. Energized (live or potential capacitance discharge) systems work = lockout and tagout?

XII. Fall Protection (see section 15-21)

A. Kinds of exposures?
B. Types of trades involved?
C. Responsibility for installing, maintaining and dismantling?

XIII. Scaffolding (see section 15-23)

A. Ground supported (base material) and types (welded frame, tube and coupler, etc.)?
B. Suspended stage (anchorage, structural issues) and types (3-man, chair, float, etc.)?
C. Competent and qualified persons?
D. Scaffold tagging program?

XIV. Cranes (see section 15-18)

A. Kinds of work to be accomplished (steel frame, precast panels, roof top units, etc.)?
B. Kinds of cranes expected (rubber tired, crawler, tower, ringer, etc.)?
C. Experience and certification levels required for operators?
D. Signaling arrangements (hand, radio, relay)?
E. Critical lifts (85% of chart maximums, tandem, etc.)?
F. Proximity to overhead power lines, pipe racks, other structures, other cranes?

XV. Motorized Equipment (see sections 15-17 and 15-24)

A. Project authorized vehicles?
B. Earthwork equipment?
C. Aerial lift platforms?
D. Industrial trucks (forklifts)?
E. Generators and Compressors?

XVI. Hot Work (see section 15-19)

A. Stationary operations (fabrication areas)?
B. Mobile operations (single shift events)?
C. Live line taps?
D. Permits?

XVII. High Pressure Work

A. Line plugs and gauges?
B. 143057545 QPC 06000 Blinding?
C. Purging?

XVIII. Marine/Over or Adjacent to Water Operations

A. Adjacent to water operations exposures?
B. Above water exposures?
C. Marine traffic influences?

XIX. Confined Spaces (see section 15-5)

A. Types of spaces?
B. Work to be performed?
C. Durations of work?
D. Atmospheres anticipated?
E. Training and rescue requirements?

XX. Tunneling (see section 15-6)

A. Work inside existing tunnels?
B. Creating new tunnels with workers inside?
C. Jack and bore operations?

XXI. Hazardous Materials (see section 8)

A. Written Hazardous Materials Communication Program?
B. Types of hazards (fire, health and reactive substances)?
C. Large quantity items?
D. Waste handling and disposal operations?
E. Spill control and clean-up arrangements?

XXII. Environmental Health Exposures (see sections 8, 15-1, 15-2, 15-16, 15-20 and 15-26)

A. Personal protective equipment requirements?
B. Noise exposures?
C. Respiratory exposures?
D. Laser exposures?
E. X-ray exposures?
F. Tool guards?
G. Repetitive motion exposures?
H. Manual lifting (muscular-skeletal) exposures?
I. Sharp edge exposures?
J. Chemical exposures?

XXIII Steel Erection (see section 15-9)

A. Do footings, piers and walls have sufficient strength?
B. Are other construction processes taking place below?
C. Proper fall protection measures being taken?

XXIV. PPE/Respirators (see section 15-2)

A. Type of hazards (dusts, fogs, fumes, mists, gases, smokes, sprays or vapors)?
B. Proper training in the use of respirators and respirator inspections?
C. Type of PPE needed?

Safety Training

I. Management

BHB's safety program involves the participation, on an active level, of everyone within the company. The senior management of BHB is in full support of this program and dedicated to its rigorous enforcement. The philosophy that makes this program a success is the fact that each individual, from top management to job site worker, is directly responsible for the work place safety of those individuals working under his authority.

II. Project Managers

All company project managers are required to undergo the BHB's Employee Safety and Environmental Health Orientation. Periodic updates and refresher courses will be given. The project manager is responsible for making sure that BHB's Safety Program is being followed on all job site(s) of each project(s) for which he/she is in charge. While it is the ultimate responsibility of the project superintendent to assure the actual enforcement of the program, the project manager of the job will be held accountable for seeing that safety is "made equal" to all other concerns on the project. Safety problems or frequent accidents on a project will be brought to the project manager and immediate correctional actions will be expected.

III. Superintendents

The project superintendent is the main player in the implementation of safety and accident prevention programs within the company program. They are the individual with complete responsibility for the safety of workers on the job site, including foremen, workmen, subcontracted workmen and supervisors, as well as visitors and the public.

It is the superintendent's responsibility to see that all workers in his charge are trained in BHB's Safety Program and in general safe work practices. Weekly safety meetings with job site employees are effective training aids; an important means of increasing employees hazard awareness as well as job performance.

Such meetings should not be considered just another activity to be crowded into an already busy schedule. To be effective, safety meetings must be planned and scheduled in advance. Safety meetings should be conducted by job site supervisory personnel according to an outline or text provided by the company safety coordinator.

The superintendent will pick a specific time early in the week for the safety meeting and stick to it. Meetings should always include time for attendees to ask questions and raise concerns about any safety questions.

The subject matter for safety meetings must be adapted to job conditions. Discussing actual conditions on each project will have more meaning and actually improve safety performance. Examples of material that should be covered are:

A. Recent job site accidents, cause(s) plus corrective action taken and/or planned. "Near misses" should also be discussed.
B. Future construction activities including potential hazards plus necessary controls.
C. Safety reminders or topics relating to major causes of injury, plus controls.
D. Handout material for safety meetings will be made available from BHB's main office. Many different topic sheets are available, therefor repetition of material should only occur when necessary, i.e. "near miss" or violation. The superintendent and company safety coordinator will keep written records of meetings held, topics covered and attendees.

IV. Assistant Superintendent/Foreman/Supervisor Orientation

To ensure that our assistant superintendent/foremen and subcontractor's foremen are familiarized with their safety responsibilities, the project manager or superintendent shall conduct a one-time safety orientation upon hire or promotion to let him/her know what is expected. Upon completion of this informal meeting, the foreman and the person holding the orientation shall attest to its completion in writing. This record shall be kept on file at the job site as part of the permanent job file. This meeting shall cover the safety program, foreman's responsibilities and specific duties, recent job site accidents, cause plus corrective action taken and/or planned. "Near misses" should also be discussed.

A. Foreman shall be familiar with the crew's work area and maintain a safe working environment.
B. When Foreman assign work tasks, he/she shall insure that employees are instructed as to safety practices, work methods and personal protective equipment.
C. Each foreman shall be familiar with the emergency procedures for the project and be able to provide leadership in the case of an emergency such as fire, serious injury or evacuation.
D. The foreman shall assist the superintendent in the investigation of any accident and completion of the required forms.
E. The foreman shall be completely familiar with BHB's safety regulations, and HAZCOM requirements.

V. Safety Orientation of New Employees

All newly hired employees will be required to attend an Employee Safety and Environmental Health Orientation to include the company rules and safety practices. The new employees will be indoctrinated on specific hazards and safety rules related to his/her job before starting work. All topics listed shall be explained and any questions answered. Upon completion of orientation, employee will sign the Employee Safety and Environmental Health Orientation Form to confirm that all items are understood. This form is to become part of the employee's permanent file. Newly hired employees will be placed with a seasoned safety-conscious employee that can help train him/her wherever possible. The following shall be specifically covered during the Employee Safety and Environmental Health Orientation:

A. Safety Responsibilities
B. First Aid / CPR / AED and OSHA 30 Training
C. Safety Documents and Forms
D. Subcontractor Requirements
E. Job Hazard Analysis
F. Safety Enforcement Policy
G. Substance Abuse Policy and Procedures
H. Hazard Communication Program
I. Governmental Inspections
J. Emergency Action Plan
K. First Aid and Emergency Equipment
L. Reporting Accidents, Injuries and Near Miss Incidents
M. Personal Protective Equipment
N. Waste Management
O. Respiratory Protection
P. Confine Space Requirements
Q. Warning Signs, Labels and Barricades
R. Excavation and Trench Protection

S. Fire Extinguishers
T. Motorized Construction Equipment
U. Energized Sources
V. Crane Operations
W. Welding and Cutting
X. Aerial Lifts and Scaffolding Requirements
Y. Inspection Tools, Equipment and Machinery
Z. Proper Training for Tools, Equipment and Machinery
AA. Laser Equipment
AB. Demolition Safety
AC. Fall Protection Requirements
AD. Material Handling
AE. Safety Equipment Issued

The Employee Safety and Environmental Health Orientation form on the following page outlines the issues to be covered in the orientation of new employees. This form is to be filed in the employee's permanent file at the main office.

A sample of all safety forms will be given to the new employee to reinforce the orientation as an official action.

EMPLOYEE NAME (Print)_____Date:_____

Social Security Number:_____Job title:_____

Training Conducted by: _____

Please initial each item as it is discussed during the orientation:

_____Benchmark Houston Builders safety philosophy

_____Safety responsibilities based on job description

_____Important forms/documents and PROCORE

_____Agrees to become First Aid / CPR / AED, OSHA 30 Construction Industry C and Basic Orientation Plus certified within 3 months of hire date

_____ Understand what we require of our subcontractors prior to commencement of work and their responsibilities

_____How a job hazard analysis is an essential component to risk management for each project, who is responsible to complete the JHA and the individuals that should be involved

- Job Hazard Analysis Form

_____Understands the necessary precautions to keep visitors and the public safe

_____Importance of our Safety Enforcement Policy and possible disciplinary actions

_____Substance Abuse Policy and Procedures

- Drug Free Workplace Acknowledgement Form: Sign and Date

_____Training on the Hazard Communication Program. Includes right to know, safety data sheets, container labeling, spill prevention and Hydrogen Sulfide (H2S)

_____Procedures during governmental inspections, who to inform and what to expect

_____Emergency Action Plan: How to create a proper EAP using the BHB EAP Form

_____Know the location of and how to use the first aid kit and emergency equipment and have a clear understanding of the First Aid Medical Procedures

_____Promptly reporting all near miss incidents, property damage, accidents and injuries

- Accidents and their investigations
- Responsibility for promptly reporting any recognized hazards or hazardous conditions and the procedures for reporting them.
- Incident Investigation Report Form

_____Accident and illness records and the importance of record keeping

_____Crime prevention on the jobsite

_____Personal protective equipment requirements, including situations where ADDITIONAL personal protective equipment must be utilized due to the work or the work environment

_____ Importance of respiratory protection, specialized training, fit testing and selection of the proper respirator

_____Waste management: including the proper disposal methods for non-hazardous / hazardous wastes, trash, scrap materials and any other types of waste they may encounter specific to each job.

_____ Sanitation: portable toilets and hand washing, Drinking water and Illumination

_____Confined space requirements

_____Responsibility for reading and following the directions of all warning signs, labels and barricades: Includes properly placing and replacing the necessary signs, warnings or barricades

_____Excavation and Trench Protection

_____Steel Erection

_____Electrical Safety: the importance of GFCI, hazard controls and lockout tagout procedures and working around energized sources

_____Fire prevention: Includes fire extinguisher responsibilities for use, type and quantity, fire prevention methods and expectable flammable liquid storage

_____The proper techniques for material handling and manual lifting

_____Motorized construction equipment: Including training, seatbelts, back-up alarms and daily inspections

_____Responsibility to make sure all crane operators are trained and competent to operate equipment safely and understand safe crane operation procedures

_____Welding and Cutting

_____Responsibility for inspecting tools, equipment, machinery, etc. prior to use: Includes allowable corrective actions, and proper reporting of defects, damages or missing safety guards

_____Fall protection requirements 100%

_____Use and construction of ladders, stairs and ramp

_____Scaffolding requirements

_____Aerial lift requirements

_____Demolition Safety

_____ Responsibility to make sure that only qualified and trained employees will be assigned to install, adjust and operate laser equipment and understand safe laser operation and installation procedures

_____Heat and cold stress and the health effects

_____Concrete and masonry construction hazards and safe work practices

_____Dangers and health hazards of Silica dust

_____Stop work authority rights and process

_____I have been issued the following safety equipment, and have been trained in the proper use, care and maintenance of this equipment. I further understand that if this equipment is lost, the amount of each item may be deducted from my paycheck to cover the cost of replacing it. However, if the item is damaged or worn out through normal use, it may be exchanged at no cost.

Initial	***Item:***
_____	Hardhat
_____	Safety Glasses (clear)
_____	Safety Glasses (tinted)
_____	Safety Vest
_____	Other:_____
_____	Other:_____

ALL OF THE ABOVE HAVE BEEN REVIEWED AND EXPLAINED TO MY SATISFACTION AND UNDERSTANDING. I UNDERSTAND THAT IF I DO NOT KNOW, OR IF I AM IN DOUBT, AND IF I DO NOT FULLY COMPREHEND ANY PART OF THE JOB INSTRUCTION, EQUIPMENT, OR PROCEDURES, I MUST ASK FOR EXPLANATIONS AND/OR TRAINING BEFORE I BEGIN THE WORK ASSIGNMENT.

As a condition of employment, I accept responsibility for the proper use and care of all safety equipment, machinery, and tools issued to me. I also agree to abide by all safety rules set forth in the **BENCHMARK HOUSTON BUILDERS, L.P.** Safety and Health Manual, Procedures and Regulations set forth by **BENCHMARK HOUSTON BUILDERS, L.P.** and with all Federal or State regulatory agencies.

By my signature I acknowledge acceptance of the above as a CONDITION OF EMPLOYMENT. I understand that my failure to abide by the rules, regulations, and procedures of **BENCHMARK HOUSTON BUILDERS, L.P.,** may lead to termination of employment.

_____ _____

Employee Signature Date

_____ _____

Company Representative Date

Visitor Safety

I. All necessary precautions shall be taken to prevent injury to the public or damage to property of others. Precautions to be taken shall include but not be limited to the following:

A. Work shall not be performed to any area occupied by the public unless specifically permitted by the contract or in writing by the project manager.

B. When it is necessary to maintain public use of work areas involving sidewalks, entrances to buildings, lobbies, corridors, aisles, stairways and vehicular roadways, BHB shall protect the public with appropriate guardrails, barricades, temporary fences, overhead protection, temporary partitions, shields and adequate visibility.

C. Sidewalks, entrances to buildings, lobbies, corridors, aisles, doors or exits shall be kept clear of obstructions to permit safe entrance and exit of the public at all times.

D. Appropriate warnings, and instructional safety signs shall be conspicuously posted where necessary. In addition, a signalman shall control the movement of motorized equipment in areas where the public might be endangered.

E. Sidewalk sheds, canopies, catch platforms and appropriate fences shall be provided when it is necessary to maintain public pedestrian traffic adjacent to the erection, demolition or structural alteration of outside walls on any structure. The protection required shall be in accordance with the laws and regulations of the locality.

F. A temporary fence shall be provided around the perimeter of aboveground operations adjacent to public areas. Perimeter fences shall be at least 6 feet high. They may be constructed of a wood or metal frame and sheathing, wire mesh or a combination of both.

G. Guardrails shall be provided on both sides of vehicular and pedestrian bridges, ramps, runways and platforms. Pedestrian walkways elevated above adjoining surfaces, or walkways within 6 feet of the top of excavated slopes or vertical banks shall be protected with guardrails. Guardrails shall be made of rigid materials capable of withstanding a force of at least 200 pounds applied in any direction at any point in their structure. Their height shall be approximately 42 inches. Top rails and posts may be 2 inches by 4 inches dressed wood or equal. Intermediate horizontal rails at mid-height and toe boards at platform level may be 1 inch by 6 wood or equal. Posts shall not be over 8 feet apart.

H. Barricades meeting local requirements shall be provided where sidewalk shed, fences, or guardrails, as referenced above, are not required between work areas and pedestrian walkways, roadways or occupied buildings. Barricades shall be secured against accidental displacement and shall be maintained in place except where temporary removal is necessary to perform work. If it is necessary for a barricade to be temporarily removed, for the purpose of work, a watchman shall be placed at all openings.

I. Temporary sidewalks shall be provided when a permanent sidewalk is obstructed by the Contractor's operations. They shall be in accordance with the requirements of the political subdivision involved. Guardrails shall be provided on both sides of temporary sidewalks.

Safety Enforcement Policy

I. It is the policy of BHB to expect all employees to abide by the safety rules and policies at all times. Supervisors are expected to monitor/observe and enforce these safety rules equally. Observations provide direct, measurable information on employees' work practices identifying both safe and unsafe behaviors.

A. Supervisors will be trained in the process of observation and how to discuss such observations with employees.

1. Training will include program objectives, how to conduct and observation, how to complete the observation form, what behaviors mean, feedback and employee awareness that they may be observed at anytime.

2. Upon completion of an observation the observer will Review the observation with observed employee, start with a positive comments, reinforce safe behaviors observed, discuss unsafe behaviors observed, solicit explanation of his/her unsafe behavior with open-ended questions and emphasize possible consequence to the observed employee.

B. BHB will compare these measurements and track these results by an acceptable method so that numerical and statistical comparisons can be made over time. Once trend analysis is complete, appropriate action plans will be developed to address unsafe behaviors. The action plan will include, evaluating the unsafe behaviors, developing an action plan for unsafe behaviors based on comments and feedback, designating responsible parties and time frames within the action plan, defining who is responsible for action planning and ensuring management support.

II. Employees are subject to disciplinary action for any of the offenses listed below. In the event of an employee's suspension for disciplinary reasons, to the extent permitted by law benefits will not accrue nor be recoverable during the suspension period. BHB has the right to terminate an employee for any of the following misconducts if the situation warrants this action. The acting principals of the company will enforce any and all disciplinary actions/suspensions.

A. Serious Misconduct
- Failure to report personal injury resulting from an on-the-job work situation
- Failure to use personal protective equipment

Disciplinary Action
- First offense - Verbal warning
- Second offense - Written warning
- Third offense - Five days off without pay to termination

B. Very Serious Misconduct
- Misuse of company equipment
- Speeding or reckless driving or unauthorized use of company vehicle
- Disregarding safety rules

Disciplinary Action
- First offense - Written warning
- Second offense - Five days off without pay to termination
- Third offense - Immediate termination

C. Inexcusable Misconduct
- Fighting on job site or company property
- Theft of any item on project

- Reporting to work under the influence of alcohol or illegal drugs, possession, sale or use of illegal drugs or consumption of alcohol while working on job site, or company vehicles
- Gross negligence or willful acts in the performance of duties resulting in damage to company property or injury to others
- Willfully misusing company property
- Serious safety violation resulting in injury

Disciplinary Action

- First offense - Five days off without pay to termination
- Second offense - Immediate Termination

Substance Abuse Policy

NOTE: This policy applies to all applicants and employees of BENCHMARK HOUSTON BUILDERS, L.P. (BHB). Each employee will receive a copy of this policy.

I. As a part of BHB's commitment to safeguarding the health of its employees, to providing a safe place for its employees to work and to supplying its customers with the highest quality construction and service possible, this policy establishes the company's position on the use of alcohol, and/or use of drugs or other controlled substances by its employees. Substance abuse, whether while at work or away from work, can seriously endanger the safety of employees and may prevent top quality construction and service. BHB has established this program to detect and remove from the work place abusers of alcohol, drugs or other controlled substances.

It is the policy of BHB to maintain a drug free workplace. As a condition of continued employment, all BHB's employees must comply with this policy. The term "workplace" is defined as company property, any company sponsored activity, or any other site where the employee is performing work for the company or representing the company. The term "drug" as used in this policy includes alcoholic beverages and prescription drugs, as well as illegal inhalants and illegal drugs and/or controlled substances as defined in schedules I through V of the Controlled Substances Act, 21 U.S.C. Sec. 812, 21 C.F.R. Sec 1308, and the state and local law of the jurisdiction where the workplace is located, including, but not limited to, marijuana, opiates (e.g., heroin, morphine), cocaine, phencyclidine (PCP), and amphetamines. An employee who engages in an activity prohibited by this policy shall be subject to disciplinary action, up to and including immediate termination of employment.

The intent of this policy is:

To provide clear guidelines and consistent procedures for handling incidents of employee abuse of alcohol, and/or use of drugs or controlled substances that affect job performance and to make every effort to institute and maintain a drug free work place.

To ensure that employees conform to all state and federal regulations regarding alcohol, drugs or controlled substances.

BHB will utilize drug screen testing to help administer this policy as follows:

A. Pre-employment testing
B. Employees will be tested for reasonable suspicion.
C. Employees selected on a random basis, will be tested periodically.
D. Employees who occupy sensitive positions from safety and health or security standpoint
E. Preaccess Testing when required by a owner contract or program.
F. Employees will be tested following an injury or an incident involving property damage.
G. Employees will be tested when returning from a lengthy absence from duty.

II. Explanation of Terms - Legal and Illegal Drugs or Controlled Substances

A. **Legal Drugs** - Legal drugs include alcohol, medications prescribed by a physician, and over the counter medications. BHB prohibits the use or abuse of such drugs to the extent that job performance or fitness for duty is adversely affected. The employee shall notify their supervisor when taking prescribed medication or any medication that may interfere with job performance. Upon request, the employee shall furnish BHB with the physician's statement regarding the possible side effects of the medication.

B. **Illegal Drugs** - Illegal drugs include those controlled substances under federal or state laws that are not authorized for sale, possession or use. Legal drugs that are obtained or distributed illegally are included in this category.

III. Selection Procedures in the Testing of Employees

A. **Pre-employment Testing** - Every job applicant will be required to take and pass a drug test before he/she may officially start working. Each applicant will be notified that a drug test is required and all job offers will be contingent upon successfully passing a drug test.

B. **Reasonable Suspicion Testing** - Current employees may be asked to submit to a test if cause exists to indicate that their health or ability to perform work may be impaired. Factors that could establish cause, include, but are not limited to:

1. Sudden changes in work performance;
2. Repeated failure to follow instructions or operating procedures;
3. Violation of company safety policies.
4. Involvement in, contributing to or being in proximity to an incident or near miss.
5. Discovery or presence of substances in an employee's possession or near the employee's work place;
6. Odor of alcohol and/or residual odor peculiar to some chemical or controlled substances;
7. Unexplained and/or frequent absenteeism;
8. Personality changes or disorientation;
9. Arrest or conviction for violation of a criminal drug statute.

If the company president or other authorized company official has a reasonable suspicion that an employee may be impaired or abusing alcohol, illegal drugs, and/or controlled substances, these findings and observations will be documented. Upon review and approval by the company president, or designated official, the employee will be asked to consent to a test(s) and sign an Applicant/Employee Acknowledgment and Consent Form. The documentation of the employee's conduct shall be prepared and signed by the witness within 24 hours of the observed behavior or before the results of the tests are released, whichever is earlier. BHB will ensure that the employee in question is transported immediately to a collection site for the collection of a urine and/or blood sample.

C. **Random Testing** - Random testing will be conducted on a neutral basis with all employees having an equal chance of being selected. Twenty percent of the current employees will be chosen quarterly and be required to submit a specimen for an unannounced drug test. Employees will be given short notice of the test and will be told when the testing will occur.

D. **Sensitive Position Testing** - Sensitive positions as determined by law usually include employees who have access to classified information, employees in positions that involve National Security, health, or safety, or functions that require a high degree of trust and confidence. All employees whose work is classified as "sensitive" either by company officials, by the requirements of a federal or state contract, or by federal or state law, will be tested on at least an annual basis. Drug testing of employees in sensitive positions is mandatory and a condition of either future or continued employment.

E. **Preacess Testing** - Subject to applicable law, this Drug Free Workplace Policy shall encompass the additional testing policies, procedures, and requirements required by the contract company for any employee performing work under such an arrangement. This may include additional testing methods which include, but are not limited to, analysis of specimens of blood, urine, saliva, hair, or evidential breath testing.

It may include testing for additional substances, not tested for under the Drug Free Workplace Policy. It may include methods of testing not employed under the Drug Free Workplace Policy. It may also include testing at other times which may include, but are not limited to, pre-employment, preaccess (testing prior to performing work under the contract), random, periodic, interval, annual, reasonable suspicion, post- accident, and per any other contractual specification not listed here.

F. **Post Accident Testing** - All employees involved in reportable accidents will be drug tested for the use of controlled substances as soon as possible after the accident. Any employee who is seriously injured and cannot provide a specimen at the time of the accident shall provide authorization for obtaining hospital records and other documents that would indicate whether there were any controlled substances being used by the employee. Should these records not be available, the employee must submit to a drug-screening test. If an accident involves in the death or unconsciousness of an employee, such testing shall be performed on that individual to determine if the possible cause of the accident was substance abuse related.

G. **Return to Service/Post Rehabilitation Testing** - Employees who return to service after an extended period of time away from employment with the company will be required to submit to substance abuse testing. Additionally, employees who have been referred to rehabilitation through any EAP will be tested before they return to the job.

H. **Other Testing Programs** - In the event that other substance abuse testing is required, every effort will be made to coordinate new testing requirements with the company's other drug testing provisions.

IV. Employee Compliance

BHB employees shall be provided a copy of this policy and sign an acknowledgment of receipt of the policy and acceptance of its items. As condition of employment, all company employees must comply with this policy. Refusing to cooperate, at the time requested, or altering a specimen is cause for immediate termination.

Any company employee who has been convicted under any criminal drug statute for a violation occurring in the workplace, as defined by this policy, or who is aware of the conviction of any other company employee of a similar violation, must report that conviction to the company on-site supervisor no later than five days after the conviction or becoming aware of it. Within thirty days after receiving notice of the conviction described in this policy, the on-site supervisor shall impose discipline on any employee who is convicted of a violation of a criminal drug statute if the violation occurred in the workplace

V. Notification of Supervisor

Anyone taking or using a mind altering medication, whether or not prescribed by the employee's physician for a medical condition, which is known or advertised as possibly affecting or impairing judgment, coordination, or other senses, or which may adversely affect ability to perform work in a safe and productive manner, must notify his or her supervisor or human resources prior to starting work or entering BHB's or client facilities.

The management official, after consulting the Medical Review Officer, if appropriate, will decide if the employee can remain at work or on the company premises or work sites and what work restrictions, if any, are deemed necessary. Any employee violating this policy will be subject to discipline, including termination.

VI. Contractors and Visitors

BHB strictly prohibits any visitor or contractor from being on the company's premises or work sites while under the influence of alcohol, drugs or controlled substances. Any contractor or visitor found in violation of the above-stated policy will be refused entry onto or immediately removed from the company workplace.

VII. Right to Search

BHB reserves the right, on reasonable suspicion that this policy is being violated, to conduct examinations, searches or inspections of employees personal effects, lockers, lunch boxes, purses, baggage, and any other property located on the company premises or work sites, and their quarters, if furnished by the company.

Entry on the company premises or work sites constitutes consent to examinations, searches or inspections. The purpose of such examinations, searches or inspections is to determine whether any employee is in violation of this policy. Further, employees may be required to sign written consent to such examinations, searches and inspections at the time of and as a condition of their initial employment, or as a condition of continued employment.

VIII. Disciplinary Action

A. Any employee engaging in the use of alcohol, or engaged in the use, possession, purchase, sale or transfer of any illegal drug while on company property, work sites, or while on company business will be disciplined up to and including termination and may be subject to criminal investigation and/or prosecution.

   In the event of a confirmed positive test, management will interview the employee to discuss the results. If it is determined that it is due to illegal use of drugs or abuse of alcohol, the company will recommend rehabilitation. Refusal to participate in the rehabilitation will require the employee to be terminated by the company for violation of company policy, and failing to meet company medical standards, or the employee may be given the opportunity to resign.

B. If prescription drugs are detected, the company reserves the right to contact the individual's physician or the company officials may send the individual to the company physician for verification and review of these drugs. All results of the tests will be kept confidential.

C. If an employee is convicted for driving under the influence or for violation of a criminal drug statute, the employee must notify BHB in writing within five days of the conviction. The company president or designated official will thoroughly investigate all of the circumstances and will determine the best course of action to be undertaken. Not reporting the violation can subject the employee to possible termination.

D. No part of this policy, nor any of the procedures is intended to affect the company's right to manage its work place. The Substance Abuse Program in no way creates an obligation or contract of employment. BHB reserves the right to alter or amend the program at any time in its sole discretion.

E. To allow BHB some flexibility, alcoholic beverages may be served at approved company functions or entertainment facilities when the company president or company senior management authorizes them.

F. If any part of this policy is determined to be void or not enforceable under state or federal law, the remainder of the policy, to the extent possible, will remain in full force and effect.

IX. Confidentiality

Results of a drug and/or alcohol test will be kept separate from employee personnel files and treated as confidential information. Results, positive or negative, will not be shared with anyone outside of the employee's direct supervisory chain of command, except when absolutely necessary for treatment purposes.

Drug Free Workplace Policy Acknowledgment

1. This is to confirm that I have read (or had read to me) the Benchmark Houston Builders, L.P., (Company) policy and procedure regarding substance abuse. I understand this policy, the meaning, implications and also the requirements it places on me for beginning or continuing employment at Company.
2. I understand that this Company policy and procedure regarding substance abuse has become a term and condition of the employment relationship between Company and its employees. I further understand that this Company policy regarding substance abuse does not alter, in any manner, the other terms and conditions of the employment agreements between Company and their employees. Employees of Company are at-will employees and can be terminated, with or without cause, at any time.
3. I hereby give my voluntary consent to Company on reasonable suspicion of violation of this policy, to search my person, personal effects, vehicle and other property located in Company premises or work sites. Furthermore, I do hereby give my consent to any collector, to its designated agent, duly authorized by Company to collect a urine and/or blood specimen from me at any time during my employment, and further give my consent for said collector to forward the specimen to a certified and approved laboratory for performance of appropriate tests thereon to identify the presence of alcohol, drugs, and/or their metabolites in my system. I furthermore authorize the approved laboratory to release the results of such tests to the designated Company Program Director and/or designated Medical Review Officer, who in turn may release these results to the appropriate individuals designated by the Company for evaluation, assessment and treatment, as necessary.
4. This consent will not be revoked by me during my employment and will not be voided by a break in service and subsequent re-employment, provided the break in service is no longer than one year. I expressly acknowledge that this consent shall not terminate upon my death, disability, or incapacity and that it is binding upon me, my family, and anyone officially acting on my behalf.
5. I hereby hold Company and its client company harmless from any liability resulting from the process, outcome, or disclosure of information resulting from drug and alcohol testing or any other action taken under the Drug Free Workplace Policy.

Signature: _____

Print Name: _____

Date: _____

Hazard Communication Written Program

I. General

The following written Hazard Communication Program (HCP) has been implemented for personnel of BHB. The original will be kept on file at the company main office. A company representative will be responsible for ensuring the program is current and enforced. The purpose of this program is to help prevent or minimize the consequences of catastrophic releases of toxic, reactive, flammable or explosive chemicals.

A copy of this program will be made available to all employees upon request. The project superintendent will be contacted when a copy of the program is needed. The project superintendent will request the needed Safety Data Sheets on all job site chemicals from the appropriate suppliers and forward them to the main office. The program will be updated when new chemicals or hazards are introduced into the working environment, and reviewed annually.

Safe work practices will be followed during operations such as lockout/tagout, confined space entry, opening process equipment or piping, and control over entrance into facilities. These safe work practices shall apply to employees and contractor employees.

II. Container Labeling

The project superintendent will be responsible for all containers of hazardous chemicals entering the work site and will assure that the chemical containers are properly labeled with:

A. Chemical name
B. Hazard warnings
C. Name and address of the manufacturer, importer, or responsible party

No container(s) shall be used until the superintendent has checked them. If the chemical is to be transferred to a separate container, the superintendent will ensure that the new container is properly labeled; and that all secondary containers are labeled with generic labels which have a block for identity and blocks for hazard warning. For help with labeling, please contact the superintendent. They will review the labeling system annually and update as required. A list of all chemicals present will be kept on file.

All chemicals must be stored properly and chemical storage areas will be kept clean using good house keeping best management practices. When working in existing structures, the project superintendent will ensure that the pipe(s) are labeled and identified properly.

III. Safety Data Sheets

A. The project superintendent will be responsible for obtaining and maintaining the SDS system for BHB. He/she will review incoming data sheets for new and significant health and safety information and will ensure that the new information is given to the affected employees. Copies of all SDS will be kept by this supervisor at the jobsite and will be available to all employees upon request.

B. The SDS contains the following information:

    1. The physical and chemical characteristics of the chemical including vapor pressure, flash point, etc.;
    2. The fire, explosion, and reactivity hazard(s) of the chemical mixture including the boiling point, flash point and auto ignition temperature;
    3. Health hazards of the chemical mixture including signs and symptoms of exposure and medical conditions recognized as aggravated by exposure with primary route(s) of entry.

4. Permissible exposure limit (PEL) or any other exposure limit used or recommended by the manufacturer, importer, or employer;
5. Whether a carcinogen listing (NTP) or has been found to be a potential carcinogen (IARC listing) or by OSHA;
6. Control measures including fire, engineering, personal protective equipment;
7. General precautions for safe handling and use including protective measures during repair and maintenance and procedures for clean up of spills and leaks;
8. Emergency and first aid procedures;
9. Date prepared or changed;
10. Name, address, telephone numbers of manufacturer, importer, or responsible party to call in an emergency.

IV. Employee Training and Information

Before starting work, the respective project superintendent of a new employee will go over their copy of the HCP and any SDS applicable to their job. Depending on the job site, handouts or a video presentation may be utilized in the training.

Before any new chemical is used, all employees will be informed of its use, will be instructed on safe use, and will be trained on hazards associated with the new chemical. All employees will attend additional training as appropriate, to review the HCP and SDS. The minimum orientation and training for a new employee is as follows:

A. An overview of the requirements contained in the Hazard Communication Standard, 29 CFR 1926.59.
B. Chemicals present in their workplace operations and office;
C. Location and availability of the written HCP;
D. Physical and health effects of the hazardous chemicals;
E. Methods and observation techniques used to determine the presence or release of hazardous chemicals in the work area;
F. How to lessen or prevent exposure to these hazardous chemicals through usage of control/work practices and personal protective equipment;
G. Steps taken by the company to lessen or prevent exposure to the chemicals listed on the inventory list;
H. Instructed in the known potential fire, explosion, or toxic release hazards related to their job and the process
I. Emergency procedures to follow if exposed to any of the chemicals;
J. Process to obtain an SDS
K. Proper response procedures for spilled materials that include materials available for use, proper waste disposal and communication procedures.

Prior to a new chemical hazard being introduced into any section of the workplace, each employee will be given information and training as outlined above by his/her immediate supervisor or the superintendent who is responsible for ensuring that SDS on the new chemical(s) are available prior to use.

After attending the training class, each employee will sign a form to verify that they attended the HCP training, that the written HCP was made available to review, and that he/she understands the HCP. All training will be documented and kept on file.

Before entering a work site, the project superintendent will ascertain what hazards they may be exposed to and then take appropriate action to protect themselves. If the employee has any question about what protection they need, they will contact their supervisor/foreman immediately.

V. Spill Prevention

All Chemicals will be stored in their closed and proper containers to minimize the potentials for spills and leaks.

A proper spill kit will be available if and when chemicals are to be handled. Spill kits will be easily accessible, contain the appropriate supplies and type/quantity of material will be taken into consideration.

In the event that a spill does occur the project manager, superintendent and safety coordinator must immediately be contacted. The type of chemical and quantity spilled will determine what steps must be taken next. All SDS sheet precautions/instructions must be followed.

VI. Hydrogen Sulfide (H2S)

A. Characteristics of H2S present in the workplace, operations and office:

1. Color - Colorless (gas)
2. Flammability - Extremely flammable
3. Odor - Smells like rotten eggs at low concentrations
4. Solubility - Soluble in water
5. Toxic by-product from - Petroleum and gas refining, viscose rayon production, rubber production etc.
6. Toxicity - Cellular poison, occurs through inhalation that affects all organs particularly the nervous and pulmonary system

B. Health Effects

1. Inhalation - Depending on exposure levels symptoms can range from nausea, headaches, nose, throat and lung irritation, digestive upset and loss of appetite, and loss of smell all the way to pulmonary edema, pneumonia and death.
2. Eye Contact - inflammation, scratchiness, irritation, tearing, burning, sensitivity to light, blurred vision and ulceration

C. H2S can be found in the gases from volcanoes, sulfur springs, undersea vents, swamps, and stagnant bodies of water and in crude petroleum and natural gas. Hydrogen sulfide also is associated with municipal sewers and sewage treatment plants, swine containment and manure-handling operations, and pulp and paper operations. Industrial sources of hydrogen sulfide include petroleum refineries, natural gas plants, petrochemical plants, food processing plants, and tanneries

If H2S exposure is possible, fixed or portable monitors will be used to detect H2S and an alarm will sound if the appropriate permissible exposure limit of 10 ppm is exceeded. In the event the alarm is sounded all employees must evacuate the area and follow the site-specific emergency action plan (***See Section 10, Emergency Action Plan***). If an employee is to reenter the contaminated area they must wear a self contained breathing apparatus (SCBA) or airline respirator.

If an employee is exposed or could have been exposed to H2S the site supervisor must be notified so that other employees can safely evacuate the area. Any employee who is exposed to H2S for any length of time must seek immediate medical attention. The effects of H2S depend on how much hydrogen sulfide is inhaled and for how long. Exposure to very high concentrations can quickly lead to death.

VII. Non-Routine Tasks

Before any non routine task is performed, employees shall be advised and/or they must contact their supervisor for special precautions to follow and the project superintendent shall inform any other personnel who could be exposed. No non routine tasks are known to exist at the time of preparation of this program. BHB will advise clients of any hazards found or unique hazards presented by our company's work.

In the event such tasks are required, the project superintendent will provide the following information about such activity as it relates to the specific chemicals expected to be encountered.

VIII. Personnel Exposure (contractors)

The project superintendent will also be responsible for contacting each contractor before work is started to gather and disseminate any information concerning chemical hazards the contractor is bringing into the workplace, and vice versa. All SDS information shall be current and shall be specific to the project. BHB will provide a location on site for the storage of the subcontractors' Hazard Communication Program and Safety Data Sheets.

IX. Confidentiality

BHB will respect the confidentiality of trade secret information when process safety information is released.

Certification of Hazcom Training

BENCHMARK houston builders

I, _____, have attended training on the Hazard Communication Program for employees of BENCHMARK HOUSTON BUILDERS, L.P.

I know where the Hazard Communication Program, all SDS's and the emergency first aid kit are kept.

I am aware I can review the copies of the written program, hazardous chemical inventory list and SDS's sheets.

Date: _____

Signed: _____

Printed Name: _____

Signature of Instructor: _____

Printed Name of Instructor: _____

Procedures During Governmental Inspections

I. Work place inspections may be made by one or more of the governmental agencies listed below:

A. Occupational Safety & Health Administration (OSHA)
B. Mine Safety & Health Administration (MSHA)
C. Texas Workers' Compensation Commission

When a representative of any of the above-listed agencies appears at your work place, you should follow the guidelines set out below as close as possible. OSHA and MSHA have established hard and fast rules for their compliance officers, their procedure will be used as a basis for our company response.

If you are a supervisor and the compliance officer contacts you, get in contact with the safety officer or company president. Let them handle the matter. If they are not available, then follow instructions set out below.

II. If you are a project supervisor, you should follow the procedures outlined below:

A. Greet the compliance officer cordially.

B. The compliance officer should at this time present credentials of identification and tell you the nature of his business. Should the compliance officer fail to present proper credentials of identification, he is in violation of Federal Regulations and we might have grounds to have any citation issued set aside.

C. The compliance officer will advise you of the reason for his inspection. One of three reasons will normally be given:

1. Scheduled Inspection
2. Complaint (Referral)
3. Accident/Incident (reported to OSHA or media event)

Or, they could be making a follow-up inspection to check out abatement if the job has been previously cited, as a result of viewing an IDLH condition (drive-by observation).

D. Immediately after identification and statement of purpose of the visit by the compliance officer, the supervisor should ask the officer to wait a few minutes while you call the main office.

E. You should then call the safety officer at the main office and advise him/her of who the compliance officer is and why the job site is being inspected. The safety officer will want to know the name of the officer and why the inspection is being conducted.

If the safety officer is in, he/she will review key points with you and in cases where it is possible, will come to the work site and assist you during the inspection. In the event he/she is out, contact the company president for assistance.

F. If any of the employees are represented by a labor organization, they must be given the opportunity to have a representative accompany the compliance officer on the walk around. If an employee representative does go on the walk around, the company will pay the employee representative for this time.

IT IS IMPORTANT THAT YOU LET THE SAFETY OFFICER KNOW IMMEDIATELY OF ANY CONTACT BY ANY ENFORCEMENT AGENCY.

G. Accompany the compliance officer on the walk around. Remember, you are the company spokesman so watch what you say.

H. Under OSHA, MSHA and State Plans, the compliance officer has the right during the inspection to interview in private any employee. You can inform the employee of his rights concerning making statements to the officer.

I. During the inspection, listen to the officer's comments and/or criticisms and take detailed notes. You should take photographs of the same things the compliance officer takes. If the officer has a video camera, tell him/her you are requesting that he/she not use it, but that pictures are acceptable. Should he insist on using the video camera, let him know we are allowing him to inspect, but are not comfortable in the use of the video camera. If he still insists, contact the main office for guidance before continuing.

J. If violations of the OSHA or MSHA standards are cited and they can be corrected, then correct them immediately.

   In some cases, they will insist that correction be made immediately. A spirit of cooperation should be exhibited at all times, but you should document by photo or witness any situation that you feel is correct prior to making any changes. If measurements are needed be sure to take them. Be sure to advise the safety officer of this, as we may want to include it in our defense if a citation is issued.

K. Feel free to discuss the alleged violation with the compliance officer, but do not argue with him regardless of how unreasonable the alleged violation may seem. Remember to take good notes.

L. You have the right to call the main office and consult BHB's principals at any time during the inspection. Always keep your safety officer informed.

M. The inspection will end with a closing conference at which time the compliance officer will go over the alleged violations and advise you of what citations will be issued, if any.

N. Immediately after the compliance officer leaves the work site, another call should be made to the safety officer advising what violations were discussed. It may be necessary that some detail documentation be done at this time to assist in the determination on whether the citation will need to be contested.

Remember, if you keep your work place well policed and free of hazards, no citation will be issued. Should a citation be issued, we need all the facts in order to determine where we need to improve our safety program.

Emergency Action Plan

Each BHB location/jobsite shall have a written Emergency Action Plan, appropriate to the hazards of the workplace, in order to respond to an emergency that may require rescue or evacuation. Each Emergency Action Plan shall be prepared to reflect all known probable emergency conditions which may arise from within the workplace and from adjacent workplaces, the minimum of which will include fire or other emergencies. The emergency action plan must be available to all employees to review. An emergency action plan must be in writing, kept in the workplace and available to employees for review. However, if a site has 10 or fewer employees the plan may be presented orally to employees.

Contact information will be provided to employees who need additional information pertaining to the plan or to their respective duties. The safety coordinator may be contacted by employees who need more information about the plan or an explanation of their duties under the plan

I. Emergency Response Planning, Issuing and Annual Review Guidelines

A. Emergency Procedures shall be issued and discussed with all new/transferred personnel upon arrival for assignment. Emergency Action Plans shall be established, implemented, reviewed, maintained and updated annually in conjunction with:

1. Client emergency services department requirements.
2. BHB safety staff and management.
3. The requirement to ensure the plan is up to date to reflect current circumstances at the workplace.

B. The plan is to be reviewed before the job and when conditions warrant and should be used for routine and non-routine emergencies as well as changes in operation, and products or services which warrant new emergencies situations.

C. A review of the emergency action plan should occur with employees:

1. When the plan is developed or the employee is assigned initially to a job.
2. When the employee's responsibilities under the plan change.
3. When the plan is changed.

II. Procedures for Emergency Evacuation Planning

A. The emergency action plan must include procedures for emergency evacuation. An emergency action plan must include, at a minimum, procedures for emergency evacuation, including type of evacuation and exit route assignments.

B. The individual site evacuation procedure shall be appropriate to the risk and must be developed and implemented to:

1. Notify staff, including the first aid attendant, of the nature and location of the emergency,
2. Evacuate employees safely and procedures to account for all employees after evacuation,
3. Check and confirm the safe evacuation of all employees,
4. Notify the fire department or other emergency responders, and
5. Notify adjacent workplaces or residences which may be affected if the risk of exposure to a substance extends beyond the workplace. Notification of the public must be in conformity with the requirements of other jurisdictions, including provincial and municipal agencies.

III. List of Potential Emergencies

A. An emergency action plan must include, at a minimum, procedures for reporting a fire or other emergency.

B. Each location shall conduct a risk assessment for hazards posed by potential hazardous substances from accidental release, fire or other such emergencies that could cause an evacuation or rescue and list the potential emergencies for BHB operations. Procedures for each of these potential emergencies shall be contained within the Emergency Action Plan. Examples include:

1. Fire
2. Gas Leaks/Chemical Spills
3. Bomb Threats
4. Medical Emergencies
5. Explosion
6. Workplace Violence

IV. Guidance Procedures for Potential Emergencies

NOTE: In the event one of the below emergencies were to occur please notify the company president, safety officer and safety coordinator as soon as possible.

A. Fire

1. Warn others in the immediate area. Notify the appropriate emergency response personnel by phone or radio and pull the nearest fire alarm if present.
2. If nearby staff have been trained, and it is safe to do so, fight the fire using a portable fire extinguisher. Remember, if in doubt get out. It is our moral and legal responsibility to do whatever we can to put out the fire while it is small. In doing so, DO NOT risk injury to yourself.
3. Evacuate the premises via the nearest exit and proceed to the nearest Emergency Assembly Area.
4. Re-enter only after the ALL CLEAR has been given

B. Gas Leaks/Chemical Spills: Upon smelling or noticing a gas leak or unusual vapors, or a chemical spill:

1. Pull fire alarm (if present) or sound warning and evacuate the premises via the nearest exit
2. Proceed to the Emergency Assembly Area
3. Contact local emergency response personnel by phone or radio
4. Re-enter only after the ALL CLEAR has been given.
5. If employees are required to control a release of a hazardous substance, to perform cleanup of a spill, or to carry out testing before re-entry, COMPANY shall provide:
   a. Adequate written safe work procedures and documented training.
   b. Appropriate personal protective equipment which is readily available to employees and is adequately maintained, and
   c. Material or equipment necessary for the control and disposal of the hazardous substance.

C. Bomb Threats

1. If a threat is received by phone, mail or other means, get as much information as possible.
2. If the threat is received by phone, try to keep the person on the line for as long as possible. Do not hang up the phone, even after the call has been terminated.
3. Contact local emergency response personnel by phone or radio.
4. If a suspicious device is identified, evacuate the immediate area and notify local emergency response personnel.

D. Medical Emergencies

1. Call for assistance by phone or radio. Give the exact location, number of people injured, details of the medical emergency and apparent need of equipment to free victims.
2. If qualified, provide basic first aid, and keep the person comfortable. Do not move the person. Do not leave him/her unattended.
3. Arrange for emergency medical transportation based on the medical planning portion of the site's Emergency Action Plan.
4. Secure the area around the incident. Do not allow crowds or non-essential personnel to gather around the accident scene.

E. Explosions

1. Get down on the floor, take shelter under tables or desks, and protect your face and head against flying glass and debris.
2. Once it is safe to do so, evacuate the premises via the nearest exit and proceed to the nearest Emergency Assembly Area.
3. Re-enter only after the ALL CLEAR has been given.

F. Workplace Violence

1. Notify the authorities immediately by phone or radio and report the occurrence.
2. Do NOT attempt to physically intervene.

V. Media Response Plan

A. BHB employees may not be interviewed by anyone unless a BHB Legal Representative has given prior approval. In most cases the Legal Representative will be present for such interviews.

B. If after BHB personnel have received approval for an interview from the Legal Representative and another party's attorney appears unannounced, you should politely adjourn the interview until BHB's Legal Representative can be contacted. Personnel must not give any work related interviews, affidavits, written or recorded statements, or depositions without the express approval from BHB's Legal Representative.

C. In the case of interviews of BHB employees by non-attorneys, (law enforcement, government officials, media, etc.) you must inform the Legal Representative before the interview. If the interview is taped or videotaped, you must request a copy of the tape. If the interview is reduced to writing, you must ask for a copy of any notes or statements taken. This procedure is to avoid information being misrepresented.

D. All media requests should be referred to the Company President. Unless requested to do so by the Legal Representative, other company personnel are not to give interviews or make statements to the media. Management prefers that families of personnel involved in an incident receive initial notification from a BHB representative and not the media.

VI. Location and Use of Emergency Facilities

A. BHB shall ensure each Emergency Action Plan lists the location and how to use emergency facilities for each work site. For off-site locations, outside services that can provide assistance in the event of an emergency should be identified and reviewed with workers prior to commencing work activities. A list shall be posted in a conspicuous area showing local emergency facilities and how to contact. Examples include:

1. Client Emergency Response Department (Initial Responder for All Emergencies If Applicable)
2. Local Police, Local Hospital, Poison Center (Poison Response) etc.

VII. Alarm & Emergency Communication

A. Each Emergency Action Plan for BHB shall contain methods to address alarms and communications in case of an emergency. For off-site locations, the method of emergency notification should be identified and reviewed with workers prior to commencing work activities.

B. Alarm System - A system must be in place to alert employees. The alarm system shall be distinctive and recognizable as a signal to evacuate the work area or perform actions designated under the emergency action plan. For sites with 10 or fewer employees in a particular workplace, direct voice communication is an acceptable procedure for sounding the alarm provided all employees can hear the alarm. Each Emergency Response plan will describe how to activate an alarm and what to do after either activating or hearing an alarm.

C. Personnel responding to any alarm shall avoid complacency. Every alarm should be treated as an actual incident until proven otherwise. Treating and responding to alarms as a routine happening can result in injuries, fatalities and destruction of property.

D. Communications - Company responders and security use telephones, cell phones and radios in conjunction with emergency response.

VIII. Rescue and Evacuation Procedures

A. Procedures for Rescue and Medical Services -

1. Each site Emergency Action Plan shall address who performs rescue services when required. It is the position of BHB that all rescue and medical duties are performed by trained emergency personnel and/or local governmental responders whenever possible.
2. At least one member of a rescue team must be a first aid attendant trained to immobilize an injured employee.
3. Effective communications must be maintained between the employees engaged in rescue or evacuation and support persons.

B. Procedure for Evacuation

1. Preparation for Evacuation - Each site Emergency Action Plan shall contain a procedure for evacuation if required.
2. Critical Operations Personnel - Staff designated to remain in the facility to shut down or supervise critical operations or equipment will be specifically trained and authorized by management to perform their duties.
3. Coordination Within a Facility - Emergency training and drills should also be coordinated within a client's facility so that key staff are involved in the planning process and are aware of their responsibilities in an emergency as well as during the drill. Facility management also needs to be informed of the potential for the interruption in productivity and business

operations.

4. Procedures to Account for All Employees After Evacuation - An emergency action plan must include, at a minimum, procedures to account for all employees after evacuation. Each muster or assembly point will have a blank roster for evacuees to enter their name. All completed rosters will be gathered and checked against a master list of employees assigned or checked in at the facility to verify all employees are accounted for.
5. Emergency Evacuation Notification and Routes - In the event of an emergency occurring within or affecting the work site, the superintendent makes the following decisions and ensures the appropriate key steps are taken:
   a. Advise all personnel of the emergency.
   b. Activate the emergency notification sequence to alert the appropriate responders and initiate emergency notification within the building.
   c. Evacuate all persons to the identified assembly area and account for everyone including visitors and clients.
   d. All personnel will proceed to the primary safe area immediately located at the identified emergency assembly area for their location.
6. Sweep Check - Establish a pattern that will permit covering the area in the shortest time, with a minimum of backtracking.
   a. When the evacuation alarm rings, stop work immediately, and conduct a sweep of the area. Ask everyone to leave the premises immediately and proceed to the identified emergency assembly area for their location.
   b. If you encounter smoke or flame, leave that section immediately, finish your sweep and evacuate the building by activating fire alarm pull stations. Remember, if in doubt get out.
   c. If anyone refuses to leave, note their name and location, and advise emergency services personnel.
   d. Meet emergency services personnel and advise them of your sweep or an area of smoke or flame that you were unable to check. Assist with head count and evacuation if required.
   e. Ensure that everyone stays at the emergency assembly area until the all clear to re-enter the building has been given.
7. Evacuation or Drill Evaluation - Following an evacuation or drill a response review shall be conducted and documented by BHB and lessons learned shared with the appropriate responders and staff.

Project Number: _____ **Project Name:** _____

Project Location: _____

Location Of Emergency Facilities Name/Address/Phone Numbers of the nearest emergency services:		
Employees trained in CPR/First Aid/AED and Emergency Equipment (NOTE: Transportation for ill or injured workers is by emergency vehicle. CALL 911)		
Emergency Assembly Area Location everyone meets in case of an emergency		
Alarm and Emergency Communication Describe how personnel will be notified if they need to evacuate the building/site		
Emergency Equipment (Locations of all emergency equipment i.e. first aid kit, AED, fire extinguishers, fire alarms, fire hoses etc.)		
Potential Emergencies	Fire	Explosion
	Medical Emergencies	Workplace Violence
	Gas Leaks	Bomb Threats
Emergency Procedures Fire	•Warn others in the immediate area. •Notify the appropriate emergency response personnel by calling 911 and pull the nearest fire alarm if present. •If nearby staff have been trained, and it is safe to do so, fight the fire using a portable fire extinguisher. Remember, if in doubt get out. It is our moral and legal responsibility to do whatever we can to put out the fire while it is small. In doing so, DO NOT risk injury to yourself. •Evacuate the premises via the nearest exit and proceed to the nearest Emergency Assembly Area. •Re-enter only after the ALL CLEAR has been given	

Emergency Procedures Medical Emergencies	•Call 911. Give the exact location, number of people injured, details of the medical emergency and apparent need of equipment to free victims. •If qualified, provide basic first aid, and keep the person comfortable. Do not move the person. Do not leave him/her unattended. •Secure the area around the incident. Do not allow crowds or non-essential personnel to gather around the accident scene.
Emergency Procedures Gas Leaks	•Pull fire alarm (if present) or sound warning and evacuate the premises via the nearest exit •Proceed to the Emergency Assembly Area •Contact local emergency response personnel •Re-enter only after the ALL CLEAR has been given.
Emergency Procedures Explosions	•Get down on the floor, take shelter under tables or desks, and protect your face and head against flying glass and debris. •Once it is safe to do so, evacuate the premises via the nearest exit and proceed to the nearest Emergency Assembly Area. •Contact local emergency response personnel •Re-enter only after the ALL CLEAR has been given.
Emergency Procedures Workplace Violence	•Notify the authorities/local emergency response personnel immediately and report the occurrence. •Do NOT attempt to physically intervene.
Emergency Procedures Bomb Threats	•If a threat is received by phone, mail or other means, get as much information as possible. •If the threat is received by phone, try to keep the person on the line for as long as possible. Do not hang up the phone, even after the call has been terminated. •Contact local emergency response personnel. •If a suspicious device is identified, evacuate the immediate area and notify local emergency response personnel.
Procedures For Evacuation	•Notify superintendent of the nature and location of the emergency •Advise all personnel of the emergency. •Alert the appropriate emergency responders •Evacuate all persons to the identified assembly area and account for everyone including visitors and clients. •Superintendents will use a blank roster for evacuees to enter their name. Rosters will be checked against a master list of employees assigned or checked in at the facility to verify all employees are accounted for. •Notify adjacent workplaces or residences which may be affected if the risk of exposure to a substance extends beyond the workplace.
Designated Rescue Workers	All rescue duties shall be performed by trained emergency personnel and/or local governmental responders whenever possible. Personnel trained in CPR/First AID/AED should only perform the duties in which they are trained.

Completed On: _____

Signature: _____

First Aid and Medical Procedures

In case of a medical emergency call 911.

I. BHB will provide first aid services and arrange for emergency transportation of employees who sustain occupational injuries or illnesses.

A. First Aid Services

1. There shall be available on each shift of all projects, no matter what size, a person trained in CPR / First Aid / AED. Employees will be trained by a qualified instructor such as the American Red Cross (or equivalent) and be able to provide proper documentation of their training. Those individuals will be expected to follow the Bloodborne Disease Control Plan as shown later in this section.
2. On a job where there is a safety supervisor, he/she shall be responsible for implementing the project specific first aid/medical treatment procedures..
3. On some jobs, the owner's first aid or medical facilities may be made available to us.
4. First aid supplies will be available to all employees for the treatment of work-related injuries and sudden illness.
5. A log will be kept on all personnel who report for first aid treatment.
6. Medical cases which require treatment beyond first aid will be referred to an off site medical facility as determined by the severity of the injury or illness. Arrangements with the medical facilities, i.e., doctors, hospitals, etc., will be prearranged prior to start up of the project.
7. Our standard first aid kit inventories are listed at the end of this section. These inventories are based on the kits we are presently purchasing. Inventories are listed by the different sizes of kits. Kits are inspected periodically to ensure all required supplies are available.
8. Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.
9. Non-emergency transportation shall be provided to a first aid station or to a designated physician. A vehicle shall be made available at all times.

B. Transportation, Emergency

1. In a situation where the injured cannot be moved, the person on the job responsible for first aid will go to the location and administer first aid until the ambulance arrives.
2. The proper handling of injured or ill employees and their transportation to a hospital is of crucial importance.
3. The method of transportation to the hospital or first aid facility will be prearranged.
4. In all cases of injury or death, the superintendent or designated person shall call the medical facility, if possible, while the ambulance is still en route or certainly while the victim is still in the emergency facility to give them all the available information regarding the nature and the extent of the injury or illness. A routine blood, alcohol and drug screen will be requested in addition to any treatment prescribed.

C. Injury Management - Fit For Duty

1. All employees must be physically capable of performing their job function

2. An employee who has sustained an on-the-job injury or illness may return to work provided that the attending physician has approved in writing and provided that the normally assigned job of that employee is still available and he/she meets any physical restrictions or limitations. Employees who are given restrictions to their work will not be permitted to return to work until a review of the case has been made by the:
   a. Attending Physician
   b. Employee's Supervisor
3. Employees must be responsible for ensuring they are physically and mentally fit to perform their job functions safely. If an employee is not able to perform their duties safely due to their physical or mental state, they are responsible for notifying their supervisor.

II. BLOOD BORNE AND OTHER BODY FLUID DISEASE CONTROL PLAN FOR FIRST AID RESPONDERS

This company policy is to eliminate or minimize employee exposure to blood borne pathogens in the course of providing first aid treatment to injured employees. Generally, all blood is considered potentially infectious. One main concern is the exposure to the Hepatitis B Virus (HBV) and Human Immunodeficiency Virus (HIV), although any body fluid should be considered as potentially infectious material. This policy applies to all BHB personnel who have the potential to be exposed to blood or other bodily fluids. Only first aid trained personnel may contact or treat open wounds, provide resuscitation or clean up spills or otherwise contact body fluids.

A. Personal Protective Equipment

All employees who are trained and authorized to provide first aid are required to use the personal protection equipment provided by the company at no cost. This protection is to be readily accessible at our first aid stations and will include:

Vinyl medical gloves - To be used when treating injuries that may involve contact with blood or other body fluids and when cleaning up body fluids. These gloves will be, disposable, hypoallergenic and in appropriate sizes.

Mask or eye protection and vinyl/plastic apron - To be used when stopping arterial bleeding or any other time when there is a chance of blood or other body fluid contact from splashes, splatters, etc. These items will be disposable and will removed as outlined in the cleanup procedures. Plastic mouthpieces will be disposable and available in all first aid stations for use in pulmonary resuscitation.

The job site will be inspected regularly to insure that the personal protective equipment mentioned above has not been removed or damaged and if found in either condition these items will immediately be replaced; and that special disposal containers for waste items are available and are being used. Sharps disposal containers should be available although use of sharps such as needles or syringes are not required in the normal course of business. Proper disposal shall be required as outlined in this plan of sharp objects such as broken glass or equipment when contaminated by blood or body fluids.

B. First Aid Treatment Procedures

1. First aiders will wear vinyl medical gloves and administer first aid operations in such a manner as to minimize splashing, spraying, splattering and generation of droplets of these substances. When these first aiders are exposed to blood, body fluids and potentially infectious materials, they are required to wear approved gloves, eye protection, goggles, or face shields, surgical masks and aprons.
2. After providing treatment or performing cleanup, authorized first aiders shall remove their

protective clothing (gloves last) and wash thoroughly with soap and water. All personal protective equipment used in the treatment will be disposed of, never reused. This equipment will be disposed of in designated containers labeled for contaminated waste as outlined in the cleanup procedures. When hand-washing facilities are not available, they are to use the appropriate antiseptic towelettes until they can use soap and water as soon as feasible. These towelettes will be provided at the first aid station. In cases where contact is made unexpectedly before putting on the protective clothing, wash thoroughly and put on protection before proceeding.

3. Food and drinks will not be kept in our refrigerators, freezers, shelves, cabinets, counter tops, or bench tops where blood or other potentially infectious materials are present. Employees are to eat and drink only in designated locations away from the first aid station. Other prohibited activities such as handling eye contacts, etc. are not allowed near the first aid station.
4. No employee is to be engaged in mouth pipetting and/or suctioning of blood, etc.
5. Broken glassware, which may be contaminated, will be removed by use of a brush broom and dust pan. Whether first aid trained or not, our employees must not pick up glassware directly with their hands. Never the less, if required, only approved, puncture resistant sharp disposal containers are to be used to dispose of used needles, syringes, and other sharp objects. First aiders are not to: recap needle, break or bend needles, remove needles from disposable syringes; or re-shelf used needles. Those non-disposable sharps that are intended to be reprocessed and reused are to be stored in approved non-puncture containers in a sanitary manner. These containers will be leak proof on the sides and bottoms with the proper identification label or a color-coded container will be used.
6. Blood saturated dressings, dressings containing body fluids and other regulated wastes are to be disposed of in approved containers (close-able; constructed so as to contain all contents and prevent leakage of fluids during handling storage transportation and shipping). They will be properly labeled or color-coded. These waste materials will be removed from our premises by immediate notification to the safety coordinator who will make arrangements for disposal by a licensed hazardous waste removal company. That company will handle the actual transportation for the wastes from our work site.
7. If there is any contaminated laundry, it will be deposited in approved laundry bags and containers that are leak resistant, these are properly labeled as to the contents stored within. These will be removed from the premises by an approved commercial laundry.

C. Cleanup Requirements

Any accident location, first aid station and other blood or body fluid contaminated area will be off limits to all employees until it is cleaned and decontaminated. Only persons who are trained and authorized first aiders will clean up all body fluid spills, splatters, etc. The personal protective equipment listed above will be worn during cleanup. A blood and body fluid clean up kit is required at each first aid station. The kit should contain disposable supplies consisting of:

Antiseptic towelettes or germicidal/disinfectant foam, water, plastic disposal bags, vinyl surgical gloves, plastic aprons, face masks, and a roll of paper towels. Diluted chlorine bleach, (1 part chlorine bleach to 6 parts water), may be used as a disinfectant solution.

All used medical supplies and clean up materials will be sterilized with a disinfectant solution, then placed in the marked authorized “RED BIOHAZARD” plastic bags, and taped closed. Sharps containers will be used for sharp items. The safety coordinator will make arrangements

for special disposal.After performing cleanup, employees shall remove their protective clothing (gloves last) and wash thoroughly with soap and water. When hand-washing facilities are not available, employees are to use the appropriate antiseptic towelettes until they can use soap and water as soon as feasible. In cases where contact is made unexpectedly before putting on the protective clothing, wash thoroughly and put on protection before proceeding.

D. Medical Provisions

Employees who are trained and authorized to provide first aid will be offered the Hepatitis B Virus (HBV) inoculation at company expense. There will be no prescreening requirements of the employee. Persons who refuse inoculation are required to sign a form acknowledging refusal (Declination Form). Should the employee change his/her mind on accepting the inoculation, at the request of the employee, the company will make arrangements for the shots to be offered.

Employees who have had unprotected contact with potentially infectious body fluids will be offered at no cost appropriate medical testing, follow-ups and counseling after an exposure incident by our treating physician. Those exposed employees will document the circumstances of their exposure so the company can identify and have medical tests run on the source individual as well as the exposed first aid responder's blood with their consent. All information will be kept confidential and the exposed employee may have access to the information.

E. Training Requirements

When an employee is trained for first aid, there is an orientation program explaining blood borne diseases and their modes of transmission that includes the compliance with our exposure plan, how to handle exposure incidents; engineering and work practice controls; use of personal protective clothing and equipment, voluntary vaccination program and follow-up programs; and the labeling and sign system. There is a question and answer session. This procedure is conducted annually thereafter and when responsibilities change. Also, upon request to the safety coordinator, our employees will have access to a copy of the OSHA Blood borne Pathogen standard 1910.1030. These training procedures will be documented and recorded.

F. Training and Medical Record Keeping

Training records will be kept and will include the individual's name, social security number, home address, phone number and date the training was conducted and will to be kept for three years. The records will also have a copy of the employee's Declination Form if the employee declines the HBV inoculations.

Medical records will be kept on all employees exposed to blood borne pathogens for the duration of their employment and thirty years thereafter. These records will be the investigative information concerning the exposure; any medical test results, counseling records or any other documents that are collected for the exposure. We will make any and all of these records available to the subject employee, employee representatives, or anyone with written consent of the employee along with OSHA and NIOSH.

Truck First Aid Kit Inventory

Quantity	Description	Check if Present
1	adhesive strips 2 “ X 4 1/2 “ (Loose)	[ ]
30	elastic strips 1 “ X 3 “	[ ]
1	adhesive tape 1/2 “ X 1 1/2 yds.	[ ]
1	gauze conform bandage 2 “ X 5 yds.	[ ]
5	gauze pads 2 “ X 2 “ (Loose)	[ ]
5	gauze pads 3 “ X 3 “ (Loose)	[ ]
2	gauze pads 4 “ X 4 “ (Loose)	[ ]
1	combine pad 5 “ X 9 “	[ ]
1	irrigate eyewash 1/2 oz.	[ ]
2	eye pads, sterile (Loose)	[ ]
4	antiseptic wipes (Loose)	[ ]
1	cold pack small	[ ]
1	# 10 vehicle kit (Empty)	[ ]
1	kit scissors red handle	[ ]
1	EC tweezers	[ ]
2	povidone - iodine pads	[ ]
5	triple-antibiotic ointment 1/32 oz.	[ ]
2	sting ease swabs	[ ]
1	butterfly closure lg.	[ ]
1	ammonia inhalant	[ ]

Medium First Aid Kit Inventory

Quantity	Description	Check if Present
2	elastic strips 1 " 100/box	[ ]
20	elastic knuckle dressing (Loose)	[ ]
20	elastic fingertip dressing (Loose)	[ ]
1	adhesive tape 1/2 " X 5 yds.	[ ]
10	butterfly closures large (Loose)	[ ]
10	butterfly closures medium (Loose)	[ ]
1	gauze conform bandage 2 " X 5 yds.	[ ]
1	gauze conform bandage 3 " X 5 yds.	[ ]
1	non-adherent w/ tabs 2 ' X 3 ' 20/box	[ ]
3	combine pad 5 " X 9 "	[ ]
1	elastic bandage - ace 3 "	[ ]
1	triangular bandage 1/box	[ ]
1	cotton - tip applicators 3 " 100/vial	[ ]
1	irrigate eyewash 4 oz.	[ ]
2	eye pads, sterile (Loose)	[ ]
1	burn ointment 20/box	[ ]
1	peroxide 8 oz.	[ ]
1	pvp iodine swabs 10/box	[ ]
10	alcohol wipes (Loose)	[ ]
10	antiseptic wipes (Loose)	[ ]
8	triple antibiotics	[ ]
2	ammonia inhalants (Loose)	[ ]
1	burn septic 5 oz.	[ ]
1	cold pack small	[ ]
1	#1087 small wall cabinet	[ ]
1	kit scissors red handle	[ ]
1	EC tweezers 3 "	[ ]
1	gloves 2 pair/pkg	[ ]
1	elastic fingertip (lg) 50/box	[ ]
5	extra Lg. strips 2 X 4 1/2	[ ]

Large First Aid Kit Inventory

Quantity	Description	Check if Present
10	adhesive patch - small (Loose)	[ ]
10	adhesive strips 2 " X 4 1/2 " (Loose)	[ ]
1	elastic strips 1 ' 100/box	[ ]
1	elastic knuckle dressing 100/box	[ ]
1	elastic fingertip dressing - large 50/box	[ ]
1	elastic fingertip dressing - small 100/box	[ ]
1	adhesive pads 2 X 3, non-adherent 20/box	[ ]
1	adhesive tape 1/2 " X 10 yds/.	[ ]
10	butterfly closures - large (Loose)	[ ]
10	butterfly closures - medium (Loose)	[ ]
1	gauze conform bandage 2 " X 5 yds.	[ ]
1	gauze conform bandage 3 " X 5 yds.	[ ]
1	gauze pads 3 " X 3 " 10/box	[ ]
1	gauze pads 4 " X 4 " 10/box	[ ]
3	combine pads 5 " X 9 "	[ ]
1	elastic bandage - Velcro 3 "	[ ]
1	triangular bandage 1/box	[ ]
1	cotton-tip applicators 3 " 100/BOX	[ ]
1	irrigate eyewash 4 oz.	[ ]
4	eye pads, sterile (Loose)	[ ]
1	burn ointment 20/box	[ ]
1	peroxide 8 oz.	[ ]
1	povidone iodine swabs 10/box	[ ]
1	sting ease swabs 10/box	[ ]
10	alcohol wipes (Loose)	[ ]
10	antiseptic wipes (Loose)	[ ]
10	triple antibiotic (Loose)	[ ]
2	ammonia inhalants (Loose)	[ ]
1	burn septic spray 5 oz.	[ ]
1	# 3 medium wall cabinet	[ ]
1	kit scissors red handle	[ ]
1	EC tweezers 3"	[ ]
1	cold pack (small)	[ ]
1	gloves 2 pair/pkg.	[ ]

Accident and Incident Investigation

I. All incidents and accidents whether resulting in injury to either employees, subcontractors or trade contractor employees must be investigated and immediately reported to the project manager, safety coordinator, main office and client (host facility) by the project superintendent. If the superintendent is not present, the foreman or project manager will carry out the investigation. All accidents resulting in property damage due to whatever cause must also be investigated. The investigation should begin immediately; obviously, first aid and care to injured persons must take precedence over the investigation. OSHA must be notified within 8 hours if an employee is killed on the job or suffers a work-related hospitalization, amputation, or loss of an eye.

A. All personnel will be trained in their roles and responsibilities for incident response and incident investigation techniques.

B. Proper equipment will be made available to assist in conducting the investigation. I.E. writing equipment such as pens/paper, measurement equipment such as tape measures and rulers, cameras, small tools, audio recorder, PPE, marking devices such as flags, equipment manuals, etc.

C. All incidents will be investigated to the appropriate level with regards to incident severity utilizing a root cause analysis process.

D. Physical evidence must be preserved to the fullest extent possible. In accidents other than minor injuries that are easily treatable on the job, photographs should be taken of the accident area and any equipment involved as soon as possible after the event.

E. Statements from witnesses or people who have knowledge of the actual cause of the accident should be included in the investigation report. As soon as the injured is cared for, the project superintendent should provide to everyone who is involved or witnessed the incident, a piece of paper. Ask them to document what they saw and heard. They need to write the date, time of day, and sign their statements before giving it to the project superintendent. While they do that, the superintendent and project engineer or safety officer will investigate the accident thoroughly, not attempting to assess blame. They will obtain facts, such as time of day, condition, weather, temperature, wind and any other details that may prove useful. The purpose of this accident investigation is simply to obtain facts. Assessment of the source of the problem will happen at a later date.

F. Information received from people at the scene may or may not be highly accurate. A variety of factors can color the facts and there may not be one single cause for any accident. Concentrate on the facts. Find out “who, what, where, why, and how.” Following completion of the accident investigation, a written report must be made using the Incident Investigation Report Form. .

   It is much better to have a report that is never used than to not have a report when it is essential to defending the company against liability and monetary loss. Remember, when in doubt, investigate and report.

G. Whether the accident involves an injury or damages to equipment or vehicles, the appropriate portion of the form must be filled out. The Incident Investigation Report Form is used for all types of accidents. Corrective actions must be identified and reported as well. This form is to be filled out completely by the foreman/superintendent with a copy placed in the job file and a copy sent immediately to the company safety coordinator.

H. Once the report has been filed a meeting will be held with all parties involved. The report will be reviewed and lessons learned will be communicated. Changes to processes will be placed into effect to prevent reoccurrence.

I. NOTE: After your investigation, if it is found that our firm in all probability caused damages to property or injured someone, notify the company president and safety officer, immediately. DO NOT HANDLE the claim yourself. DO NOT OFFER any settlement OR AGREE TO PAY for any repairs or replacement of property. Let the company handle that along with the firm's insurance carrier.

J. Regarding incidents and accidents involving subcontractor personnel, be certain to obtain a copy of the subcontractors investigation report and related documents. Subcontractors are required to complete the DWC-1 or similar document of information and investigation. Subcontractors may also need to fill out Form DWC-6. See Part II of Form DWC-6 for specific reasons. Forms DWC-1 and DWC-6 may be found in the ***Safety Form Section of this Safety and Health Manual***.

Accident and Illness Records

I. Record keeping requirements for the job site is an indispensable part of the company safety program and documents will be maintained as follows (Copies of the required forms are in the ***Safety Form Section of this Safety and Health Manual***)

A. Employee's First Report of Injury or Illness Form (DWC-1) Note: The DWC-1 is for use in Texas only. Supplemental Report of Injury (DWC-6) Note: The DWC-6 is for use in Texas only.

After any recordable injury on the job, the superintendent will complete the First Report of Injury or Illness Form, keeping a copy on file by the project manager and forwarding the required copy to the company safety coordinator. Subcontractors may also be required to fill out Form DWC-6. See Part II of Form DWC-6 for specifics.

B. OSHA Form 300 and 300A

The OSHA Form 300 for Recordable Injuries and Illnesses must be kept up-to-date on the project site BY THE SUPERINTENDENT ON SITE. The summary portion, OSHA Form 300A will be completed and maintained by the company safety coordinator, but it must be posted on the job site bulletin board from February 1st through April 30th of each year. It should then be placed in the job records.

Procedures:

1. Accidents should be reported to the project superintendent, immediately by the injured employee or, if this person is unable to report, by any employee witnessing the accident or the results of the accident.
2. If immediate medical attention is required, that should be taken care of first. If immediate care is not required, the superintendent/foreman should immediately obtain all pertinent information and fill out the Employee's First Report of Injury form while it is still fresh on his/her own mind and that of any witnesses or the injured person.
3. In addition to filling out the injury report, the superintendent will promptly contact the project manger, safety officer and safety coordinator and report the accident. The accident report must be sent to the office by the end of the next work day.
4. The Occupational Safety and Health Act states that each employer shall maintain a log of recordable occupational injuries and illnesses (OSHA Form 300). This means that the superintendent must record the name and pertinent details for any employee (or visitor) who receives medical treatment, suffers loss of consciousness, or is restricted in work or motion due to an injury.
5. At the beginning of each job, and at the beginning of each year, these forms are dispensed to all projects. This log must be maintained on the job and posted on the bulletin boards as required. The log must be available for review during any OSHA inspection. Assistance may be obtained from the company safety coordinator in the proper procedure for maintaining this record.
6. A doctor's release is required to be on file before the injured employee can return to work. Should an employee be put back to work with out a doctor's authorization, the company will be in violation of state law.

Job Site Security and Crime Prevention Policy

I. Policy

A. Security of people, office and property on all BHB projects and offices must be considered and planned for prior to start of construction. Prevention from harm, prevention of loss of equipment, supplies, or in-place construction through theft or vandalism is vital to the success of all projects and the company.

B. Implementation of job site security measures will be the responsibility of the project manager and the project superintendent. The guidelines stated below are to be used as an aid in the development of an effective security program for each company project.

II. Preamble

The need for security varies with the geographical location of the job site, existing security provided by owners and the stage of construction. Consideration and planning must be given to this aspect of the construction operation. As conditions change, so must the security plan.

III. Company Office Trailer

A. It is recommended under certain conditions that either a full-time or after-hour guard service be provided at the construction site. The guard's responsibilities will include controlling access to the project, parking, after hours security, material delivery and removal, along with intruder prevention or detection.

B. In the absence of a full time guard service after working hours, a silent remote reporting alarm may be provided. A licensed security and alarm service company would install this. It will detect noise, motion or entry within the office and report over a dedicated telephone line to the alarm company, which will in turn contact the police.

C. Phone numbers to contact responsible company personnel in the event of an emergency shall be displayed in such a way as to be visible to security or police personnel from outside the trailer or else formally made available to the alarm company and the police.

D. Fire resistant file cabinets shall be provided for all essential files.

E. Smoke or heat detectors shall be installed and maintained throughout the office complex.

F. All portable FM radios (even though being recharged) shall be stored after hours in a secure location, not readily visible.

G. All computers, calculators, typewriters, other office equipment and small tools, etc., will be inventoried. This will include a description and appropriate serial numbers. Tools shall be engraved or marked with identification.

H. Outside lighting shall be provided to illuminate the office complex, parking areas, material storage areas and if feasible, the area under construction.

I. All tool and storage trailers and sheds shall be locked after normal working hours.

J. All master and extra keys are to be kept in a locked cabinet or container and under the control of the project manager or the person he designates.

IV. Job Site

A. The job site may be totally enclosed with a fence, equipped with vehicle and personnel gates.

B. Appropriate signs stating, “Access is limited to construction personnel only. All visitors must report to the office” and “Hard Hats, and Safety Eye Wear Protection Required” shall be prominently displayed on the fence.

C. Parking for construction personnel shall be separated from the area under construction by fence or other suitable barrier.

1. Any personal or company vehicles allowed in the construction area must have a current insurance policy and a certificate of insurance must be on file with the company.
2. Food service vehicles must have an insurance policy for $500,000 liability, currently in effect; certificates of insurance must be in company files.
3. Vehicle passes will be issued to any vehicle (company, personal, or delivery) entering the construction area, if job size necessitates.
4. Passes will be provided for any material leaving the construction area, if job size necessitates.

D. Adequate area lighting shall be provided to illuminate all parking, storage, office, and construction areas.

E. A full-time (24-hours, every day) guard service may be obtained under certain conditions. If a full-time guard is not provided, then an after-hours guard may be considered for additional protection. Harassment of the guards by construction employees shall be grounds for denial of entry of the worker to the construction site.

F. All stored material shall be kept in a secure location, either inside a locked storage trailer, inside the building in a secure area, or in a well-lighted location, preferably in view of the guard station.

G. A close liaison must be established with the owner’s security personnel. Whenever possible, utilize their services to secure the construction and office areas.

IV. Procedures for Jobsite Theft and Vandalism

A. Preventative Action

1. Request regular checks of your site by the police.
2. IDENTIFY the property lines with “REWARD” signs and “NO TRESPASSING” signs.
3. ENCLOSE the area in fence: LOCK THE GATES, TRAILERS, TOOL BOXES EACH NIGHT. Chain down small toolboxes and equipment.
4. MARK all tools and equipment with your company insignia. An additional mark with invisible paint that shows up under black light only has proven a good device to identify stolen tools.
5. KEEP records of serial numbers on all tools and equipment.
6. LIGHT to illuminate job sites, access roads, gates and entrances.
7. REQUIRE adequate locks on all new equipment you purchase.
8. PROMPTLY RETURN TO THE YARD unneeded tools and equipment.
9. LOCK all cabs, filler caps, engine compartments, etc. of heavy equipment

B. When Theft or Vandalism Occurs

1. REPORT ALL THEFT TO POLICE. Be specific, including serial numbers, model numbers, color and size. Give all details to the police and to the safety officer. No theft is too small to report.

2. PROSECUTE ALL OFFENDERS. Police complain that firms fail to prosecute. (This includes our own employees, if involved.) Even if you only convict them of trespassing, it helps build a record against the “professional” construction thieves.
3. Discourage Profits or Theft
    a. Buy tools and equipment only from reliable suppliers. Insist they check serial numbers with local police lists if there is any question what so ever as to the origin of the tool.
    b. Require your tool service company to check serial numbers on all equipment serviced, and keep a record of company tools which they service.

Specific Safety Regulations

Personal Protective Equipment

I. General

Personal protective equipment will not prevent an incident. It will however, offer a significant amount of protection to a worker and reduce the effect of an incident as long as it is used properly and consistently. At the begining of a project a hazard assessment for PPE will be conducted and the assessment will be signed by the person who completed it.

Each employee shall be trained to know the following: When and what PPE is necessary, how to properly wear/adjust PPE, the limitations of PPE and the proper care, maintenance, useful life and disposal of PPE. Retraining will occur if an employee shows a lack of understanding and/or skills. All training will be documented and records kept at the main office.

The supervisor's job is to recognize the need for and monitor the use of protective gear. Supervisors must ensure that a sufficient supply of the following equipment is available at the start of all projects:

(The company will provide PPE to all employees at no cost.)

A. Hard hats for employees and visitors
B. Safety glasses with side shields (ANSI Z87.1 standards)
C. Safety harnesses and lanyards for work in exposed and elevated locations
D. Anchor points, lifelines and rope grabs for elevated work
E. Respiratory equipment as dictated by hazard
F. Goggles
G. Hearing protection
H. Cutting goggles for cutting operations
I. Welding hoods, lens, gloves, jackets, and sleeves for welding operations
J. Full-face shields for grinding, chipping, etc.
K. Safety vests (To be used at all times not just when working near traffic.)
L. Gloves as dictated by hazard and operation

II. The safety officer may designate an individual to ensure that a well-maintained stock of this equipment is available for use and kept in good/clean condition. Any piece of equipment that is broken or otherwise defective is not to be used and be disposed of properly.

When selecting personal protective equipment, the following requirements must be met:

A. Manufactured in accordance with accepted standards for performance and materials. American National Standards Institute (ANSI) and National Institute for Occupational Safety and Health (NIOSH) have established many of the standards.
B. Durability and, if possible, the ability to maintain the equipment on the job site.
C. Provide desired protection to worker against hazard exposure.
D. Provide maximum comfort with minimal weight and proper fit/sizing.
E. Provide minimum restriction of essential body movement, i.e. vision, etc.

III. Head Protection

A. All hard hats shall meet ANSI standard Z89.2-1971. Since there is no way to determine exactly who or when employees may be exposed to electricity, metal hard hats will not be worn.

B. Hard hats are to be worn at all times while engaged in daily work, except while working in offices where the ceiling tile has been installed and no eye hazards are present. Hard hats are to be available at all times to accommodate a change in work activities..

C. Hard hats should never be worn on top of everyday hats and caps. For cold climates, winter liners may be ordered.

D. Adjustment of the sweatband should be snug enough to stay on when the wearer leans over, looks up, or a strong wind gust blows. The hat should not be so tight that it leaves the band mark on the forehead

E. Never attempt to repair a damaged or cracked shell. Damaged hats are to be replaced immediately.

F. Drilling holes into the hat for any reason destroys the rated strength and is prohibited. Painting of the hat is prohibited.

G. Hard hats should be worn with the bill (visor) to the front (over the nose). The bill keeps many chips, dust and dirt particles from going over the safety glasses and into the eyes. Exceptions will be allowed for survey crew personnel while looking through the instrument, and while heads are in tight spaces, when the hard hat bill would interfere.

IV. Foot Protection

A. Employees are required to wear sturdy work boots which will provide adequate protection against injury to the feet. Tennis shoes, running shoes, sandals, light canvas shoes, etc. are not allowed for wear in construction areas.

B. Employees are expected to purchase and wear work boots or shoes with soles that are resistant to penetration and upper parts that offer ankle protection. Some job sites may require the wearing of steel toe safety boots and employees will be expected to comply.

V. Safety Eye Wear

A. All commercial quality safety eye wear will meet the ANSI standard Z87.1 requirements. Safety glasses/goggle eye wear will be worn at all times on all construction sites. In the equipment shop areas, all workers that are servicing equipment and machines will be required to wear safety eye wear.

B. Employees can get non-prescription eye wear replaced by requesting it from a supervisor. Should the supervisor find intentional damage or abuse by the employee, the employee will be required to replace it at his or her own cost.

VI. Safety Harnesses, Lanyards and Lifelines

A. Fall protection, as required by OSHA/MSHA and the company safety and health manual, shall be provided for employees.

B. During new-hire orientation and re-emphasized during safety meetings, each employee shall be made aware of the company's policy to wear safety harnesses when the location and work dictates. This policy is to be strictly enforced. Any employee found not using fall protection as required will face disciplinary action up to and including suspension or termination of employment.

C. Any employee whose work places them outside a protected area without guardrails or work is to be performed on suspended scaffolds or any working surface where they may be subject to a fall of 6 feet or more, shall be secured by a safety harness, lanyard, and lifelines as needed.

D. Lifelines shall be secured to a point above operations capable of withstanding a minimum of 5,000 pounds dead weight.

E. Safety harnesses, lanyards, lifelines and associated hardware shall be inspected after each use for wear and possible damage. If this equipment is subjected to in-service loading (an actual fall situation), it is to be removed immediately from service. Periodic inspections of all harnesses, lanyards, lifelines and associated equipment that has been kept in storage shall be completed to reveal any damage or deterioration that may have occurred. This inspection should be documented for all harnesses, lanyards, and lifelines. It shall include: date of inspection, condition of equipment, and the serial number for each item.

VII. Hearing Protection

A. Employees who will be exposed to noise levels in excess of the occupational exposure limit of 85 dba (higher levels for short periods of exposure) shall have hearing protection provided at no cost to the employee. Each employee who is exposed to noise at or above an 8 hour time weighted average of 85 decibels will be trained. The training program shall be repeated annually for each employee included in the hearing conservation program. Information provided in the training program shall be updated to be consistent with changes in protective equipment and work processes.

B. A monitoring program will be developed and implemented when information indicates that any employee's exposure may equal or exceed an 8 hour time-weighted average of 85 decibels.

C. Audiometric testing will be made available at no cost to all employees whose exposures equal or exceed an 8 hour time weighted average of 85 decibels. Within 6 months of an employee's first exposure at or above the action level a valid baseline audiogram against subsequent audiograms will be compared. The employee must not be exposed to workplace noise for at least 14 hours prior to the baseline audiogram. After obtaining a baseline audiogram a new audiogram will be conducted annually. If a standard threshold shift occurs the employee will be notified in writing within 21 days of determination and the following steps shall then be taken:

   1. Employees not wearing hearing protection will be fitted with hearing protection, trained in their use and care and required to use them.
   2. Employees already using hearing protection will be refitted and retrained and provided with hearing protectors offering greater protection

D. The two types of hearing protection available to reduce the exposure to excess noise levels are, ear plugs (in most instances are acceptable hearing protection) and earmuffs (may be added in very high noise areas).

E. Employees shall be given the opportunity to select their hearing protectors from a variety of suitable hearing protectors offered by BHB.

F. Hearing protection attenuation will be evaluated for the specific noise environments in which the protector will be used.

G. Plain cotton is not an acceptable protective hearing device.

H. When earmuffs are used for hearing protection, they must be cleaned and disinfected prior to issue to another employee, and each shift for anyone.

I. Employees are to be informed of the hazards associated with exposure to excess noise energy and the purpose and limitations of protective hearing devices. The use of protective hearing equipment is mandatory in high noise areas.

J. Noise exposure measurement records will be retained for at least two years.

K. Audiometric test records will be retained for the duration of the employee's employment.

VIII. Respiratory Protection

A. Respiratory equipment will be provided for any employee who is or may be exposed to hazardous concentrations of gases, dust, fume, or vapors. Employees are required to wear respiratory equipment to protect them from harmful concentrations. Our respiratory protection program stipulates that no one will wear a respirator unless they have been trained and checked medically. (***Refer to Section 15-2 of the Specific Safety Regulations.***)

B. Employees should not be assigned tasks requiring the use of respiratory equipment unless it has been determined that they are physically able to perform the work and properly use the respiratory equipment.

C. The supervisor shall maintain appropriate surveillance of the work area conditions for employee exposure and job effectiveness.

D. Where practical, respiratory equipment is to be assigned to individual workers for their exclusive use.

E. Wearing of contact lenses when using respiratory equipment is prohibited.

F. Employees shall use the respiratory equipment provided in accordance with the manufacturer's instructions and the training received. Projects that require the use of such equipment shall include the use and maintenance of respiratory equipment within each new-hire orientation. Refresher training on respiratory equipment shall be held periodically.

G. Employees who have beards, goatees, sideburns or any other facial hair, which prevents a good seal on the respirator, will not be permitted to work in conditions requiring respirators.

H. Respiratory equipment shall be cleaned and inspected as per manufacturer's recommendations.

I. See ***Section 15-2 of the Specific Safety Regulations*** for requirements of respirator use.

IX. Safety Vests

Safety vests, bright orange, green or yellow) will be worn at all times. This includes times when employees are working around any vehicular traffic, either on the project site or in a public motor vehicle traffic right-of-way.

Respiratory Protection

I. In order to limit possible hazardous chemical exposures, this company has established a program to ensure that employees are protected from those products. According to OSHA regulation, each employer is required to monitor the concentrations of each contaminant in the work place against the maximum permissible concentration allowed. Items which need monitoring include: harmful dusts, fogs, fumes, mists, gases, smokes, sprays or vapors causing occupational diseases. When engineering controls such as confinement of the operation, general and local ventilation or substitution of less toxic materials are not available or practical, appropriate respirators must be used. Employees will be required to notify the company safety officer or his designated official when they suspect that respirators are needed, at which time a determination will be made.

An overview of the company program follows:

A. A written standard operating procedure (SOP) governing the selection and use of respirators shall be established.

B. Respirators will be selected on the basis of hazards to which the worker is exposed.

C. The user shall be instructed and trained in the proper use of respirators and their limitations. Retraining will occur on an annual basis. This individual will be expected to follow the SOP.

D. Where possible, respirators should be assigned to individual workers for their exclusive use.

E. Respirators shall be regularly cleaned and disinfected. Those used by more than one worker shall be thoroughly cleaned and disinfected after each use.

F. Respirators shall be stored in a convenient, clean, and sanitary location.

G. Respirators used routinely shall be inspected during cleaning. Worn or deteriorated parts shall be replaced. Respirators for emergency use, such as self contained breathing devices, shall be thoroughly inspected at least once a month and after each use.

H. Appropriate surveillance of work area conditions and degrees of employee exposure or stress shall be maintained.

I. There shall be regular inspections and evaluations to determine the continued effectiveness of the program.

J. Persons should not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and to use the equipment. A physician shall determine what health and physical conditions are pertinent. The respirator user's medical status should be reviewed annually and kept on file.

K. Approved or accepted respirators shall be used when they are available.

L. No individual will be allowed to wear a respirator without having a medical examination for respirator use, proper training on the use and maintenance of respirators and inspection techniques.

M. The company safety officer or designated official will be responsible for monitoring and maintaining the program.

II. Respirator Selection

A. Respirators are selected and approved by management. The selection is based upon the physical and chemical properties of the air contaminants and the concentration level likely to be encountered by the employee. A respirator issuance and training sheet is to be available for each job where respirators are required. This sheet specifies which respirator is required for each application. The company safety officer or designated individual(s) will make a respirator available immediately to each employee that requires respiratory protection at no cost. Replacement respirators with or without pre filters will be made available as required.

B. Respirators currently approved by this company are chosen according to the guidance of ANSI Z88.2 1969, Standard Practices for Respiratory Protection. Company employees will use the specific canister respirator that they have been trained on. Other brands and equipment will not be allowed.

III. Canister Respirator Identification

A. Air purifying canister respirators are identified primarily by properly worded labels but also by a color code.

B. All air purifying canisters must be properly labeled and colored before they are placed in service. The labels and colors must be maintained until the canisters have completely served their purpose.

C. Each canister will be labeled in bold letters:

1. Canister for (name of contaminant)
2. The label will also bear a statement such as: “For respiratory protection in atmosphere containing not more than (XX) percent by volume of (name of contaminant).”

D. Canisters having a special high efficiency filter for protection against radionuclides (an airborne radioactive particle) and other highly toxic particulates must have a label showing the type and degree of protection given by the filter. This label must be on the neck end of the canister or on the gray stripe near the top. Degree of protection shall be marked as the percentage of penetration of the canister by a 0.3 micro diameter di-octyl phthalate (DOP) smoke at a flow rate of 85 liters per minute.

E. Each canister must have a label warning against use of the air purifying in atmospheres with insufficient oxygen (less than 16% by volume) since air purifying only neutralize or remove contaminants from the air.

F. Each air-purifying canister must be colored according to the following table, using colors that are easily identifiable and clearly distinguishable. The color coating must resist deterioration under normal use and storage conditions. Pressure sensitive tapes may be used for the stripes.

Note: The following table may be used as a guide in selecting the proper canister.

Filtered Contaminants	Canister Color
Acidic Gases	White
Hydrocyanic Acid Gas	White with Bottom Green Stripe
Chlorine Gas	White with Bottom Yellow Stripe
Organic Vapors	Black
Ammonia Gas	Green
Carbon Monoxide	Blue
Acidic Gases and Organic Vapors	Yellow
Hydrocyanic Acid Gas and Chloropicrin Vapors	Yellow with Bottom Stripe
Acidic Gases, Organic Vapors and Ammonia Gas	Brown
Acidic Gases and Ammonia Gas	Green with Bottom Stripe
Radioactive Materials (except Tritium and Noble Gases)	Purple (Magenta)
Dusts, Fumes, Mists and Fogs (combined with any of the above gases or vapors)	Designated Color, Top Gray Stripe
All of the Above Contaminants	Red with Gray Stripe
All Other Canisters	Orange with Protection Label

IV. Employee Training

The superintendent, supervisor, foreman, or group leader relative to their responsibilities in the respiratory program must instruct each employee, upon assignment to an area requiring respirators. The safety officer will train superintendents, supervisors, foremen and group leaders before allowing them to instruct an employee on respirator usage. The respirator issuance and training sheet will be reviewed on a periodic basis with each employee. They will also be instructed in need, use, limitations, and care of their respirator(s). Each employee will be required to have a medical examination to make sure the individual is physically fit to use a respirator. The examination will be confidential, take place during normal working hours, convenient, understandable, and the employee will be given the chance to discuss the results with physician or other licensed health care professional. If the employee is not fit for respirator use he will be reassigned to other duties less hazardous.

Training will include, but is not limited to:

A. Types and description of respirators
B. Intended use and limitations of respirators
C. Fit testing
D. Inspection and maintenance requirements
E. Emergency response procedures
F. Confined space procedures
G. Cleaning and maintenance procedures.
H. Other items affecting respirator usage.

V. Fit Testing Policy

This organization will not conduct fit tests on people with facial hair (except well trimmed mustaches and side burns) while wearing particulate respirators, negative pressure respirators or positive pressure tight fitting respirators. Further, all tight fitting respirators should not be used with beards or other facial hair that prevents direct contact between the face and the edge of the respirator

VI. Employee Fit Testing

All respirator users, supervisors and workers, must be properly instructed in selection, use and maintenance by competent persons, selected by the company safety officer. Training must give persons a chance to handle the respirator, have it fitted properly, test its face piece to face seal, wear it in normal air for a long familiarity period and finally wear it in a test atmosphere. Every employee required to wear a respirator must be fit tested and trained.

Qualitative fit testing is accepted for most hazards in the work place.

In some cases, biological monitoring in the form of blood and/or urinary analysis will be conducted on a periodic basis for all employees as appropriate, based on the chemical exposures encountered. (to be determined by a physician). Employees will be tested for a baseline from which exposure levels can be monitored.

VII. Types of Testing to Consider

A. User fit testing
B. Check fit testing
C. Qualitative testing uses the wearer's senses to determine respirator function.
D. Quantitative testing measures actual quantities of the test contaminant both inside and outside the respirator. These tests will be done only when use of a full face respirator is required.

During the fit test, some items to consider and cover are:

1. Each wearer must be instructed and practice wearing the respirator, be able to adjust it, and determine if it fits properly. Respirators must not be worn if there is not a good face seal because of a growth of beard, sideburns, skull cap projections, temple pieces on glasses, etc. Also, denture wearers may not be able to achieve a good face piece seal. The periodic check must evaluate the worker's diligence in following these instructions. The wearer must check the face piece fit in accordance with the fitting instructions each time he puts it on.
2. Full face respirators are difficult to fit to persons wearing glasses, since the temple bars extend through the sealing edge of a full-face piece preventing a proper seal. Do not permit the wearing of contact lenses with a respirator in contaminated atmospheres. As a temporary measure, glasses with short or no temple bars may be taped to the head. Special types of full-face pieces have mountings for corrective lenses within the face piece, but the face piece and lenses must be fitted by qualified individuals to assure good vision, comfort, and gas tight seal.
3. If corrective spectacles or goggles are required, they must not affect the fit of the face piece. Proper selection of equipment will minimize or avoid the problem.

VIII. Selection Procedure

Employees should select the most comfortable half mask or full-face mask respirator. The employee should wear it for a minimum of 5 minutes to ensure comfort. Some factors to consider in determination of comfort are:

A. Positioning of the mask on the nose (half mask only)
B. Room for eye protection (both types)
C. Room to talk (both types)
D. Positioning mask on face and cheeks (both types)
E. Chin properly placed (both types)
F. Strap tension (both types)
G. Fit across bridge of nose (half mask only)
H. Distance from nose to chin (half mask only)
I. Self observation in mirror (both types)

IX. Fit Check Procedure

J. Move head rapidly from side to side and up and down while taking a few deep breaths to “seat” the respirator.

K. Check for positive pressure inside the mask.

1. Block the exhalation valve located in the chin area of the mask. Placing the heel of the hand over the hole in the exhalation valve cover and pressing lightly while being careful not to dislodge the face piece does this.
2. Exhale gently. If the face piece bulges slightly and no air leaks are detected between the face and face piece, a good fit has been secured.

C. Check for negative pressure inside the mask..

1. The palms of both hands are placed over the holes in the filter or specially attached fit check covers. The employee then gently inhales for 5-10 seconds. If the face piece collapses slightly and no air leakage is detected between the face and face piece, a proper fit has been obtained.
2. If air leakage is detected for either of the two checks, the subject should try repositioning the respirator on the face, readjusting the tension of the headbands, or changing to a different size respirator. When a good fit has been assured, the respirator should not be readjusted or removed until the qualitative or quantitative fit has been performed.

X. Qualitative and Quantitative Fit Testing

A. Qualitative Test Procedures

1. Three test agents are recognized by OSHA for qualitative testing:
   a. Isoamyl Acetate (banana oil)
   b. Saccharin Solution Aerosol
   c. Irritant Fume (or smoke)

These apply for half mask respirators only. Full face respirators are not allowed to be tested by qualitative testing but will require quantitative tests.

Respirators must be equipped with the proper filters either organic vapor cartridges for the banana oil test or a combination of high efficiency andacid gas cartridges for the irritant fume test.

2. The test subject should be familiar with the characteristic odor of the test agent before donning the respirator.
3. The subject should wear the respirator for at least ten minutes before entering a test chamber to begin the fit test. If a test chamber is not available, a room that is isolated from other odors and vapors can be used.
4. For the banana oil test, a small amount is placed on a paper towel or an ampoule cartridge can be used to expose the odor to the subject.
5. For irritant fume procedure, a stream of irritant smoke is directed towards the face seal area of the respirator. The subject should keep his or her eyes closed due to the eye irritation caused by this agent.
6. The subject must perform a series of exercises for 1 minute each while being exposed to the agent.
7. These would include normal and deep breathing, turning the head from side to side and up and down, talking, reading aloud and jogging in place. If at any time during the test the subject detects the banana like odor of IAA or the irritant smoke, the test has failed. In this case, the test respirator is rejected and the subject should return to the selection for another fitting.
8. At least 2 face pieces should be available for this process. The subject should be given the opportunity to wear them for 1 week to choose the one that is more comfortable to wear.
9. The persons who have successfully passed the qualitative fit test with a half mask respirator may be assigned the use of the test respirator in atmospheres with up to 10 times the PEL of the hazard from which the worker is to be protected.
10. Qualitative testing is to be repeated at least every six months. If the worker incurs a change of any of the following, he/she needs to be retested.
    a. A weight change of 20 pounds or more,
    b. Significant facial scarring in the area of the face piece seal
    c. Significant dental changes
    d. Reconstructive or cosmetic surgery or
    e. Any other condition that may interfere with the face piece sealing.

B. Quantitative test procedures:

This type of testing is more sophisticated in that it requires specialized instrumentation that samples the test atmosphere and the air inside the respirator inlet covering of the respirator. This test measures the penetration of the test agent found in the test respirator. Due to the sophistication of this test, the company will utilize an outside service agent to provide the equipment and perform these tests when found necessary.

XI. Respirator Inspection and Maintenance Procedures

The following points should be considered for respirator inspection and maintenance:

A. The wearer of a respirator will inspect it before each daily use.

B. Employees must leave the respirator use area to wash and change cartridges or if they detect breakthrough or resistance.

C. A supervisor, foreman, or group leader will periodically spot check respirators for fit, usage, and condition.

D. Respirators not discarded after one shift use, will be cleaned and disinfected on a daily basis using IPA or an IPA wipe, according to the manufacturer's instructions, by the assigned employee or other person designated by the company safety officer or designated individuals.

E. Respirators not discarded after one shift use, will be stored in a suitable container away from areas of contamination.

F. Whenever feasible, respirators not discarded after one shift use, will be marked or stored in such a manner to assure that they are worn only by the assigned employee. If use by more than one employee is required, the respirator will be totally cleaned between uses.

G. Each area or job site requiring the regular use of respirators will maintain a log book. Employees not discarding respirators after one shift should sign this log book daily in order to document the inspection and maintenance of their respirators. This log will be maintained by the supervising foreman unless otherwise designated.

H. After task completion, if the respirator is not to be used for the next 10 days, the designated foreman will send the respirator back to the main office inventory for inspection, disinfection and packaging. The filter canisters will be discarded at that time.

I. The user will date canister filters as soon as the seal is broken. After 30 days of the marked date or when the filter is dirty, the filter canisters will be discarded. New filters will be provided whenever a respirator is placed into service, from the main office inventory.

XII. Emergency Respiratory Equipment

A self contained breathing apparatus (SCBA) may be required in specific areas for emergency use. Only trained personnel will use this equipment when it is necessary to enter hazardous atmospheres. If a job site does not have trained personnel in the use of SCBA, our employees will rely on the emergency response team (ERT) or other emergency agencies, such as fire department personnel, to respond.

The following points should be considered if company personnel are to use SCBA equipment.

A. All potential users will be fully trained in the use of this equipment.

B. When the equipment is used, it will be tested in an uncontaminated atmosphere prior to entering the hazardous area if possible.

C. An employee will not work with this apparatus in a hazardous atmosphere on an individual basis. At least one additional employee suitably equipped with a similar breathing apparatus must be in contact with the first employee and must be available to render assistance if necessary.

D. This equipment will be inspected monthly by trained department or group personnel as determined by the safety officer. Inspection and maintenance information will be recorded in a logbook.

E. The checklist below will be utilized to inspect this equipment

1. Inspect self contained breathing apparatus monthly. Keep air and oxygen cylinders fully charged, according to the manufacturer's instructions. See that regulator and warning devices are working properly. Only grade D breathing air will be used in supplied air packs. If an air compressor is utilized, the equipment will have alarms to monitor compressor overheating and carbon monoxide.

2. Check the tightness of connections and the condition of the face piece, headbands, valves, connecting tube, and canisters. Inspect rubber or elastomeric parts for liability and signs of deterioration. (Stretching and massaging such parts keeps them flexible and prevents their becoming “set” during storage.)
3. Keep dated records of emergency respirator inspections and findings
4. After inspection, cleaning and repairs, protect respirators against dust, sunlight, heat, extreme cold, excessive moisture or damaging chemicals. Those located for emergency use at work areas must be quickly accessible and stored in clearly marked compartments made for that purpose. Routinely used respirators may be placed in plastic bags. Do not store respirators in lockers or toolboxes unless they are in carrying cases or cartons. Pack or store respirators so the face piece and exhalation valve rest in normal position to prevent warping. For emergency respirators, follow the storage instructions generally found inside the carrying case lid.

F. Only designated experienced persons, using parts designed for the respirator, shall make replacements or repairs. Only those repairs, adjustments or replacements allowed by the manufacturer’s recommendations must be made. Return any reducing or admission valves or regulators to the manufacturer or a trained technician for adjustment or repair.

XIII. Special Requirements In Specific Applications

A. Welding and Cutting Operations:

1. In confined spaces: When sufficient ventilation cannot be obtained without blocking the means of access, employees must use air-line respirators and a helper must be assigned to maintain communications and help in emergencies.
2. Welding, cutting or heating metals of toxic significance: In enclosed spaces ventilation or air line respirators must be used to keep concentrations of lead, cadmium, mercury and beryllium within safe limits. In open spaces filter type respirators must be used except for work with beryllium containing base or filler metals, then air-line respirators must be used. All employees exposed to the hazardous atmosphere must have the same protection as the welder or burner.
3. Toxic Preservative Coatings: In enclosed spaces, strip these coatings at least 4 inches from heat application, or use approved air line respirators. In open air, use suitable approved respirator. OSHA Instruction (issued 10 6 76) STD 3 8.1
4. When welding, cutting, or heating is done in an enclosed space on metal coated with lead bearing paint, the combined requirements of (1926.353 c.2.1.) and (1926.354c.1) apply so that:
    a. The toxic preservative coating must always be stripped back at least 4 inches from the area of heat application.
    b. If air contamination exceeds permissible levels, local exhaust ventilation must be provided.
    c. If the contaminant concentration is still too high, employees must have air line respirators, but the paint stripping and ventilation must be continued also.
    d. Whether or not the paint is stripped back far enough will be determined by marking the edge of the stripped surface with a temperature indicating crayon having a 500-degree melting point.

B. Confined Space Operations:

1. A qualified person supervising the respiratory protection program must specify the correct respirator for each job; usually in the work procedures. The person issuing a respirator must be adequately instructed to issue the correct type. The company safety officer will designate all qualified persons.
2. Written procedures for the safe use of respirators in dangerous atmospheres that might be encountered in normal operations or in emergencies will be created on a job by job basis. Personnel must be familiar with these procedures and the available respirators.
    a. In areas where the wearer could be overcome by toxic or oxygen deficient atmosphere if the respirator fails, one additional person must be present to maintain visual, voice, or signal line communications. Between all those present; station one person where he will be unaffected by any likely incident and have rescue equipment available to assist the others.
    b. When using a self contained breathing apparatus in atmospheres immediately dangerous to life or health, have a standby person with rescue equipment available.
    c. If air line respirators are used in atmospheres immediately dangerous to life or health, the wearer must have a safety harness and safety lines for emergency removal or equivalent provisions must be made for the wearer's rescue. At least one standby person with self contained breathing apparatus must be stationed at the nearest fresh air base for emergency rescue.
3. To assure that the respirators are properly selected, used, cleaned and maintained, an assigned qualified individual must make frequent random inspections.
4. Refer to the ***Confined Space Entry Section 15-5*** for further requirements.

XIV. Record Keeping Procedures

The company safety coordinator or designated individual will maintain records in the main office. Records will contain:

A. An inventory of respirators by type and number in stock

B. A record of each employee trained for respirator usage

C. Inspection and maintenance reports

D. A medical certification listing those employees capable of wearing a respirator for specific work conditions (personnel files will have the original medical records for each employee tested).

Note: BHB does not work in environments that are immediately dangerous to life or health (IDLH).

Housekeeping and General Safety Requirements

I. General

The following guidelines have been developed to reduce job site hazards and to minimize accidents, injuries and property damage. Site cleanliness and good housekeeping is one of the key elements in maintaining a productive and safe project. Employee conduct and work practices are equally important factors. The following shall apply to all BHB employees and personnel on the project:

A. It is the responsibility of each employee to keep their areas of the site free of trash and debris. Clean up should be conducted on a daily basis and debris stockpile areas or disposal containers should be provided and located to meet specific project requirements.

B. Certain areas of the project will be designated for eating and smoking and will require regular clean up.

C. All roadways, emergency lanes, building entrances and exits should be clearly marked and maintained clean and free of obstruction.

D. To minimize noise levels, distraction and disruption to emergency communications, radios are prohibited on the job site.

E. Barriers or covers should be replace at the completion of each shift or when leaving the work area.

F. Horseplay, fighting, gambling or malicious mischief will not be tolerated and shall be cause for immediate dismissal.

G. The usage of any and all tobacco products is prohibited on the job site and in the office.

II. Waste Management

A. Prior to work being performed BHB will consider and estimate the amount of waste, trash and/or other scrap materials that could be generated so that the proper containers are present for waste removal before the job begins.

B. All employees will be trained on the proper disposal methods for non-hazardous/hazardous wastes, trash, scrap materials and any other types of waste they may encounter specific to each job.

C. Containers will be provided for the collection and separation of waste, trash, oily and used rags, and other refuse. Containers used for garbage and other oily, flammable, or hazardous wastes, such as caustics, acids, harmful dusts, etc. shall be equipped with covers. Garbage and other waste shall be disposed of at frequent and regular intervals.

D. Any receptacle used for solid or liquid waste or refuse will be constructed so that it does not leak and may be thoroughly cleaned and maintained in a sanitary condition. Such a receptacle shall be equipped with a solid tight-fitting cover. All waste materials will be properly handled and disposed of to minimize their potential impact on the environment.

E. Combustible scrap and debris shall be removed at regular intervals during the course of construction. Safe means shall be provided to facilitate such removal.

F. The separation of recyclable materials is encouraged when circumstances allow.

Sanitation, Drinking Water and Illumination

I. Sanitation

A. An adequate number of portable toilet facilities should be provided throughout the project, in accordance with OSHA requirements.

1. Less than 20 employees = 1 toilet
2. 20 or more employees = 1 toilet and 1 urinal per 40 workers
3. 200 or more employees = 1 toilet and 1 urinal per 50 workers

B. Proper hand washing facilities must be provided for all employees who work with paints, coatings, concrete and other materials that may harm the skin. All roadways, emergency lanes, building entrances and exits should be clearly marked and maintained clean and free of obstruction.

II. Drinking Water

A. An adequate amount of potable drinking water must be provided for all BHB personnel. Drinking water containers shall be clearly marked. Single service paper cups shall also be provided by each drinking container, which shall be kept in a sanitary dispenser. A trash bucket should be provided near each drinking water container. The use of a single common drinking cup shall be prohibited at all times.

B. Non-potable water (not suited for consumption) shall be clearly identified.

II. Illumination

A. All areas, aisles, stairs, ramps, runways, corridors, offices, shops, and storage areas where work is in progress shall be lighted with either natural or artificial illumination.

B. The minimum illumination requirement for general construction areas is 5 foot-candles and 10 foot-candles for mechanical rooms or shops.

Confined Space Entry Program

I. Definition

By definition, a confined space is any space where a worker has limited or restricted entry or exit; is large enough to enter and perform their work duties; could have a toxic or hazardous atmosphere; may have limited or no oxygen supply; and is not normally occupied or inhabited. Examples are: tanks, vessels, vaults, man-ways, tunnels, open pits, excavations, pipelines, bins, silos, boilers and similar structures. In order to prevent possible injury or death, a permit system will be required when above conditions occur.

II. Permit System

This permit system will require all individuals participating in the entry of a confined space to be thoroughly trained in all facets of this program. Components of the permit system include:

A. Identifying the confined space: Based on the actual definition of a confined space, a determination will be made to be sure that in fact the work area is a confined space. This determination will be by the company safety officer or designated individual with the assistance of the supervisor and/or competent person involved.

B. Identify the actual or potential hazards: A determination of the actual or potential hazards associated with the entry and work process will be conducted. Based on the specific hazards, equipment determined to be necessary will be acquired and assembled for use. The supervisor will work with the company safety officer or designated individual to evaluate the hazards.

C. Personal protective equipment requirements: Personal protective equipment will be utilized depending on the types of hazards found. They will be stored in the job site trailer office or the job site tool shed.

D. Development of a pre-entry plan of emergency procedures: A pre-entry plan will be developed by the competent person(s) concerning the emergency procedures should an accident occur. This plan should include the emergency rescue procedures that include the rescue equipment needed, the standby persons' duties, and who will be contacted in the event of an incident.

E. Emergency rescue evacuation procedures: In the event that an emergency rescue evacuation is required, the participating personnel will be trained on the procedures developed in the preplan. If the preplan requires SCBA/respiratory protection, those involved individuals will be trained on any SCBA/respiratory requirements. All confined spaces will require that the confined space entry crew will have a trained first aid/CPR member on the team as a bare minimum. Preferably, the standby attendant and the supervisor should be designated to be those trained in first aid/CPR.

F. Identification of players in confined space process: A list of the individuals involved in the process will be created in the permit system. Each will have specific duties defined in the entry. Procedures will be developed and implemented when employees from multiple employers will need to be working simultaneously as authorized entrants in a permit space so that employees of one employer do not endanger the employees of another employer.

G. Define role of competent person(s) overseer: The role of the competent person(s) involved will be specific in each entry. Normally, there will be at least two competent persons involved; the actual entry person and the crew supervisor.

H. Define role of attendant standby person(s): This individual will be responsible for monitoring the atmosphere, continuous verbal and visual contact of the entry personnel and will notify the appropriate personnel for help in the event of a rescue. Radios and telephones will be utilized for notifying the appropriate personnel.

I. Calibration of monitoring test equipment: All test equipment will be calibrated and tested before any confined space entry is performed. A competent person designated to do this type of work will do this calibration and testing or the manufacturer's representative will do the testing. Employees or their representatives are entitled to request additional monitoring at anytime

J. Verifying that all players have been trained on program process: The supervisor in charge of the entry will verify that all players have the necessary training required via company records, etc.

K. Review Program: The permit space program will be reviewed within 1 year after each entry and the program will be revised as necessary to ensure that employees participating in entry operations are protected from permit space hazards.

III. Training

A competent person who understands the requirements for confined space entry will do all training. Records of all training will be kept at the main office. This person may be the company safety coordinator or a designated individual. Training will be provided to each affected employee before the employee is first assigned duties, before there is a change in assigned duties, whenever there is a change in permit space operations that presents a hazard about which an employee has not previously been trained or if we have reason to believe there are deviations from the permit space entry procedures/inadequacies in the employee's knowledge or use of these procedures. Training will include identifying the confined space based on the actual definition of a confined space, a determination will be made to be sure that in fact the work area is a confined space. This determination will be made by the company safety coordinator or designated individual with the assistance of the supervisor and/or competent person involved.

A. Frequency of training to be annually and periodically updated of materials as necessary.

B. SCBA/respiratory training using hands on techniques where required.

C. Rescue procedures based on worst-case scenarios.

D. Testing and calibration of testing equipment using hands on techniques to include the following:
   1. Noise monitoring
   2. Atmospheric conditions for toxic or flammable gases or vapors
   3. Radiation such as X ray exposure
   4. Oxygen deficiency levels which should not drop below 19.5% or rise above 23%
   5. Heat and cold exposures

E. Permit Procedures: An entry permit will be issued for each confined space that will certify and record the event. It will provide the workers with a checklist to ensure that all existing hazards are considered, evaluated and that all corrective measures required will be taken. The supervisor will review and complete the authorization with the competent person designated. Once these individuals have ensured that a safe working environment is made, they will sign off authorization to proceed. Each permit will have a maximum 24 hour time duration allowed on the entry. The competent person can renew it if necessary. No other authorization shall be valid except for the job, location, persons and time specified. When the work has been completed the permit will be sent into the main office for record keeping.

IV. Lockout/Tagout of Systems

The competent person will evaluate all systems involved in the entry to ensure that all forms of energy have been locked out or tagged out. If necessary the supervisor should help with the evaluation. Refer to ***Lockout/Tagout Section 15-11 of this Safety and Health Manual***. Frequency of training is to be annually and periodically updated of materials as necessary.

V. Illumination and Tools

Hand tools shall be in good working order and selected carefully according to their use and the hazards that they might create. Ladders will be tied off at the top and bottom if possible. Electric tools and equipment will be operated at 12 volts or will be pneumatic power tools. If portable electric tools must be utilized, an assured equipment grounding conductor program will be in place or ground fault circuit interrupters will be instituted. All temporary lights will be equipped with guards over the bulbs and operated at a maximum of 12 volts.

Employees performing electrical welding or gas cutting in confined spaces shall be required to use PPE as required. Welding and cutting torches must not be taken into the confined space until ready for use and must be removed from the space immediately after use. Cylinders of oxygen or other gas shall never be taken into the space, and shall be turned off at the cylinder valve when not in use. Fire extinguishers shall be at the location of welding, cutting and at the attendant's station.

VI. Personal Protective Equipment (PPE)

The competent person will define the required PPE based on the entry requirements. If respirators are required, the company safety officer or designated individual will be notified prior to the entry permit authorization. No entry can be performed until this notification is completed.

VII. Instrumentation

Based on the evaluation done on the space, the required equipment required to monitor the space will be assembled. In all cases the atmosphere in the space will be monitored for oxygen and flammable gases on a continuing basis. All workers involved will be trained in the use of this equipment before entry.

VIII. Signs and Barricades

The appropriate signs will be posted just prior to beginning the entry process. A barricade tape will be used along with signs in areas where foot traffic exists. This barricade will be a minimum of 10 feet from the space. If the space includes open pits or operations requiring fall protection, the standard wooden 42 inch high barricade will be erected along with toe boards. If night operations or dimly lit areas exist, flashing lights will be incorporated.

IX. Standby Attendant

While personnel are inside the confined space, a trained, qualified person will be observing the operation from the outside of the space. One attendant per confined space is required. This standby attendant shall have available entry safety equipment and be aware of the conditions of personnel within the confined space at all times. The standby attendant may pass tools, but must have no other job which will take his attention away from the people in the space and/or which will interfere with his attempts to withdraw a victim(s) by use of life line, or which will require his leaving the vicinity of the confined space for any amount of time. Only an absolute minimum work force will be allowed in the space at any time based on the work itself. The observer will always keep the workers in his vision and if not possible, a clearly understood signal system shall be established prior to the start of the operation either by radio or line jerk method.

One pull	allow additional slack in the line.
Two pulls	lead line is inadequate
Three pulls	emergency, pull individual from the space

Where potential exposure in the space is acute or requires an employee to wear respiratory protection or where rescue may be difficult, the employee shall be provided with a body harness or wristlets with lifeline attached. Such safety harness, wristlets or safety coveralls with a built in harness and life line shall be used when the shape, size and location of the confined space permits the safety emergency removal of personnel by standby personnel without requiring entry into the confined space. One additional safety line will be available for each person within the space. If an entry person fouls his lifeline on the structure to such an extent that clearing of the line would force a rescue or be time consuming and dangerous, the primary life line will be unsnapped. The secondary lifeline will then be securely snapped for retrieval. When shape, size and location of the confined space does not meet this requirement, a specific procedure for the rescue of personnel shall be developed in the preplanning stage of the confined space entry work and made a specific part of the confined space entry permit. In some cases, it is advisable to have a block and tackle positioned on a tripod or otherwise fastened above the manhole. For obvious reasons, manholes large enough to accommodate the man and his safety gear shall be provided, such as a 32 inch diameter for circular ones. Where existing manholes are smaller than 20 inch in the largest dimension, the free end of the lifeline shall be secured to a fixed object and shall be attended by the standby attendant. In the case of an emergency, the standby attendant must never enter the confined space until he/she is relieved at this post. It is his job to summon aid immediately; attempt to remove the victim by use of the life line; and to perform all other necessary rescue functions from outside. Upon arrival of help, he/she may enter the confined space for rescue work only when he/she is assured that adequate outside assistance is present. The standby attendant shall be well trained in basic first aid principles and CPR. Rescuers entering the confined space must be protected with the safety facilities required by the situation, i.e., life line and harness, and proper PPE. For rescue purposes at least one unit of self contained breathing equipment or equivalent air line equipment shall be located outside and convenient to the confined space together with harness, rope and such other emergency equipment as may be indicated. The company safety officer, supervisor and competent person shall make the decision as to what equipment is necessary.

Confined Space Classification Table

Parameters	Class A	Class B	Class C
Characteristics	Immediately dangerous to life---rescue procedures require the entry of more than one individual fully equipped with life support equipment--- maintenance of communication requires an additional standby person stationed within the confined space	Dangerous but not immediately life threatening--- rescue procedures require the entry of no more than one individual fully equipped with life support equipment--- indirect visual or auditory communication with workers	Potential hazard requires no modification of work procedures---standard rescue procedures---direct communication with workers from outside the confined space
Oxygen levels	Below 16% *(below 122 mm Hg) or above 25% *(above 190 mm Hg)	16.1% to 19.4% *(122-147 mm Hg) or 21.5% to 25% *(163-190 mm Hg)	19.5% - 21.4% *(148-163 mm Hg)
Flammability levels	20% or greater of LFL	10%-19% LFL	10% LFL or less
Toxicity levels	**IDLH	Greater than contamination level referenced in 29 CFR Part1910 Sub Part Z less than **IDLH	Less than contamination level referenced in 29 CFR Part 1910 Sub Part Z

*Based upon a total atmospheric pressure of 760 mm Hg (sea level)
**Immediately Dangerous to Life or Health

Underground Tunnel Operations

I. General

If workers will be required to enter underground tunnels to perform work, they will have to be trained for confined space entry procedures. If workers are to be involved with the actual construction of an underground tunnel, they will require formal training prior to performing such work. This is such a specialized area of work that only those who do this as their chosen profession shall perform it.

The particular details of the performance of this kind of work will not be covered in this procedure. Only the items that other workers need to know shall be covered by this instruction.

II. Entrance

A. Erect a locked fence around the entrances, and post a “no trespassing” sign to warn members of the public to stay out. Make certain that two people possess a key, and keep a watch posted at the gate while workers are inside the tunnel.

B. Post a warning sign next to the entrance. This sign should inform all entrants of the personal protective equipment that they will need for safe entry.

C. Maintain a back-up generator to provide power for lighting inside the tunnel. Ensure that all workers possess a flashlight that is powered by good batteries.

D. Keep all combustion engines away from entrances.

III. Operations

A. Check atmosphere for adequate oxygen level. Add mechanical equipment to provide additional ventilation as needed.

B. Make sure workers stay in contact with other workers.

C. Verify that all workers know details of rescue plans and that rescue teams are available.

D. Make sure professional emergency services are available. Be aware of response time for fire and rescue calls.

E. If any suspicious structural conditions appear, consult with a registered professional civil engineer.

Barricades, Hole Covers, Signs and Signals

ANYONE WHO CREATES A HOLE OR OPENING IS RESPONSIBLE FOR HAVING IT PROPERLY BARRICADED OR COVERED.

I. Barricades

A. Use of barricades is required around most excavations, holes or openings in floor or roof areas, edges of roofs and elevated platforms, around certain types of overhead work, and wherever necessary to warn people against falling in, through, or off.

Floor Hole - An opening measuring less than 12 inches but more than 1 inch in it's least dimension, in any floor, platform, pavement, or yard, through which materials but not persons may fall; such as a belt hole, pipe opening or slot opening.

Floor Opening – An opening measuring 12 inches or more in its least dimension, in any floor, platform, pavement, or yard, through which a person may fall; such as a hatchway, stair or ladder opening, pit or large manhole

Wall Hole – An opening at least 30 inches high and 18 inches wide, in any wall or partition, through which persons may fall; such as a yard-arm doorway or chute opening.

B. Erection of barricades
1. Must be 42 inches high, square, and level.
2. Keep 6 feet back from edge of excavations, holes platforms and roofs unless a protective barricade is used (see below).
3. Erect before the hole is cut and extend as the excavation progresses.
4. Numerous excavations in one area may be barricaded effectively by erecting a barricade around the general area.
5. Blinking lights must be used on roadblocks after dark.
6. Leave an entrance, opening or gate where practical.
7. Must be constantly maintained erect and square.

C. Types
1. Warning - these call your attention to a hazard but offer no physical protection. Example: yellow synthetic tape strung along posts or lathe.*
2. Protective - these warn as well as provide physical protection from falling. Example: wood post and rail, cable and wood post chain. These form a rigid standard 42 inch high top rail and 21 inch high mid-rail.

II. Hole Covers

A. Use of hole covers - All holes or openings through floors or decking at all elevations must be provided with hole covers or barricades immediately. Do not store or even set temporarily, material or equipment on a hole cover.

B. Placement of hole covers

1. Must have a sign reading: "WARNING TEMPORARY HOLE COVER. DO NOT REMOVE UNLESS AUTHORIZED." or be otherwise identified.

2. Must be cleated, wired or otherwise secured so it cannot slip sideways or horizontally beyond the hole.

3. Must extend adequately beyond edge of hole.

C. Material - When foot traffic is the only load expected on the cover, three quarter inch plywood may be used, provided one dimension of the opening is less than 18 inches; otherwise, 2 inch lumber or double 3/4 inch plywood is required. When equipment loads are expected, one inch steel plate or even greater may be required to furnish the necessary strength of material (four times the heaviest possible load).

III. Signs and Signals

A. Visibility - All warning signs and lighted signals must be placed where they can be seen and easily read. Colors are important. Red backgrounds are intended to relay high danger messages. Yellow backgrounds are to warn people that exposure to the hazard is possible if entry into the area is necessary. Green backgrounds indicate that maximum safety for the area has been created and only normal precautions are necessary. Blue letters on white backgrounds are intended to inform people of the safety requirements for that area. Letters must be large enough to be legible from a safe distance.

B. Warning Tape - Surround high hazard areas with red tape to inform everyone, except the work crew to stay out of that area. Surround medium hazard areas with yellow tape to inform others who must pass through the area that they should identify the hazard and take necessary precautions before entering. Tape that is yellow with lavender (magenta) stripes is placed around areas where x-ray equipment is being used. The tape is to be placed outside the exposure limits to keep others from wandering into areas where they might receive a measurable dose of radiation. Where warning tape is used to identify a fall exposure hazard (edge of a trench or opening in a floor), the tape must be placed at least 6 feet back from the edge of the hazard.

C. Traffic Control Paddles - Paddles shall be octagonal in shape. One side shall be red with the word “Stop” printed on it, and the other side shall be yellow with the word “Slow” printed on it. Traffic control workers are to place themselves where they can easily be seen, but they should not be required to stand in any roadway. They should be placed far enough in front of the work zone to allow traffic to come to a safe stop before entering the zone. Where one open traffic lane will have to allow two directions of travel, traffic control workers shall be provided with radios to coordinate the alternate stopping of each line of vehicles.

Excavation and Trench Protection

I. General

For the purposes of definition all trenches will be considered as excavations (but the reverse is not always true for all OSHA standards). On any project where excavations are planned, an engineered excavation protection plan may be on file at the job site and followed for all excavations. Exceptions will be where the excavation can follow the OSHA guidelines under regulation 29 CFR 1926.650 through 653 or tabulated data from tables or charts approved by a professional engineer.

II. Underground Utilities

Underground installations such as sewer, water, telephone, gas, fuel and electrical utilities will be located prior to any excavation work. Use the One Call to Dig system. When utility companies fail to respond within 48 hours to a request to locate underground utility installations or cannot establish the exact location of these installations, the excavation can proceed with caution. These installations will be protected, supported or removed as necessary to safeguard all employees.

III. Access to Excavations

Access will be provided to all excavations 4 feet or deeper through the use of ramps, ladders or stairs. Ladders will be placed such that employees will not have to laterally travel more than 25 feet to the nearest ladder.

IV. Vehicle Traffic

All employees exposed to vehicle traffic will be required to wear warning vests that are of high visibility material.

V. Equipment Hazards

No employee will be permitted underneath loads handled by lifting or digging equipment. When mobile equipment is operated adjacent to an excavation or when such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, a warning system will be utilized. Barricades, hand or mechanical signals, or stop logs may be used for this purpose.

VI. Hazardous Atmospheres

Where hazardous substances are stored nearby or landfill areas exist, the atmosphere in the excavation shall be tested before employees enter excavations greater than 4 feet. Adequate precaution shall be taken to provide ventilation to prevent exposure in atmospheres of less than 19.5% oxygen or other hazardous substances and atmospheres having in excess of 10% of the lower explosive limit of the gas. Testing shall be conducted as often as necessary to ensure that the atmosphere remains safe.

Emergency equipment will be on standby where hazardous atmospheric conditions exist. Examples are breathing apparatus, safety harness and basket stretcher plus atmospheric monitoring equipment. All confined space entries will follow the company ***Confined Space Entry Program in Section 15-5*** of this safety manual.

VII. Water Accumulation

No employee will be allowed to work where accumulated water exists unless adequate precautions have been taken to protect employees against the hazards posed by water accumulated, i.e., support or shield systems to protect from cave-ins, water removal to control incoming water or use of a safety harness and lifeline. Water removing equipment will be monitored by the competent person to ensure proper operation. Excavations subject to water runoff from heavy rains will require inspection by the competent person after each rain.

VIII. Stability of Adjacent Structures

Adjoining buildings, walls or other structures where the excavation operation endangers personnel and equipment, support systems will be incorporated. Shoring, bracing or underpinning shall be provided to stabilize the structures.

Excavation below the level of the base or footing of any foundation or retaining wall shall not be permitted unless:

A. A support system is provided for stability and protection of employees or excavation is in stable rock.

B. A registered professional engineer has approved the determination that such excavation work will pose a hazard

C. A registered professional engineer has determined that the structure is sufficiently removed from excavation so as to be unaffected by the excavation activity.

Sidewalks, pavements and any other structure shall not be undermined unless a support system or method of protection is provided to protect it from collapse. All surface encumbrances are to be supported or removed to eliminate any potential hazard.

IX. Loose Soil or Rock

Adequate protection will be provided to retain any loose rock or soil which could fall on an employee. Soil from the excavation will be stored 3 foot minimum from the edge of the excavation, or a retaining system will be erected to contain the soil.

X. Inspections

The competent person will make daily inspections of excavations, the adjacent areas, and protective systems for evidence of possible cave-ins, indications of failure of protective systems, hazardous atmospheres or other hazardous conditions. Inspections will be done before work begins each shift, after any storm or other hazard-increasing occurrence. Where evidence of a situation exists where a cave-in, failure of equipment, or hazardous atmosphere may occur, the necessary precautions will be taken.

XI. Fall Protection

Where employees or equipment are required or permitted to cross over excavations, walkways or bridges with standard guardrails will be erected. Adequate physical barrier protection will be provided at all remotely located excavations. All operations when completed will be backfilled as soon as possible.

XII. Employee Protection Systems

Employees will be protected from cave-ins by one of the following conditions:

A. The excavation is in stable rock.

B. Excavations that are less than 4 feet in depth and an examination of the ground by the competent person identifies no potential cave-in.

C. A protective system is designed to support the anticipated load capacities without failure.

D. Benching or sloping of the ground is incorporated for the various types of soil based on the configurations shown at the end of this section and limited to a 20 foot depth maximum. Those soil types will be determined to be Type A, B, or C as listed in the OSHA standard.

E. Other benching, sloping or support systems may be utilized if a registered professional engineer designs them.

F. All excavations that are over 20 feet in depth, will be required to be designed by a registered professional engineer.

G. Manufactured support systems, or shield systems can be used if they are designed and built to the manufacturer's specifications and the equipment is not modified in any way.

H. All protective systems will be erected such that employees will be protected at all times. Removal of shoring equipment shall be from the bottom up and the inverse for installation. Backfilling will progress as the support systems are removed.

XIII. Soil Classification

A. Type A Soil - A cohesive soil with an unconfined compressive strength of 1.5 ton per square foot (tsf) or greater. Examples 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 hard pan are also considered Type A. However, no soil is Type A if:

1. The soil is fissured
2. The soil is subject to vibration from heavy equipment, pile driving or similar effects
3. The soil have been previously disturbed
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
5. The material is subject to other factors that would require it to be classified as a less stable material

B. Type B Soil - A cohesive soil with an unconfined compressive strength greater than 0.5 tsf but less than 1.5 tsf. Examples are granular cohesion-less solid including angular gravel, silt, silty loam, sandy loam and, in some cases, silty clay loam and sandy clay loam. Previously disturbed soils except those that would otherwise be classed as Type C soil. Soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration. 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.

C. Type C Soil - A cohesive soil with an unconfined compressive strength of 0.5 tsf or less; Examples are granular soils including gravel, sand, and loamy sand. Submerged soil or soil from which water is freely seeping. Submerged rock that is not stable; or material in a sloped, layered system where the layers dip into the excavation or a slope of four horizontal to one vertical (4H: 1V) or steeper.

XIV. Required Visual and Manual Testing of Soil Types

A. Visual observations are required to determine if the soil is cohesive, or granular. Observed tension cracks can indicate that the material may be fissured. Evidence of surface water seeping in may require additional consideration on type of soil and the type of protection system to be used.

B. Manual tests must be conducted to determine the plasticity of the soil. For example if a soil can be rolled into a ball then rolled in to a 1/8 inch diameter thread by 2 inch long is can be considered cohesive. Dry strength should be considered in the manual test. If the soil is crumbly on its own or with moderate pressure, it is granular soil. If the clumps of soil must be broken with difficulty, then it may be considered unfissured and stable.

C. Thumb tests can be used to estimate the unconfined compressive strength of cohesive soils. If the thumb with very great effort can indent the soil, it can be considered a Type A soil. In Type C soil, the thumb test will allow the thumb to penetrate the sample completely. Type B soil will fall in between these two types.

D. Other types of tests may include using a pocket penetrometer or a hand-operated shear vane that will measure the compressive strength of the soil.

XV. Slope Configurations and Shoring Tables

Follow the charts in the OSHA Standards for Construction Safety for the recommended slopes and shoring systems corresponding to each soil type. If an application does not fit any of these applications, then a registered professional engineer will need to be contacted for an excavation design.

Steel Erection

I. General

A direct reference is made to 29 CFR Part 1926, Subpart R (Steel Erection Standard).

Specific reference to the fall protection requirements in Subpart R is made and the following changes are made specific to BHB projects: Fall protection will be required at 6 feet on all BHB projects beginning on or after June 01, 2006

Quick reference to requirements of controlling contractor and its duties listed in Subpart R:

The following excerpt from an OSHA letter of interpretation dated January 30, 2002 is included for quick reference by BHB employees to ensure compliance with the specific duties placed on the controlling contractor:

> Controlling contractor: “a prime contractor, general contractor, construction manager or any other legal entity, which has the overall responsibility for the construction of the project - its planning, quality and completion.”
>
> Subpart R contains several specific duties that have been placed on the controlling contractor. They include:
>
> 1) ensuring that the steel erector is provided written notification that the footings, piers and walls have sufficient strength to support the loads imposed during the steel erection process [§1926.752(a)];
>
> 2) ensuring that adequate access roads and storage spaces are provided and maintained for the safe delivery, storage and movement of equipment and pedestrians [§1926.752(c)];
>
> 3) providing written notification to the steel erector of any repair, replacement or modification of the anchor bolts prior to erection of a column [§1926.755(b)(2)];
>
> 4) barring other construction processes below steel erection unless sufficient protection is provided for employees below [§1926.759(b)];
>
> 5) choosing either to accept control and responsibility of certain fall protection measures or having them removed [§1926.760(e)];
>
> The standard placed these duties on the controlling contractor because, as the contractor with general supervisory authority over the work site, it is in the best position to comply with them. None of these provisions require the controlling contractor to direct the individual employees of a subcontractor or supplier.

Low Voltage Electrical Safety

I. General

OSHA requires than an employer must choose one of the following options for work place safety from electrical injury in addition to all other requirements for equipment grounding and other regulations:

A. Ground Fault Circuit Interrupters (GFCI's) This is the option chosen and implemented by BENCHMARK HOUSTON BUILDERS, L.P.

B. Assured Equipment Grounding Conductor Program (AEGCP)

BHB does not use an (AEGCP); GFCI protection is required at all times

II. Ground Fault Circuit Interrupters

A. Ground Fault Circuit Interrupters are intended to quickly interrupt the circuit in the event of a ground fault, to prevent electrocution. They operate independently of the equipment grounding circuit. Moisture in the air may contribute to the electrical fault and may also increase the severity of the shock by decreasing the worker's contract resistance. A GFCI continually monitors the current and detects current leaking to ground via a path outside of the circuit conductors. If the leakage current to ground (either through the equipment grounding conductor or through a person) exceeds the trip level, the circuit is interrupted quickly enough to prevent electrocution.

B. An electrocution occurs when the shock current is in excess of about 70 milliamperes causing ventricular fibrillation (heart stoppage) and death. A GFCI will break the circuit when a leakage of 5 MA or more is occurring, usually within 1/40 of a second.

C. These GFCI requirements pertain only to the use of temporary wiring on construction sites. They do not apply to the permanent wiring of the building or structure, except when such wiring is in kitchens and other wet areas.

D. Because 0.1 amp of electricity flowing through the human body for 2 seconds can cause death, any active electrical receptacle can pose a potentially lethal hazard.

E. Electrical hazards in areas exposed to weather are of particular concern because of the use of electrical tools and equipment and the frequency of wet or damp floors. Electrical safeguards and safe work practices can eliminate most of these hazards. NIOSH recommends that:

The employer must provide approved GFCI's on all 120 volt, single phase, 15 and 20 ampere receptacle outlets that are in use by employees and that are not a part of the permanent wiring of the building or structure. (See OSHA, Section 1926.400(h)(2).)

F. A GFCI does not prevent shock. It limits the duration of the shock so the heart is not affected. The shock lasts 1/40 seconds (0.025 seconds) and can be intense enough to knock a person off a ladder or otherwise cause an incidental injury.

Lockout and Tagout of Energized Systems

I. General

Lockout is the preferred method of isolating machines or equipment from energy sources. To assist our employees in maintaining a procedure that meets the requirements of the standard, the following simple procedure is for use in the lockout and tagout program. This procedure may be used when there are a limited number or types of machines or equipment, a single power source or a single source of stored energy. For more complex systems, a more comprehensive procedure will need to be developed, documented, and utilized. An annual inspection will occur to ensure that all procedures and requirements are being followed. All training and retraining will be documented and kept at the main office.

II. Purpose

This procedure establishes the minimum requirements for the lockout or tagout of energy isolating devices. It shall be used to ensure that the machine or piece of equipment is isolated from all potentially hazardous energy, and locked out or tagged out before employees perform any servicing or maintenance activities where the unexpected energization, start up or release of stored energy could cause injury. Types of stored energy are mechanical, electrical, fluid, gas, and chemical.

III. Responsibility/Training

Appropriate employees shall be trained in the safety significance of the lockout and tagout procedure. Employees authorized to lockout and tagout will be determined by the company safety officer or designated individual. Each new or transferred employee whose work operations may be in the area shall be instructed in the purpose and use of the lockout and tagout procedure. Their immediate supervisor will notify affected employees. Retraining will be provided whenever there is a change in job assignment, machines, equipment, processes that present a new hazard or when there is a change in the energy control procedures.

IV. Preparation For Lockout and Tagout

A survey will be conducted to locate and identify all isolating devices to be certain which switch(s), valves(s) or other energy isolating devices applies to the equipment to be locked and tagged. More than one energy source (electrical, mechanical, or others) may be involved. Energy isolating may be accomplished via a shut off valve, switch or other such device. These devices are normally labeled and listed in each equipment operation manual.

V. Sequence of Lockout and Tagout System

A. Notify all affected employees that a lockout and tagout system is going to be utilized and state the reason. The authorized employee shall know the type and magnitude of energy that the machine or equipment utilizes and shall understand the hazards.

B. If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.).

C. Operate the switch, valve, or other energy isolating device(s) so that the equipment is isolated from its energy source(s). Stored energy (such as that in springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc. Methods to dissipate or restrain are normally listed in each equipment operation manual.

D. Lockout and tagout the energy isolating devices with assigned individual lock(s) and tag(s). Locks will be the primary method selected, and tags the secondary.

E. After ensuring that no one is exposed, be sure the energy sources have been completely disconnected by pushing the start button or other normal operating control(s) to make certain the equipment will not operate. CAUTION: Return operating control(s) to “neutral” or “off” position after the test

F. The equipment is now locked out or tagged out.

VI. Restoring Machines or Equipment to Normal Production Operations

A. After the servicing or maintenance is complete and equipment is ready for normal production operations, check the area around the machines or equipment to ensure that no one is exposed.

B. After all tools have been removed from the machine or equipment, guards have been reinstalled and employees are in the clear, remove all lockout and tagout devices. Restore energy to the machine or equipment.

VII. Water Accumulation

In the preceding steps, if more than one individual is required to lockout and tagout equipment, each shall place his/her own personal lockout and tagout device on the energy isolating device(s). When an energy-isolating device cannot accept multiple locks, a multiple lockout device (scissors /hasp) may be used. If a direct lockout is used, a single lock may be used to lockout the machine or equipment with the key being placed in a lockout box or cabinet which allows the use of multiple locks to secure it. Each employee will then use his/her own lock to secure the box or cabinet. As each person no longer needs to maintain lockout protection, that person will remove his/her lock from the box or cabinet. For group lockout or tagout the order of removal of lockout/tagout will be the inverse of installation.

VIII. Basic Rules For Using Lockout and Tagout System

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

B. Each employee involved with locking and tagging out any piece of equipment will be issued a lock specifically for use in this program. He/she will not allow any other person to use this lock nor will it be used for any other purpose other than lockout. Violation of this procedure will cause the company safety officer or designated individual to recommend severe disciplinary action. Each piece of equipment will be numerically identified and the corresponding lockout/tagout procedure will reference that number.

IX. Definitions

A. INDIVIDUALS INVOLVED IN LOCKOUT/TAGOUT/TRY PROCEDURES: All employees of this firm are involved.

B. LOCKOUT: A lockout is defined as the act of padlocking a switch, lever, valve, gate or other isolating device in the “SAFE” or “OFF” position. Only company provided locks shall be used.

C. MULTIPLE LOCKOUTS: A hasp shall be first be installed to accommodate more than one padlock. Each employee required to work on the equipment shall install a padlock. The lockout device must be able to prevent the isolating device from being placed in the “UNSAFE” or “ON” position until each and every padlock and related tag have been properly removed

D. TAGOUT: A tagout is defined as the act of placing a switch, lever, valve, gate, or other isolating device in the “SAFE” position and tagging it to indicate that it must not be placed in the “UNSAFE” or “ON” position until tags have been properly removed.

E. TRY: A try means to attempt to operate the equipment after installing a lock and tag. When the disconnected device has been tagged and locked out, try to start the isolated equipment by means of the push button control or use suitable instruments to ensure that the main disconnect is functioning properly.

F. ISOLATING DEVICE: An isolating device is an electric breaker, a disconnect switch, a manually operated switch or valve, a slide gate, a slip blind or a “figure 8” blind for blanking off piping, or a similar device. If a slip blind is used, its presence as an isolating device shall be readily discernible. Control circuit devices such as push buttons, toggle switches, solenoid valves, and similar devices shall not be considered isolating devices.

G. WHITE DANGER TAG: The conventional white tag with a red danger warning shall be used. The tag shall be properly filled out by the person doing the work, and shall include the department and date. This tag, and associated lock, shall be securely attached to the isolating device when in the “OFF” or “SAFE” position before any maintenance, cleaning, repair or adjustment is performed on equipment.

X. Procedures For Lockout Tagout Tryout

A. Maintenance and repair of equipment

1. Employees shall use the defined isolation devices(s) which apply prior to shutting down the equipment. There may be more than one isolation device. This should be done, if practical, prior to the shutting the equipment down. The operating or maintenance supervisor or other knowledgeable individual shall be contacted as necessary during the lockout. For field operations, the job supervisor will develop the applicable shut down procedures required.
2. Notify the supervisor in charge of the equipment to be worked on and obtain his approval to remove the equipment from service.
3. If the equipment is in operation shut it down through normal stop procedures, usually start stop controls.
4. Move approved isolation device(s) to the “SAFE” or “OFF” position.
5. Each person performing work on the equipment shall install his or her white danger tag(s) and lock(s) on the isolating device(s). In cases where multiple locks and tags are required, involve supervisor.
6. After the equipment is initially shut down, tagged and locked, the controls shall be tried (see definition) to ensure that the equipment is shut down and safe to work on.
7. Individuals assigned to work on equipment subsequent to initial shutdown of the equipment which will be tagged, locked and tried, shall attach their white danger tag and lock before beginning work. To ensure that the equipment has been properly tried, each individual shall verify isolation by alternate methods. These methods may include voltage check, visual verification of isolation, and written or verbal communications
8. When the job is complete, each individual will remove his/her white danger tag(s) and lock(s).
9. For equipment that is required to be down for an extended period, a supervisor shall install a properly completed white danger tag(s) on the isolation device(s) along with his/her lock(s). This lockout and tagout will remain until the equipment is ready for return to service.

B. Vehicle Lockout and Tagout

1. Any vehicle determined to have a problem that would render the vehicle unsafe to operate shall be tagged with a white danger tag in a prominent place such as the steering wheel or the ignition switch. This is normally done by the operator but must be done by the repair person if one has not already been attached. The operator or repair person will keep the ignition key in his pocket during servicing.
2. Before repair work is started, each repair person shall attach his white danger tag. This tag shall remain until the problem has been corrected, the vehicle checked out and determined safe to operate. The repair person may, however, operate the vehicle with his tag attached for adjusting or checking of systems. Under no circumstances shall anyone operate a vehicle while another person's white danger tag is attached.
3. Before fueling any vehicle, it will be turned off and the operator will leave the drivers' seat until the fueling servicer has performed the duties required. The operator will lower the bucket, forks or blade to the ground and set the parking brake before leaving the machine. The servicer will then remove the key from the ignition and place it in his/her pocket while the servicing is being performed. The operator will be expected to help the fueling servicer where possible in order to expedite the refueling. Once the servicer is complete with their work, the key will be replaced in the ignition and the operator can return to their work duties. If the operator fails to leave the operator's seat, the fueling servicer shall refuse to service the machine.
4. Before a field mechanic works on any vehicle, it will be turned off and the operator will leave the drivers' seat until the mechanic has performed the duties required. The operator will lower the bucket, forks or blade to the ground and set the parking brake before leaving the machine. The mechanic will then remove the key from the ignition and place it in his/her pocket and a lockout tag will be installed at the steering wheel, throttle control or ignition switch while the servicing is being performed. The operator will be expected stay clear of the area while work is being done. Once the mechanic has completed the work, the key will be replaced in the ignition, and the lockout tag will be removed. The operator may then return to work duties. If more than one mechanic is working on a machine, all mechanics will install their own lockout tag at the controls and the key will be placed in the possession of a supervisor.

XI. Removal of The Tags and Locks

Each person shall remove his or her own white danger tag(s) and lock(s). However, if the signer of the tag(s) is not available, and an exhaustive attempt has been made to contact the signer, the lock(s) and white danger tag(s) may be removed by an authorized supervisor. This supervisor shall meet three qualifications:

A. The supervisor must have authority over the missing individual.

B. The supervisor should have sufficient knowledge of the equipment and the work being performed.

C. The supervisor must be able to exercise proper judgment with regard to the safety of employees and equipment.

XII. Exceptions

A. Testing or adjusting equipment: If the equipment under repair is to be energized for testing or adjustment, each person shall remove their white danger tag(s) and lock(s) tag before the equipment is energized. Upon completion of these tests or adjustments, the supervisor's white danger tag shall be reattached and each person shall again attach their white danger tag(s) and lock(s) if further repairs are necessary.

B. In the case where equipment is not in an unsafe condition but must be shut down temporarily for dislodging, inspection or measurement, the proper isolation device(s) shall be moved to the "SAFE" or "OFF" position and white danger tag(s) shall be affixed to the isolation device(s). The equipment shall then be tried by means of the push button control device(s) or proper start up sequence. If during the above work, the equipment is determined to be in unsafe condition, then a white danger tag(s) and lock(s) must be attached to each isolation device involved.

Utility Shutdown

I. General

Utility shutdown work requires planning, scheduling, preparation and training before the work commences. Contingencies must be developed to deal with unexpected events. All workers involved in the shutdown shall be informed of the evacuation plan in the event that the work must be quickly abandoned.

II. Planning

A. Identify all of the utilities that are to be impacted by the shutdown.

B. Identify all of the users that will be impacted by the shutdown.

C. Identify all of the routes of access that must stay open during the shutdown.

D. Identify all of the trades that must be involved or available during the shutdown.

III. Scheduling

A. Establish the primary and contingency dates for each phase of the shutdown. Dates must be set with adequate time for notifications.

B. Notify all users of the dates and the planned impact to services.

C. Apply for permits and inspections.

IV. Preparation

A. Conduct a coordination meeting with all trades to ensure that everyone involved knows their role.

B. Erect notice signs to keep out all persons who are not involved with the work.

C. Erect barricades around hazardous points during the shutdown operation.

D. Arrange for location of all utilities to be clearly marked with type and size of service.

E. Post permits and warning notices in a prominent location.

V. Training

A. Complete special task safety training with each crew involved in the work. Include all emergency measures that may be needed if an unplanned event occurs.

B. Check all equipment and personal protective gear to ensure that everything is in proper order and that all workers are familiar with details.

C. Conduct dry run and an emergency drill to ensure that all workers will behave as expected.

VI. Work Performance

A. Station enough supervisors around the work to ensure proper management. Be sure to have voice contact with each of the supervisors. Dedicated radio channels may be necessary for individual trades, but one common channel should be open to all supervisors.

B. In the event of an emergency, supervisors will judge the situation and cause the workers to exit the area as quickly as necessary. If particular pieces of equipment must be left operating, supervisors will report that to management.

C. When the shutdown work has been successfully completed, all services will be restored to normal operation in planned order.

D. Prepare notification to all users that service is restored

VII. Related Topics

All of the following procedures may be incorporated in the shutdown. Refer to those topics as necessary.

A. Electrical Safety ***(Section 15-3)***

B. Confined Space Entry ***(Section15-5)***

C. Demolition Safety ***(Section15-25)***

D. Emergency Action Plan ***(Section 10)***

Electrical Safety

I. General

Electricity is a serious work place hazard, capable of causing employee injury such as shock, electrocution, fires and explosions, as well as serious property damage. By providing our personnel with proper training in safe electrical work practices, BHB hopes to reduce the risk of such incidences. Electrical safety hazards and working on electrical equipment without proper training and authorization should be immediately reported to the job site superintendent and safety coordinator.

II. Training

All employees who face a risk of electrical shock that is not reduced to a safe level will be properly trained in electrically related safe practices. Training will consist of

A. Specific equipment procedures

B. Clearance distances and corresponding voltages

C. Skills to distinguish exposed live parts from other parts of electrical equipment

D. Skills to determine the nominal voltage of exposed live parts

Employees not qualified or authorized to perform work on electrical equipment and components will be trained in general electrical safety precautions for the purpose of hazard awareness.

III. Hazard Control

Safety related work practices shall be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts, when work is performed near or on equipment or circuits, which are or may be energized. The specific safety-related work practices shall be consistent with the nature and extent of the associated electrical hazards.

The following methods will be used to help prevent occurrences of electricity related incidences:

A. If the exposed live parts are not de-energized other safety related work practices will be used to protect employees who may be exposed to the electrical hazards involved. Such work practices shall protect employees against contact with energized circuit parts directly with any part of their body or indirectly through some other conductive object.

B. Exposed de-energized parts or conductors and parts of electric equipment that have been de-energized but have not been locked and tagged shall be treated as energized parts.

C. While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been de-energized, the circuits energizing the parts shall be locked out or tagged or both in accordance with ***Section 15-11 of the Safety and Health Manual***.

D. Only a qualified employee may work on electric circuit parts or equipment that have not been de-energized. The employee shall be capable of working safely on energized circuits and shall be familiar with:

1. The proper use of special precautionary techniques
2. Personal protective equipment
3. Insulating and shielding materials
4. Insulated tools.

E. If work is to be performed near / below overhead lines, the lines shall be de-energized and grounded, or other protective measures shall be provided before work is started. If the lines are to be de-energized, arrangements shall be made with the person or organization that operates or controls the electric circuits involved to de-energize and ground them.

F. When an unqualified person is working in an elevated position near overhead lines, the location shall be such that the person and the longest conductive object he or she may contact cannot come closer to any unguarded, energized overhead line than the following distances:

1. For voltages to ground 50kV or below - 10 feet
2. For voltages to ground over 50kV - 10 feet plus 4 inches for every 10KV over 50KV

G. When a qualified person is working in the vicinity of overhead lines, whether in an elevated position or on the ground, the person may not approach or take any conductive object without an approved insulating handle closer to exposed energized parts than shown in Table S-5 unless:

1. The employee is insulated from the energized part gloves with sleeves if necessary, rated for the voltage involved are considered to be insulation of the person from the energized part on which work is performed.
2. The energized part is insulated both from all other conductive objects at a different potential and from the person.
3. The person is insulated from all conductive objects at a potential different from that of the energized part.

Table S-5 Approach Distances For Qualified Employees – Alternating Current

Voltage Range	Minimum Approach Distance
300V and less	Avoid Contact
Over 300V, no over 750V	1ft. 0in.
Over 750V, not over 2kV	1ft. 6in.
Over 2kV, not over 15kV	2ft. 0in.
Over 15kV, not over 37kV	3ft. 0in.
Over 37kV, not over 87.5kV	3ft. 6in
Over 87.5kV, not over 121kV	4ft. 0in
Over 121kV, not over 140kV	4ft. 6in

H. Any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines shall be operated so that a clearance of 10 feet is maintained. If the voltage is higher than 50kV, the clearance shall be increased 4 inches for every 10kV over that voltage.

I. Employees may not enter spaces containing exposed energized parts, unless illumination is provided that enables the employees to perform the work safely. Where lack of illumination or an obstruction precludes observation of the work to be performed, employees may not perform tasks near exposed energized parts. Employees may not reach blindly into areas that may contain energized parts.

J. When an employee works in a confined or enclosed space that contains exposed energized parts, the employee will be provided with, protective shields, protective barriers or insulating materials as necessary to avoid inadvertent contact with these parts. Doors, hinged panels and the like shall be secured to prevent their swinging into an employee and causing the employee to contact exposed energized parts.

K. Portable ladders shall have non conductive side rails if they are used where the employee or the ladder could contact exposed energized parts. Metallic ladders shall not be permitted on a BHB job site.

L. Conductive articles of jewelry and clothing such a watch bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, or metal headgear may not be worn if they might contact exposed energized parts. However, such articles may be worn if they are rendered non conductive by covering, wrapping, or other insulating means.

M. Where live parts present an electrical contact hazard, employees may not perform housekeeping duties at such close distances to the parts that there is a possibility of contact, unless adequate safeguards such as insulating equipment or barriers are provided. Electrically conductive cleaning materials including conductive solids such as steel wool, metalized cloth, and silicon carbide, as well as conductive liquid solutions may not be used in proximity to energized parts unless procedures are followed which will prevent electrical contact.

Fire Protection

I. Policy Statement

During the construction phase of any project, there is a much greater possibility of a fire than in a structure that has been completed and placed into service. This is partly due to the accumulation of scrap lumber, packing, wrapping, and other combustible refuse. In addition, the use of cutting, grinding, welding, temporary lighting and heaters, etc. present the potential for extensive loss due to fire. Lack of operating detection and sprinkler systems increases the risk of loss from a fire.

Both OSHA and MSHA have adopted standards that were developed by NFPA. The following is an outline of NFPA standards that relate to construction.

II. Fire Fighting Equipment

A. The project shall be responsible for the development of a fire protection program as it applies to each specific job site. Each phase of the project shall be provided for.

B. Access to all fire fighting equipment and egress shall be mandatory at all times.

C. Operational capability of fire fighting equipment and control of egress shall be managed at all times.

D. All fire fighting equipment shall be regularly inspected and maintained. Monthly inspections are to be done as a bare minimum. Defective or discharged equipment shall be immediately replaced and tagged “out of service.” All fire extinguishers will be inspected on an annual basis as well.

E. During welding, cutting or grinding operations, there shall be a fire extinguisher with at least a 10 B rating in close proximity.

F. Fire extinguishers used to protect areas involving welding, cutting, or grinding shall be checked daily prior to start of operation.

G. Unless a temporary or permanent water supply of sufficient volume, duration and pressure to properly operate the fire fighting equipment is available, fire extinguishers will be used as noted above.

H. A portable fire extinguisher, rated at not less than 2 A, shall be provided for each 3,000 square feet of the protected area. Travel distance from any point of the protected area to the nearest fire extinguisher shall not exceed 100 feet.

I. One or more fire extinguishers rated at not less than 2 A shall be provided on each floor. As a minimum, fire extinguishers shall be located next to stairways in multi-story buildings.

J. Where more than 5 gallons of flammable or combustible liquids or 5 pounds of flammable gas are being used on the job site, a fire extinguisher rated at not less than 20 B shall be provided at a distance of between 25 feet and 75 feet.

K. Portable fire extinguishers shall be inspected and maintained in accordance with NFPA codes or the local authority having jurisdiction.

L. As soon as a fire hazard becomes apparent or when an operation is planned with a known risk associated, proper equipment must be put into place.

III. Fire Prevention

A. All employees will be trained and made familiar with the use of fire extinguishers and other fire prevention measures prior to assignment. Weekly safety meetings may be used to reinforce this and retraining will occur on an annual basis.

B. Smoking shall be prohibited in the vicinity of operations that constitute a fire hazard, and shall be conspicuously posted:"NO SMOKING OR OPEN FLAME."

C. Areas where cutting and welding are performed shall be kept clean, and any accumulation of trash, rags, etc. shall be removed. Consideration should be given to the distance that sparks or slag can travel.

D. When practical, objects to be welded, cut or heated should be moved to a safe location. If this cannot be accomplished and if all the fire hazards cannot be removed, appropriate steps shall be taken to confine the heat, sparks, slag, etc.

E. When welding, cutting or grinding operations are to be performed above gratings, decks, or near floor or wall openings, a non-combustible covering shall be placed over deck or openings. Care shall be taken to direct the stream of slag or cutting away from any opening in floor or wall. Do not allow large pieces of hot slag to remain on surfaces long enough to cause combustion or damage.

F. Sparks and slag must be contained in congested work areas. When it is impossible to contain sparks and slag, the danger area must be surrounded with barrier warning tape.

G. Equipment that has an open flame must always be attended by a knowledgeable person.

H. Store flammable liquids in approved safety containers (not plastic). Keep such containers in properly managed storage areas.

I. Electrical wiring or repairs are to be in accord with code.

J. Fuel, oil, grease, and any flammable material spill shall be cleaned up immediately.

K. Accumulations of trash, scrap lumber, packing and other debris are to be cleaned up regularly. Provisions are to be made for the removal and disposal of garbage and debris from the job site.

L. Open fires are prohibited.

M. Obey all signs that warn against smoking and open flames (where fire or explosion hazards exist).

IV. Fire Extinguisher Schedule

Filtered Contaminants	Type	Canister Color
Construction vehicles	5-B	One each
Filed offices	2-A	One each
Material storage vans/trailers	2-A	One each (post outside daily)
Other buildings or structures	2-A	One per 3000sf (no more than 100 feet of travel to reach any spot)
Flammable liquid storage areas or bulk storage tanks	20-B	One per area (25 to 75 feet)
Work operation involving flammable liquid or gas	10-B	One each (within 30 feet)

V. Project Fire Prevention and Protection Plan

A. Immediate action checklist (prior to start of project).

1. Notification -

   a. Employees will be notified of a dangerous fire by (continuously sounding several vehicle horns or sirens, etc.) for 2 minutes. Employees will secure the work area by shutting down combustion engines and unplugging electrical equipment.

   b. The local fire department will be notified by dialing 911 (or other required phone number). Clearly stated job site location will be given to the fire department dispatcher. An employee will be assigned by the superintendent to guide the fire department personnel to the fire as necessary.

   c. Medical personnel will be contacted by dialing 911 (or other required phone number). Clear assessment of injuries and location of the injured will be stated. The superintendent will assign an employee to guide the medical response personnel to the injured worker(s).

   d. Owner/Occupant. Establish procedures with the owner/occupant for notification of a fire.

2. Employee Assembly - All employees will assemble at the job trailer or foreman's truck, so an accurate count of employees can be completed. Each subcontractor will account for employees in a similar manner.

3. Fighting the Fire - No more than two individuals will remain to fight the fire. If the fire cannot be brought under control with one or two fire extinguishers (or breathable atmosphere becomes a problem), evacuate the area and report to the assembly point.

4. First Aid - Trained employees will treat injured employees. OSHA requires at least one employee on the job (during working hours) to be First Aid/CPR trained.

B. Fire Fighting Equipment (see roman numeral **II** above).

C. Fire Prevention (see roman numeral **III** above).

Flammable Liquid Storage

I. Storage Vessels

Above ground storage of flammable liquids (gasoline and diesel) in:

A. Skid tanks

B. Overhead tanks

C. Trailer-mounted tanks

II. Requirements

A. Check with the local authorities for existing ordinances covering the aboveground storage of flammable liquids.

B. All fuel tanks shall be located at least 20 feet from any type of building.

C. Two or more fuel tanks, grouped together, having a combined capacity in excess of 2,200 gallons, shall be separated by a 5 foot clear area.

D. All fuel tanks shall be vented.

E. Vent pipes shall be at least as large as the filling or withdrawal connection, whichever is larger, but in no case less 1 1/4 inches nominal inside diameter.

F. Where the vent pipe, with vent pipe outlet installed on top, is adjacent to buildings or highly traveled areas, there shall be a minimum of 12 feet above the building or adjacent ground level.

G. The vent pipe outlet shall be constructed to include a flame arrestor and be able to discharge the flammable vapors upward and horizontally away from the adjacent area.

H. Vent outlets shall be located so that the flammable vapors will not be trapped by eaves or other obstructions and shall be at least 5 feet from building openings.

I. All tanks equipped with small pump engines shall be:

1. Provided with a flame/spark shield between the tank and the engine that is constructed of a non-combustible material.
2. Inspected regularly to make sure that the muffler and spark plug wire are not defective and that there is not any fuel leaks. If there are any defects, they shall be repaired or replaced as soon as possible.

J. All fuel dispensing hoses shall be provided with a bonding wire that shall be permanently attached to the fuel tank and hose. Some hoses have the wire bonded internally within the hose and to its end connections. This is acceptable.

K. Fire protection is addressed in ***section 15-14.***

Material Handling and Storage

I. General

Handling and storing materials can mean hoisting tons of steel with a crane; driving a truck loaded with rocks or stone; carrying bags of sand manually or stacking bricks or other materials such as drums, barrels, kegs, and lumber. The efficient handling and storing of materials are vital to industry. Unfortunately, the improper handling and storing of materials often result in injuries or death.

II. Training

Employees will be trained to recognize and avoid material handling hazards. Training will provide employees with the following hazard awareness:

A. Dangers of lifting without proper training.

B. General principles of ergonomics and recognition of hazards and injuries.

C. Avoidance of unnecessary physical stress and strain.

D. Awareness of what a worker can comfortably handle without undue strain.

E. How to use equipment properly.

F. Recognition of potential hazards, how to prevent or correct them and procedures for early reporting of injuries.

III. Manual Lifting

Lifting heavy loads is one of the leading causes of injury in the workplace. When at all possible It is recommended that employees use mechanical equipment to do the heavy lifting. In situations where mechanical equipment cannot be used the following guidelines will be followed.

A. Before manual lifting is performed, a hazard assessment must be completed. The assessment must consider size, bulk, and weight of the object(s), if mechanical lifting equipment is required, if two-man lift is required, whether vision is obscured while carrying and the walking surface and path where the object is to be carried.

B. Injuries caused by improper lifting will be investigated and documented. Investigation findings will be incorporated into work procedures in order to prevent future injuries.

C. Projects and employees work techniques will be evaluated to assess the potential for and prevention of injuries. New operations will be evaluated to engineer out hazards before work processes are implemented.

D. Lifting loads heavier than 50 lbs will increase the risk of injury. When lifting loads heavier than 50 lbs use two or more people to lift the load.

E. Move items close to your body and use your legs when lifting an item from a low location

F. Store and place materials that need to be manually lifted and transported at power zone height, about mid thigh to mid chest.

G. Minimize bending and reaching by placing heavy objects on shelves, tables or racks.

H. Avoid twisting, especially when bending forward while lifting. Turn by moving the feet rather than twisting the torso.

I. Keep your elbows close to your body and keep the load as close to your body as possible

J. Try to keep the vertical distance of lifts between mid thigh and shoulder height.

K. Manual lifting equipment such as dollies, hand trucks, lift-assist devices, jacks, carts, hoists will

be provided for employees.

IV. Material Storage

A. All materials stored in tiers shall be stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, falling or collapse.

B. Aisles and passageways shall be kept clear to provide for the free and safe movement of material handling equipment or employees. Such areas shall be kept in good repair.

C. Material stored inside buildings under construction shall not be placed within 6 feet of any hoist way or inside floor openings, nor within 10 feet of an exterior wall which does not extend above the top of the material stored.

D. Materials shall not be stored on scaffolds or runways in excess of supplies needed for immediate operations.

E. Brick stacks shall not be more than 7 feet in height. When a loose brick stack reaches a height of 4 feet, it shall be tapered back 2 inches in every foot of height above the 4 foot level.

F. When masonry blocks are stacked higher than 6 feet, the stack shall be tapered back one-half block per tier above the 6 foot level.

G. Used lumber shall have all nails withdrawn before stacking.

V. Rigging Equipment

A. Rigging equipment for material handling shall be inspected prior to use on each shift and as necessary during its use to ensure that it is safe. Defective rigging equipment shall be removed from service.

B. Not be loaded in excess of its recommended safe working load as prescribed on the identification markings by the manufacturer

C. Has permanently affixed and legible identification markings as prescribed by the manufacturer that indicate the recommended safe working load;

D. Each day before being used, the sling and all fastenings and attachments shall be inspected for damage or defects by a competent person designated by the employer. Additional inspections shall be performed during sling use, where service conditions warrant. Damaged or defective slings shall be immediately removed from service.

E. Rigging equipment, when not in use, shall be removed from the immediate work area so as not to present a hazard to employees.

F. When rotating the crane, sudden starts and stops shall be avoided. Rotational speed shall be such that the load does not swing out beyond the radii at which it can be controlled. A tag or restraint line shall be used when rotation of the load is hazardous.

G. Hooks on overhaul ball assemblies, lower load blocks, or other attachment assemblies shall be of a type that can be closed and locked, eliminating the hook throat opening. Alternatively, an alloy anchor type shackle with a bolt, nut and retaining pin may be used.

H. All employees shall be kept clear of loads about to be lifted and of suspended loads.

Vehicles and Heavy Equipment

I. General

A. All equipment left unattended at night adjacent to a highway in normal use or adjacent to construction areas where work is in progress shall have appropriate lights or reflectors or barricades equipped with the appropriate lights or reflectors to identify the location of the equipment.

B. Equipment must maintain a clearance of ten feet from all overhead power lines.

C. All equipment will be examined before being placed in service, and will not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. Such examination shall be made at least daily. Where equipment is used on a round-the-clock basis, they will be examined after each shift. Defects when found will be immediately reported and corrected.

D. The brakes shall be set and wheel chocks placed under the rear wheels to prevent trailers from rolling while they are boarded with powered industrial trucks.

E. Only trained and certified operators will be allowed to operate equipment. Operator training and evaluation will be conducted by persons who have the knowledge, training, and experience to train operators with different types of formal instruction and evaluate their competence in the workplace. Training will include:

1. Operating instructions, warnings and precautions
2. Differences between trucks and automobiles
3. Controls and instrumentation
4. Engine and motor operation
5. Steering and maneuvering
6. Visibility including restrictions due to loading
7. Fork and attachment adaptation operation and use limitations
8. Vehicle capacity and stability
9. Vehicle inspection, maintenance, refueling and or charging and recharging of batteries
10. Operating limitations

F. Refresher training, including an evaluation of the effectiveness of that training, will be conducted at least every three years to ensure that the operator has the knowledge and skills needed to operate the powered industrial truck safely. Refresher training in relevant topics shall be provided to the operator when:

1. The operator has been observed operating the equipment in an unsafe manner
2. The operator has been involved in an accident or near miss incident
3. The operator has received an evaluation that reveals the operator is not operating the equipment safely
4. The operator is assigned to drive a different piece of equipment
5. The workplace condition changes in a manner that could effect safe operation

G. Maintenance Procedure

1. Heavy machinery, equipment, or parts thereof which are suspended or held aloft by use of slings, hoists, or jacks shall be substantially blocked or cribbed to prevent sliding or shifting before employees are permitted to work under or between them. Bulldozer and scraper blades, sand loader buckets, dump bodies, and similar equipment shall be either fully lowered or blocked when being repaired or when not in use. All controls shall be in a neutral position with the motor stopped and brakes set unless work being performed requires otherwise.
2. Parked equipment shall be chocked and parking brakes set. The controls shall be set according to manufacturer's recommendations.
3. All cab glass shall be safety glass or equivalent that introduces no visible distortion affecting the safe operation of any machine. Cracked and broken glass shall be replaced.
4. Windshield wiper blades shall be in good condition at all times.

II. Motor Vehicles

General Requirements:

A. All vehicles shall have a service brake system, an emergency brake system, and a parking brake system. These systems may use common components and shall be maintained in operable condition.

B. Whenever visibility conditions warrant additional light, all vehicles or combination of vehicles in use shall be equipped with at least two headlights and two taillights in operable conditions.

C. All vehicles or combination of vehicles shall have brake lights in operable condition regardless of light conditions.

D. All vehicles shall be equipped with an adequate audible warning device at the operator's station and in operable condition.

E. The use of any motor vehicular equipment having an obstructive rear view shall not be used unless:

1. The vehicle has a reverse signal alarm audible above the surrounding noise level.
2. If the reverse signal is inoperable, the vehicle is backed only when an observer signals that it is safe to do so.

F. All vehicles with cabs shall be equipped with windshields and powered wipers. Vehicles operating in areas or under conditions that cause fogging or frosting of the windshield shall be equipped with operable defogging or defrosting devices.

G. All haulage vehicles whose payload is loaded by means of cranes, power shovels, loaders or similar equipment shall have a cab shield and/or canopy adequate to protect the operator from shifting or falling materials.

H. Any cargo on or in motor vehicles must be adequately stored and secured to prevent unintentional movement of the equipment which could cause spillage, damage to the vehicle, or injury to the operator. Tools and materials shall be secured to prevent movement when transported in the same compartment with employees.

I. Vehicles used to transport employees shall have seats firmly secured and adequate for the number of employees to be carried. Seat belts and anchorages shall be installed in all motor vehicles for the operator and are to be worn at all times when equipment is in use.

J. Trucks with dump bodies shall be equipped with positive means of support, permanently attached, capable of being locked into position to prevent accidental lowering of the body while maintenance or inspection work is being done.

K. Operating levers controlling hoisting or dumping devices on haulage bodies shall be equipped with a latch or other device which will prevent accidental starting or tripping of the mechanism.

L. Trip handles for tailgates of dump trucks shall be so arranged that in dumping material, the operator will be in the clear.

M. All rubber-tired motor vehicles shall be equipped with fenders.

N. All vehicles in use shall be checked at the beginning of each shift to insure that the following parts, equipment, and accessories are in safe operating condition and free of apparent damage that could cause failure while in use: service brake, including trailer and brake connections, parking system (hand brake), emergency stopping system (brakes), tires horn, steering mechanism, coupling devices, seat belts, operating controls, and safety devices. All defects shall be corrected before the vehicle is placed in service. These requirements also apply to equipment such as lights, reflectors, windshield wipers, defrosters, fire extinguishers, etc., where such equipment is necessary.

III. Motor Vehicle Records

A. All prospective employees whose job will involve driving a company vehicle will be required to list all accidents and moving violations they have had in the past 3 years on their application. The Motor Vehicle Record (MVR) will be obtained from the state to verify this information. Any misrepresentation may be grounds for termination.

B. The MVR will be evaluated according to company standards. This evaluation will be based on the following criteria:

   1. The maximum number of moving violations and/or accidents allowed in a 3 year period will be 3. (Example: (a) 1 speeding, 2 accidents; (b) 3 speeding; (c) 1 accident, 1 traffic light violation, 1 speeding, etc.)
   2. No major moving violations will be allowed, such as, driving while intoxicated, hit and run or any felony or manslaughter involving the use of a motor vehicle. Any one of these may result in removal from driving or make applicants ineligible for a driving position.

C. The MVR will be obtained on a semi-annual basis and re-evaluated according to these standards.

D. Because a combination of 3 moving violations and/or accidents in a 3 year period is the maximum allowed by BHB, any driver who reaches this point will be issued written warning and placed on probation. Any further moving violations or accidents may result in removal of driving privileges. (Non-preventable accidents do not count. National Safety Council Rule on determining preventable accidents will apply.)

E. A driver on probation will remain on probation until the MVR is again within company standards. This will occur when any violations drop off the MVR at the end of a year. A driver on probation will have the MVR checked frequently as determined by the company. When the driver has cleared up his/her driving records, the company will send them a written notice of reinstatement allowing the individual to drive for company business.

F. If a driver is removed from driving because of failure to meet these standards, a non-driving position will be offered if one is available, otherwise the driver may be terminated.

G. Any driver, currently employed, who has already exceeded these standards will be placed on probation immediately. The rules and procedures regarding the period of probation and removal of driving privileges will apply as outlined above if another moving violation or preventable accident occurs.

IV. Material Handling Equipment

A. Earth-Moving Equipment - These rules apply to the following types of earth-moving equipment: scrapers, loaders, track-driven or rubber tire tractors, bulldozers, off-highway trucks, graders, agricultural and industrial tractors, and similar equipment.

B. Seat Belts

1. Seat belts shall be provided on all equipment covered by this section.
2. Seat belts need not be provided for equipment that is designed only for stand-up operation.
3. Seat belts need not be provided for equipment that does not have roll-over protective structure or adequate canopy protection.
4. While operating equipment, seat belts are required to be worn.

C. Roadway Grades - Roadway grades for construction equipment use shall be designed by a qualified engineer, competent in this field and constructed to accommodate all of the equipment using the roadway. Emergency access ramps and berms shall be constructed to restrain and control runaway vehicles.

D. Brakes - All earth-moving, concrete pumps and crane equipment shall have a service braking system capable of stopping and holding the equipment fully loaded.

E. Roll-Over Protective Structures (ROPS) - All of the following equipment manufactured after August 1, 1969 must be fitted with ROPS:

All rubber-tired, self-propelled scrapers, rubber-tired front-end loaders, rubber-tired do Section 15-30 Stop Work Authority zers, wheel-type agricultural and industrial tractors, crawler tractors, crawler-type loaders, and motor graders, with or without attachments, that are used in construction work.

1. Remounting - ROPS removed for any reason shall be remounted with equal quality, or better, bolts or welding as required for the original mounting.
2. Labeling - Each ROPS shall have the following information permanently affixed to the structure:
   a. Manufacturer or fabricator's name and address
   b. ROPS model number, if any
   c. Machine make, model, or series number that the structure is designed to fit

F. Audible Alarms - All bi-directional machines, such as rollers, compactors, bulldozers, concrete pumps, cranes and similar equipment, shall be equipped with a horn, distinguishable from the surrounding noise level, which shall be operated as needed when the machine is moving in either direction. The horn shall be maintained in an operative condition.

V. Cranes and Concrete Pump Rigs

A. General Requirements

1. The same general requirements previously listed for equipment and motor vehicles are applicable to cranes and concrete pumps.
2. All equipment will be locked up whenever the machine is left overnight on a customer's work site, when the operator leaves for meal breaks, or at the end of shift.
3. All cranes will be inspected daily by the operator. See sample form in ***Crane Operations Section 15-18*** in this Safety and Health Manual.

B. Maintenance Procedure - The same maintenance requirements previously listed for equipment and motor vehicles are applicable to cranes and concrete pumps

NOTE: Texting while driving any vehicle/heavy equipment is absolutely forbidden. This includes personal vehicles during business hours. Doing so may be grounds for termination.

Crane Operations

I. General Requirements

A. All operators must be competent and employees must be trained prior to the operating of equipment and then evaluated to confirm they understand the information provided in the training.

B. All crane operators must maintain the use of PPE in accordance with OSHA's standards and ***section 15-1*** of this Safety and Health Manual.

C. All cranes shall comply with the manufacturer's specifications and limitations applicable to the operation of any and all cranes and derricks. Attachments used with cranes shall not exceed the capacity, rating or scope recommended by the manufacturer.

D. When assembling or disassembling equipment or attachments the employee must comply with all applicable manufacturer instructions and prohibitions.

E. Only competent or qualified personnel may direct the assembly and disassembly of equipment.

F. The equipment must not be assembled or used unless ground conditions are firm, drained, and graded to a sufficient extent so that, in conjunction (if necessary) with the use of supporting materials, the equipment manufacturer's specifications for adequate support and degree of level of the equipment are met.

G. Rated load capacities and recommended operating speeds, special hazard warnings or instructions shall be conspicuously posted on all equipment. Instructions or warnings shall be visible to the operator while he is at this control station.

H. A boom angle indicator in good working order shall be provided.

I. A signal person will be provided if the operators view is obstructed, if site-specific safety concerns require it or if the operator determines that it is necessary.

J. A poster with illustrations of hand signals to crane and derrick operators shall be placed outside the crane, and must be visible to all employees.

K. The designated competent person shall inspect all machinery and equipment prior to use and during use to make sure it is in safe operating condition. Any deficiencies shall be repaired or defective parts replaced before continued use.

L. A thorough annual inspection of the hoisting machinery shall be made by a competent person or by a government or private agency recognized by the U.S. Department of Labor. The employer shall maintain a record of the dates, results of inspections for each hoisting machine and piece of equipment and notation of required repairs being completed.

M. Wire rope shall be taken out of service when any of the following conditions exist:

1. In running ropes, six randomly distributed broken wires in one lay or three broken wires in one strand in one lay
2. Wear of one-third the original diameter of outside individual wires - kinking, crushing, bird-caging or any other damage resulting in distortion of the rope structures
3. Evidence of heat damage from any cause
4. Reductions from nominal diameter of more than 1/64 inch for diameters up to and including 5/16 inch, 1/32 inch for diameters 3/8 inch to and including 1/2 inch, 3/64 inch for diameters or diameters 9/16 inch to and including 3/4 inch, 1/16 inch for diameters 7/8 inch to 1 1/8 inch inclusive, 3/32 inch for diameters 1 1/4 inch to 1 1/2 inch inclusive

5. In standing ropes, more than two broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection
6. Wire rope safety factors shall be in accordance with American National Standards Institute (ANSI) B 30.5-1968 or SAE J959-1966

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

O. Accessible area within the swing radius of the rear of the rotating superstructure (counterweights), either permanently or temporarily mounted, shall be barricaded in such a manner as to prevent an employee from being struck or crushed by the crane

P. All exhaust pipes shall be guarded or insulated in areas where contact by employees is possible in the performance of normal duties.

Q. Whenever internal combustion engine powered equipment exhausts in enclosed spaces, tests shall be made and recorded to see that employees are not exposed to unsafe concentrations of toxic gases or oxygen deficient atmospheres.

R. All windows in cabs shall be of safety glass or equivalent that introduces no visible distortion that will interfere with the safe operation of the machine.

S. Whenever there is a concern to safety the operator has the authority to stop and refuse to handle loads until a qualified person had determined that safety has been assured.

II. Entrance and Exit

A. A ladder or steps shall be provided to give access to a cab roof where necessary for rigging or service requirements.

B. On cranes, guardrails, hand holds, and steps shall be provided for easy access to the car and cab.

C. Platforms and walkways shall have anti-skid surfaces.

D. Fuel tank filler pipes shall be located in such a position or protected in such a manner as to not allow spill or overflow to run onto the engine, exhausts or electrical equipment of any machine being fueled.

E. An accessible, approved fire extinguisher rated at 5-BC shall be available at all operating stations or cabs of equipment.

F. Equipment or machines being operated approximate to electrical distribution or Transmission Lines.

1. A person shall be designated to observe clearance of the equipment and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visible means.
2. Cage-type boom guards, insulating links or proximity warning devices may be used on cranes.
3. It will be determined if any part of the equipment, load line or load, if operated up to the equipment's maximum working radius in the work zone could get closer than 20 feet to a power line. If so one of the following steps must be followed.

a. De-energize and Ground – Confirm from the utility owner/operator that the power line has been de-energized and visibly grounded at the job site

b. 20 Foot Clearance – Ensure that no part of the equipment, load line or load gets closer than 20 feet to the power line.

c. Table A Clearance – (***See Table A at end of section***)

4. For utility lines, the minimum clearance between the lines and any part of the crane or load shall be 10 feet.

5. In transit with no load and boom lowered, the equipment clearance shall be a minimum of 4 feet where voltage is less than 50 kilovolts, 10 feet where voltage is over 50 kilovolts, and 16 feet for voltages up to and including 750 kilovolts.

G. For information sake, check with the local power company concerning the voltage carrying capacity of any electrical transmission lines that cross or run parallel with the project.

H. The employer without the manufacturer's written approval shall make no modifications or additions that affect the capacity and operation of the equipment.

I. All jibs shall have positive stops to prevent their movement of more than 5 degrees above the straight line of the jib and boom on conventional type crane booms. The use of cable-type belly slings does not constitute compliance with this rule.

J. No one will be allowed to ride material that is being hoisted.

K. Overhead protection shall be provided for all operators of hoisting equipment (hoisting tower). Support for the overhead protection shall be of equal strength.

III. Inspection Schedule for Crane Operations

A. The operator will inspect each crane before each day's use, and weekly inspections will be performed as well. The company using the equipment will provide the forms necessary to meet all compliance needs with each work order. It is the sole responsibility of the operators to complete the inspection forms.

B. The operator must submit the Hydraulic Crane Log to BHB's superintendent on a daily basis when cranes are present and in use on the job site. (***Hydraulic Crane Log sample at the end of this section***)

C. The monthly inspections will be done in the shop unless the equipment is leased to a project where the equipment cannot return to the shop. If such conditions occur, the furnishing contractors will go to the project to inspect and maintain the equipment

D. The semi-annual inspections will be the responsibility of the furnishing contractor.

E. The annual inspections will be the responsibility of the furnishing contractor and done by an independent certified crane inspection serviceman.

F. All the required inspection forms must be available to the project superintendent, if requested.

Table A - Minimum Clearance Distances

Voltage (nominal, kV, alternating current)	Minimum clearance distance (feet)
up to 50	10
over 50 to 200	15
over 200 to 350	20
over 350 to 500	25
over 500 to 750	35
over 750 to 1,000	45
over 1,000	(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).

Hydraulic Daily Crane Inspection Log Sample

Crane Make: **Model No.:** **S/N:** **Co. Equip. No.:** **Month** **Yr.**

Each day the crane is in operation the assigned operator will perform an operational and maintenance safety check including the following items plus any other items necessary to insure that the equipment is safe to operate. If an unsafe item is found, notify your supervisor IMMEDIATELY. Note unsatisfactory items in detail on the reverse side of the checklist, sign and date the report. Repair actions shall be entered, dated and signed by the authorized mechanic.

#	Check Items: (/-OK) (X-repair) (0-n/a)	Date																													
		1	2	3	4	5	6	7	8	9	10	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	CONTROLS: Proper operation-Wear																																
2	Clutches																																
3	Brakes																																
4	Elec.-Air-Hyd. Systems																																
5	OUTRIGGERS: Operation & Leakage																																
6	Pads & Locks																																
7	RIG CAB: Glass & Windshield Wiper																																
8	Fire Ext. - 5 B:C min. - Insp.																																
9	Load & Warning Charts																																
10	Hand Signal Chart																																
11	SAFETY DEVICES: Limit Switches																																
12	Locking Devices																																
13	Boom Angle Indicator																																
14	Signal Horn																																
15	Swing Radius Barricade																																
16	BOOM: Condition & Damage																																
17	Jib Stop & Block																																
18	Hooks & Safety Latches																																
19	WIRE ROPE: Condition & Lubrication																																
20	Connections & Clamps																																
21	Kinking-Crushing-Wear																																
22	Broken Wires & Reeving																																
23	Engine: Idle & Power Check																																
24	General: Lubrication-Fuel-Cooling																																
25	Others:																																
26																																	
27																																	
	Operator's Initials under each date of operation																																

Welding and Cutting Operations

I. Welding General

A. Before cutting/welding is permitted the area shall be inspected by the individual responsible for authorizing cutting/welding operations and he shall grant authorization to proceed in the form of a written permit.

B. If cutting/welding cannot be conducted safely and the following requirements cannot be followed then it shall not be performed.

C. All cutters/welders and their supervisors must be trained in the safe operation of the equipment they are using and the safe use of the process.

D. A suitable fire extinguisher or other fire control device must be ready for instant use in any location where welding is done. Where welding must be carried on near combustible materials, a fire watcher will be readily available and trained in the use of fire extinguishers/fire control devices.

E. Screens, shields or other safeguards should be provided for the protection of people or combustible materials below or otherwise exposed to sparks or falling objects. When others must work nearby they should be protected from the arc rays by screens or by other adequate individual protection.

F. When welding or cutting lead, zinc, cadmium-coated, lead bearing, or other toxic materials, provision should be made for the removal or the use of proper personal respiratory protection enforced. This equipment should be a 10-B rated fire extinguisher.

G. Protective Clothing

1. Protective clothing required for any welding operation will vary with the size, nature, and location of the work.
2. Some suggested protective measures for welders and helpers are:
    a. Flame-resistant gauntlet gloves to be worn except where welder is engaged in light work.
    b. Flame-resistant aprons of leather, asbestos, or other suitable material, as protection against radiated heat and sparks.
    c. Clothing should be free of oil and grease. Woolen clothing resists being ignited as readily as untreated cotton. Welders or helpers should not wear double-knits or nylon.
    d. Pockets and cuffs catch sparks. Collars and pockets should be buttoned and cuffs turned up inside pants. Open pockets should be eliminated from the front of vests, shirts, and aprons or provided with buttoned flaps.
    e. Safety shoes are recommended. Low-cut shoes with unprotected tops are not permitted.
    f. Fire-resistant capes or shoulder covers should be worn during overhead welding operations.
    g. Ear protection is desirable for overhead welding and welding in confined places.
    h. Safety goggles should be worn during chipping and cleaning. These goggles should have tinted lenses affording ultra-violet and infrared radiation protection.

H. Fire Prevention

1. If the object to be cut/welded cannot be moved away from potential fire hazards then all movable fire hazards should be removed instead and guards shall be used to confine heat, sparks and slag from any fire hazards that cannot be moved.
2. When the welding, cutting, or heating operation is such that normal fire prevention precautions are not sufficient, additional personnel shall be assigned to guard against fire while the actual welding, cutting, or heating operation is being performed and for at least 30 minutes after completion of work to ensure that no possibility of fire exists. Such personnel shall be instructed as to the specific anticipated fire hazards and how the fire fighting equipment provided is to be used.
3. Drum containers or hollow structures which have contained toxic or flammable substances, shall, before welding, cutting or heating is undertaken on them, either be filled with water or thoroughly cleaned of such substances and ventilated and tested.
4. Suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use.

I. Shielding - Whenever practical, all arc welding operations shall be shielded by non-combustible or flame-proof screens which will protect the employees and other persons working in the vicinity from the direct rays of the arc.

J. Ventilation and Protection in Welding, Cutting and Heating

1. Welding, cutting, and heating may normally be done without mechanical ventilation or respiratory protective equipment, but where, because of unusual physical or atmospheric conditions, an unsafe accumulation of contaminants exist suitable mechanical ventilation or respiratory protective equipment shall be provided.
2. Employees performing any type of welding, cutting or heating shall be protected by suitable eye protective equipment.
3. Other employees exposed to the same atmosphere as the welders or burners shall be protected in the same manner as the welder or burner. All welders and welders' helpers are to wear at all times safety-tinted glasses.
4. In confined spaces where welding, cutting or heating metals that contain zinc, lead, cadmium, mercury, chromium, beryllium or covered with preservative coatings or working with inert gas arc welding is taking place, then check with the safety coordinator concerning the recommended safe operating procedures.

II. Arc Welding

A. Welding Equipment

1. Only standard electric arc welding equipment conforming to the requirements of The National Electrical Manufacturers Association and/or the Underwriters Laboratories, Inc. should be used.
2. Power circuits should be installed and maintained in accordance with the National Electrical Code. Check to see what voltage the machine is wired for before connecting
3. Frames of all electric welding machines operated from power circuits should be effectively grounded with No. 8 gauge wire or heavier.

4. Electrode and ground cables should be supported so as not to create obstructions interfering with the safe passage of workers. The ground lead for the welding circuit should be mechanically strong and electrically adequate for the service required.
5. Where it is necessary to couple several lengths of cable for use as a welding circuit, insulated connectors should be used on both the ground and electrode holder lines, if occasional coupling or uncoupling is necessary. For permanent connections, solder and tape splices may be used.
6. An electrode holder of adequate rated current capacity, insulated against shock and shorting or flashing when laid on grounded materials, should be used.
7. Adequate exhaust to the outside should be provided where internal combustion engines are used to operate welding machines in enclosed spaces.
8. All welders should wear combination safety hats and welding hoods.
9. The proper shade of welding lens is required and an adequate supply of cover lenses should be available. Persons assisting operators should also wear protective lenses to avoid “welding flash” burns to the eyes.

B. Manual Electrode Holders
   1. Manual electrode holders shall be capable of safely handling the maximum rated current required by the electrodes being used.
   2. They shall be fully insulated against the maximum voltage encountered to ground.

C. Welding Cables and Connectors
   1. All arc-welding cables shall be of the completely insulated flexible type capable of handling the maximum current requirements of the work in progress. When it becomes necessary to connect or splice lengths of cable one to another, they shall be securely fastened together to give good electrical contact, and the exposed metal parts shall be completely insulated.
   2. Cables in poor repair shall not be used. If a cable becomes damaged to the extent of exposing bare conductors, the portion thus exposed shall be adequately protected or removed from service and tagged “do not use”.

D. Machine Grounding - The frames of all arc-welding machines shall be grounded either through a third wire in the cable containing the circuit conductor or through a separate wire which is grounded at the source of the current.

E. Operating Instructions
   1. When electrode holders are to be left unattended, the electrode shall be removed and the holder shall be so placed or protected that they cannot make electrical contact with employees or conducting objects.
   2. Hot electrode holders shall not be dipped in water.
   3. Any faulty or defective equipment shall be reported to the Supervisor and the use of the equipment shall be discontinued. Repairs may only be made by qualified personnel.
   4. Electrodes shall not be struck against a cylinder to strike an arc.

III. Gas Welding and Cutting

A. Transporting, Moving and Storing Compressed Gas Cylinders

1. All employees must be trained on the proper use, handling and storage of compressed gas cylinders.
2. Oxygen and acetylene cylinders shall be stored (Storage: When not in use for more than 24 hours) upright, secured from movement at least 20 feet from each other and 25 feet from any occupied building or space. “No Smoking” signs will be posted at bottles. Cylinders must be secured at all times in such a way as to avoid them being knocked over or damaged, must be stored in a vertical position, not stored in public hallways, and segregated based upon contents. Cylinders must be protected from damage, corrosion, sunlight and kept away from heat sources in a well ventilated area.
3. All compressed gas cylinders must be labeled and clearly identifiable.
4. Valve protection caps shall be in place and secured when not in use for 2 hours or more.
5. Cylinder valves must be inspected for grease, oil, dirt and solvents.
6. Only tools provided by the supplier may be used to open and close cylinder valves.
7. When cylinders are hoisted, they shall be secured on a cradle, sling, board or pallet. They shall not be hoisted or transported by means of magnets or choker slings.
8. Cylinders shall be moved by tilting and rolling them on their bottom edges or by being placed upright on a cart or dolly. They shall not be intentionally dropped, struck or permitted to strike each other.
9. When cylinders are transported by power vehicles, they all be secured in a vertical position.
10. Valve protection caps shall not be used for lifting cylinders from one vertical position to another.
11. When a cylinder cap cannot be removed by hand, cylinder shall be tagged “Do Not Use” and returned to the designated storage area for return to vendor.
12. Unless cylinders are firmly secured on a special carrier intended for this purpose, regulators shall be removed and calve protection caps put in place before cylinders are moved.
13. A suitable cylinder truck, chain or other steadying device shall be used to keep cylinders from being knocked over while in use.

B. Placing Cylinders

1. Cylinders shall be kept far enough away from the actual welding or cutting operation so that sparks, hot slag or flame will not reach them.
2. Cylinders containing oxygen or acetylene or other fuel gas shall not be taken into confined spaces.

C. Treatment of Cylinders

1. Cylinders, whether full or empty, shall not be used as rollers or supports.
2. Visual inspections will be conducted in order to determine that cylinders are in safe condition.
3. No damaged or defective cylinder shall be used.
4. Stored cylinders will be kept upright and secured to prevent falling on their side. Oxygen and acetylene will be stored a minimum of 20 feet apart. “No Smoking” signs will be placed near the cylinders. Storage of cylinders in a building is prohibited.
5. Storage areas for full and empty cylinders must be designated and labeled. Cylinders should be stored in definitely assigned places away from elevators, stairs, or gangways.

6. Leaking cylinders should be moved to an isolated, well ventilated area, away from ignition sources. Soapy water should be used to detect leaks. If the leak is at the junction of the cylinder valve and cylinder, do not try to repair it. Contact the supplier and ask for response instructions.
7. Cylinders should be marked as “MT” and dated when empty. Never mix gases in a cylinder and only professionals should refill cylinders. Empty cylinders must be handled as carefully as full cylinders.

D. Hose

1. All hose in use carrying acetylene, oxygen or any gas or substance that may ignite or enter into combustion or be in any way harmful to employees shall be inspected at the beginning of each working shift. Defective hose shall be removed from service.
2. Hose which has been subject to or which shows evidence of wear or damage shall be tested to twice the normal pressure to which it is subjected to under normal working loads. Defective hose or hose in doubtful condition shall not be used.
3. Hose coupling shall be of the type that cannot be unlocked or disconnected by means of a straight pull without rotary motion.
4. Boxes used for the storage of gas hose shall be ventilated.
5. Hoses, cables and other equipment shall be kept clear of passage ways, ladders and stairs.

E. Torches (All torches shall be equipped with operational back flow prevention devices)

1. 1. Clogged torch tip openings shall be cleaned with suitable cleaning wires, drills or other devices designed for such purposes.
2. Torches in use shall be inspected at the beginning of each working shift for leading cut-off valves, hose couplings and tip connections. Defective torches shall not be used.
3. Torches shall be lighted by friction lighters or other approved devices and not by matches or cigarette lighters. The use of hot work as a means of lighting torches is not permitted.

F. Regulators and Gauges

1. Oxygen and fuel gas pressure regulators, including their gauges, shall be in proper working order while in use.
2. Regulators and gauges shall be kept free of grease and dirt at all times.
3. Regulators should be inspected for grease, oil,dirt and solvents

G. Chipping, Cleaning and Grinding

1. When removing excess weld metal, faulty weldments, or slag, the welder removes or raises his shield in order to see. The chips flying from the cleaning hammer are dangerous, especially to the eyes. Safety goggles or a protective face shield should be used.
2. Gloves should be worn to protect the hands and wrists. Flying chips are liable to travel a considerable distance. The danger to other personnel in the area may require screening or shielding.
3. Caution workers to chip away from the face.
4. Gloves should be worn when wire brushing weld metal.
5. When cleaning and brushing surfaces to be welded, use caution to avoid metal slivers and sharp edges. Gauntlet gloves are advisable.

Hand and Power Tool Safety

I. General Requirements

A. Guarding

1. When power operated tools are designed to accommodate guards, they shall be equipped with such guards when in use.
2. Belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains, or other reciprocating, rotating, or moving parts or equipment shall be guarded if such parts are exposed to contact by employees or otherwise create a hazard.

B. Personal Protective Equipment - Employees using hand and power tools and exposed to hazards of falling, flying, abrasive, or splashing objects, or to harmful dust, fumes, mist, vapor, or gases shall be provided with the particular approved personal protective equipment necessary to protect them from the hazard.

C. Constant Pressure Switch - All hand-held power tools shall be equipped with a constant pressure switch that will shut off the power when the pressure is released.

D. Prohibited Tools - If a tool is found in improper working order or develops a defect during use, it shall be tagged, locked and immediately removed from service and not used again until properly repaired.

II. Hand Tools

A. Employer shall not issue or permit the use of unsafe hand tools.

B. Wrenches, including adjusting pipe, end, and socket wrenches, shall not be used when jaws are sprung to the point that slippage occurs.

C. Impact tools such as drift pins, wedges, and chisels, shall be kept free of mushroomed heads

D. The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.

III. Power Operated Portable Tools

A. Electric Power Tools

1. Electric power-operated tools shall either be of the approved double insulated type or be grounded through the use of the three-wire system.
2. The use of electrical cords for hoisting or lowering tools shall not be permitted.
3. All electrical extension cords and pigtails will be a three conductor type.

B. Pneumatic Power Tools

1. Pneumatic power tools shall be secured to the hose or whip by some positive means to prevent the tool from becoming accidentally disconnected.
2. Safety clips or retainers shall be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled.
3. Compressed air shall not be used for cleaning purposes except where reduced to less than 30 PSI and then only with effective chip guarding and personal protective equipment. The 30 PSI requirements does not apply for concrete form, mill scale, and similar purposes.

4. The manufacturer's safe operating pressure for hoses, pipes, valves, filters, and other fittings shall not be exceeded.
5. The use of hoses for hoisting or lowering tools shall not be permitted.
6. All hoses exceeding 1/2 inch inside diameter shall have a safety device (excess flow valve) at the source of supply or branch line to reduce pressure in case of hose failure.
7. All fittings will be safety wired to prevent accidental uncoupling.

C. Fuel-Powered Tools
1. All fuel-powered tools shall be stopped while being refueled, serviced, or maintained, and fuels shall be transported, handled, and stored in accordance with the fire prevention.
2. When fuel-powered tools are used in enclosed spaces, the applicable requirements for concentrations of toxic gases and use of personal protective equipment shall apply.

D. Powder-Actuated Tools
1. Only employees who have been trained in the operation of the particular took in use shall be allowed to operate a power-actuated tool. Each employee will carry their training certification card.
2. The tool shall be tested each day before loading to see if safety devices are in proper working condition. The method of testing shall be in accordance with the manufacturer's recommended procedure.
3. If a tool is found in improper working order or develops a defect during use, it shall be immediately removed from service and not used again until properly repaired.
4. Tools shall not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any employees. Hands shall be kept clear of the open barrel end.
5. Use of face shields or goggles is a must for the employee doing the firing of the powder-actuated tool.
6. Loaded tools shall not be left unattended.
7. Driving into materials easily penetrated shall be avoided unless a substance that will prevent the pin or fastener from passing completely through and creating a flying missile hazard on the other side backs such materials.
8. Tools shall not be used in an explosive or flammable atmosphere.
9. All tools will use the correct shield, guard, or attachment recommended by the manufacturer.

IV. Abrasive Wheels and Tools

A. Power - All grinding machines shall be supplied with sufficient power to maintain the spindle speed at safe levels under all conditions or normal operation.

B. Use of Abrasive Wheels
1. Floor stand and bench-mounted abrasive wheels used for external grinding shall be provided with safety guards (protection hoods). The maximum angular exposure of the grinding wheel and sides shall not be more than 90 degrees except that, when work requires contact with the wheel below the horizontal plane of the spindle, the angular exposure shall not exceed 125 degrees. In either case, the exposure shall begin not more than 65 degrees above the horizontal plane of the spindle. Safety guards shall be strong enough to withstand the effect of a bursting wheel.

2. Floor and bench-mounted grinders shall be provided with work rests that are rigidly supported and rigidly adjustable. Such work rests shall be kept at a distance not to exceed 1/8 inch from the surface of the wheel.
3. Cup-type abrasive wheels used for external grinding shall be protected by either a revolving cup guard or a band-type guard. All other portable abrasive wheels used for external grinding shall be provided with safety guards (protecting hoods).
4. The maximum angular exposure of the portable grinding wheel and sides shall not exceed 180 degrees.
5. All abrasive wheels shall be closely inspected before mounting to insure that they are free from cracks or defects.
6. Grinding wheels shall fit freely on the spindle and shall not be forced on. The spindle nut shall be tightened only enough to hold the wheel in place.
7. All employees using abrasive wheels, whether portable, bench, or floor-mounted, shall be protected by approved eye and face protection equipment.

V. Woodworking Tools

A. All fixed, electrically powered woodworking tools shall be provided with a disconnect switch that can be locked and tagged in the “off” position.

B. All portable, power-driven circular saws shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts. The lower guards shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to the covering position.

VI. Woodworking Machinery

A. Machine Construction

1. Each machine shall be so constructed as to be free from easily detected vibration when the largest size tool is mounted and run idle at full speed.
2. Arbors and mandrills shall be constructed so as to have firm and secure bearing and be free from play.
3. Circular saw fences shall be so constructed that they can be firmly secured to the table or table assembly without changing their alignment with the saw. For saws with tilting tables or tilting arbors, the fence shall be so constructed that it will remain in a line parallel with the saw, regardless of the angle of the saw with the table.
4. Circular saw gauges shall be so constructed as to slide in grooves or tracks that are accurately machined, to insure exact alignment with the saw for all positions for the guide.
5. Hinged saw tables shall be so constructed that the table can be firmly secured in any position and in true alignment with the saw.
6. All belts, pulleys, gears, shafts, and moving parts shall be guarded.
7. It is recommended that each power-driven woodworking machine be provided with a disconnect switch that can be locked in the off position.

8. For all circular saws where there is a possibility of contact with the blade, either beneath or behind the table, that portion shall be covered by an exhaust hood or a guard that shall be so arranged as to prevent accidental contact with the saw.
9. No saw, cutter head, or tool collar shall be placed or mounted on a machine arbor unless the tool has been accurately machined to size and shape.

B. Machine Controls and Equipment

1. On each machine operated by electric motors, positive means shall be provided for rendering such controls or devices in inoperable while repairs or adjustments are being made to the machines they control.
2. Each operating treadle shall be protected against unexpected or accidental tripping.
3. Feeder attachments shall have the feed rolls or other movable parts so covered or guarded as to protect the operator from hazardous points.

C. Radial Arm Saws

1. The upper hood shall completely enclose the upper portion of the blade to a point that will include the end of the saw arbor. The upper hood shall be constructed in such a manner and of such materials that it will capture the splinters, broken saw teeth, etc., and will deflect sawdust away from the operator. The lower exposed portion of the blade shall be guarded to the full diameter of the blade by a device that will automatically adjust itself to the thickness of the stock and remain in contact with stock being cut to give maximum protection for the operator.
2. Each radial saw used for ripping shall be provided with non-kickback fingers or dogs located on both sides of the saw so as to oppose the thrust or tendency of the saw to pick up the material or to throw it back toward the operator. They shall be designed to provide adequate holding power for every thickness of material being cut.
3. An adjustable stop shall be provided to prevent the forward travel of the blade beyond the position necessary to complete the cut in repetitive operations.
4. Installation shall be in such a manner that the front end of the unit will be slightly higher than the rear so as to cause the cutting head to return gently to the starting position by the operator.
5. Ripping and plowing shall be against the direction in which the saw turns. The direction of the saw rotation shall be conspicuously marked on the hood. In addition, a permanent label not less than 1 1/2 inches by 3/4 inches shall be affixed to the rear of the guard at approximately the level of the arbor reading as follows: “DANGER - DO NOT RIP OR PLOW FROM THIS END.” The label should be colored standard danger red.

D. Inspection and Maintenance of Woodworking Machinery

1. Dull, badly set, improperly filed, or improperly tensioned saws shall be immediately removed from service before they begin to cause the material to stick, jam, or kickback when it is fed to the saw at normal speed. Saws to which gum has adhered on the sides shall be immediately cleaned.
2. All knives and cutting heads of woodworking machines shall be kept sharp, properly adjusted, and firmly secured. Where two or more knives are used in one head, they shall be properly balanced.

3. Bearings shall be kept free from lost motion and shall be well lubricated.
4. Arbors of all circular saws shall be free from play.
5. Only persons of demonstrated skill in this kind of work shall do sharpening or tensioning of saw blades or cutters.
6. Emphasis is placed upon the importance of maintaining cleanliness around woodworking machinery, particularly as regards the effective functioning of guards and the prevention of fire hazards in switch enclosures, bearings, and motors.
7. All cracked saws shall be removed from service.
8. The practice of inserting wedges between the saw disk and the collar to form what is commonly known as a “Wobble Saw” shall not be permitted.
9. Push sticks or push blocks shall be provided at the work place in the several sizes and types suitable for the work to be done.

VII. Jacks Lever, Ratchet, Screw and Hydraulic

A. General Requirements
   1. The manufacturer’s rated capacity shall be legibly marked on all jacks and shall not be exceeded.
   2. All jacks shall have a positive stop to prevent over travel.

B. Lift Slab Construction
   1. Hydraulic jacks used in lift slab construction shall have a safety device which will cause the jacks to support the load in any position in the event the jack malfunctions.
   2. If lift slabs are automatically controlled, a device shall be installed which will stop the operation when the 1/2 inch leveling tolerance is exceeded.
   3. Jacking of heavy equipment such as generators, boilers, etc. will be handled in the same manner as lift slab construction.

C. Blocking - When it is necessary to provide a firm foundation, the base of the jack shall be blocked or cribbed. Where there is a possibility of slippage of the metal cap of the jack, a wood block shall be placed between the cap and the load.

VIII. Lasers (***See Section 15-26***)

Fall Protection

I. General

Any worker that is exposed to a fall hazard of 6 feet or more will be provided with a means of fall protection. Wherever protection is required the workers will be protected from falling by use of one of the following systems, guardrails, safety nets or a personal fall arrest system. Each project supervisor will be required to determine if the walking and working surfaces have the strength and structural integrity to support their workers safely. A site-specific plan will be prepared by a qualified person and developed to meet the needs of the site. In the event of a fall or near miss please follow the proper accident and investigation procedures (***See Section 12***).

II. Buildings and Other Similar Structures

A. Unprotected Sides, and Leading Edges

1. Where a structure has unprotected sides, edges or leading edges and has a fall hazard of 6 feet or more above a lower level, employees shall be protected from falling by use of guardrail systems, safety net systems or personal fall arrest systems.
2. All workers, whether engaged or not in the leading edge work, shall be protected from falling by a guardrail system, safety net system or personal fall arrest system. Controlled access zones are not an acceptable fall protection measure for the employees of BHB.

B. Open Holes

1. On any open hole, including skylights, where a 6-foot or more fall exists above a lower level and a worker can walk or work near it, it shall be protected by a guardrail system, safety net system, or personal fall arrest system erected around such holes.
2. Workers shall be protected from open holes by covers. These covers will be prominently color coded or labeled as to warn workers of such holes.
3. Workers will be protected from falling objects through holes by covers.
4. Open holes are defined to be openings that are 2 inches or greater in size in any dimension.

C. Wall Openings - When working on, at, above or near wall openings (including those with chutes attached) where the bottom of the wall opening is at least 6 feet above the adjacent exterior level, and less than 39 inches above the interior surface, workers shall be protected from falling by a guardrail system, safety net system, or personal fall arrest system.

D. Hoist Areas - A guardrail system, gate, or chain is required where a hoisting operation is in place for landing materials. If the guardrail system, gate, or chain is removed to facilitate the landing of materials and the worker must lean through the access opening or out over the edge of the access opening, that worker shall be protected by a personal fall arrest system.

1. In hoisting areas, the guardrail system, chain, gate or removable guardrail sections shall be placed across the access opening when hoisting operations are not taking place.
2. All personal restraint systems used in hoist areas will be rigged to allow the worker to approach, but not quite reach the unprotected edge.

E. Ramps, Runways, And Other Walkways

1. A guardrail system will be installed along each unprotected side or edge on ramps, runways and other walkways where a 6 foot or more fall hazard exists.
2. The guardrail system will be built in accordance to the guardrail system in this section.

F. Form Work And Reinforcing Steel Operations - Where personnel are working on the face of concrete form work or reinforcing steel, they shall utilize one or more of the following systems where a 6 foot or more fall hazard exists; a personal fall arrest system, safety net system, or positioning device system.

G. Dangerous Equipment

1. Where a worker is less than 6 feet above operating equipment, a guardrail system or a fall restraint system shall protect the worker.
2. If workers are working 6 feet or more above dangerous equipment, they shall be protected from the fall hazard by a guardrail system, fall restraint system, safety net system, or personal fall arrest system (with a short lanyard).

H. Walking/Working Surfaces Not Otherwise Addressed - For walking or working surfaces not otherwise addressed, where a 6-foot or more fall hazard exists, the workers will be protected from falling by use of a guardrail system, safety net system or personal fall arrest system.

III. Excavations

A. On the edge of excavations where a 6-foot or more fall exists, workers will be protected from falling by guardrail systems, fences, or barricades.

B. At all wells, pits, shafts, and similar excavations that are 6 feet or more in depth, workers shall be protected from falling into or onto the dangerous equipment by guardrail systems, fences, barricades or covers.

IV. Roofing Work

A. Steep Roofs - Personnel working in roofing activities on steep sloped roofs with unprotected sides and edges, 6 feet or more above lower levels, shall be protected from falling by a guardrail system with toe boards, safety net system, or personal fall arrest system.

B. Low Sloped Roofs - Personnel working in roofing activities on low sloped roofs with unprotected sides and edges, 6 feet or more above lower levels, shall be protected from falling by a guardrail system, safety net system or personal fall arrest system.

V. Protection From Falling Objects

Several methods can be used for protection from falling objects. They are toe boards, screens, guardrail systems and canopies. When these methods are incorporated, they should be installed such that they will keep potential fall objects far enough from the edge of the higher level so that these objects would not go over any edge if displaced.

A. Toe boards shall be erected along the edge of the overhead walking or working surface for the distance sufficient to protect workers below, when used as falling object protection.

B. These toe boards will be capable of withstanding a force of 50 pounds applied in any downward or outward direction at any point along the toe board.

C. Toe boards will be a minimum of 3 1/2 inches tall. They shall not be placed more than 1/4 inch above the deck surface. They will be solid or not have any opening over 1 inch in height.

D. Where tools and equipment are piled higher than the toe board, paneling or screening shall be erected from the deck surface or toe board, to the top of the guardrail system top rail or midrail for a horizontal distance sufficient to protect the workers below.

E. Where the guardrail system is used for falling object protection, openings will be small enough to prevent passage of potential falling objects.

F. When overhand bricklaying or related work is performed, no materials or equipment except masonry materials or mortar shall be stored within 4 feet of the working edge. Excess mortar, broken or scattered masonry units and all other materials and debris shall be kept clear from the work area through removal at regular intervals.

G. On roofing work, materials and equipment shall not be stored within 6 feet of the roof edge unless guardrails are erected at the edge. Materials that are piled, grouped or stacked near a roof edge will be stable and self-supporting.

H. Canopies, when used as falling object protection, will be strong enough to prevent collapse and prevent penetration by any objects that may fall onto the canopy.

VI. Fall Protection Systems

A. Guardrail systems - Guardrail systems must have the following components and provisions:

1. The top edge height of top rails or equivalent guardrail system members shall be 42 inches, plus or minus 3 inches, above the walking or working level. There may exist conditions that will require the height of the top rail edge to exceed the 45 inch height. This will be acceptable providing the top rail provides fall protection. For example, when workers are working on stilts near a fall hazard of 6 feet or more. Another example is when personnel are working on a panned deck at a height where the men are not protected by the 42 inch top rail requirement. In these cases, the guardrails should be installed as normally required plus an additional top rail should be installed such that it will provide protection for personnel at the higher level. In all cases, the gap between rails should be no more than 21 inches.
2. Midrails, screens, mesh, intermediate vertical members or equivalent intermediate structural members shall be installed between the top edge of the guardrail system and the walking or opening surface when there is no wall or parapet wall of at least 21 inches high.
3. Midrails, when used, shall be installed at a height midway between the top edge of the top rail and the walking working level.
4. Screens and mesh, when used, shall extend from the top rail to the walking or working level and along the entire opening between top rail vertical supports.
5. Intermediate vertical members when used between posts, shall be not more than 19 inches apart. If other structural members are used, they shall not have any openings larger than 19 inches.
6. The guardrail system shall 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.
7. The top guardrail edge shall not deflect below a height of 39 inches above the walking or working level.
8. Midrails, screens, mesh, intermediate vertical members, solid panels and equivalent structural members shall 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 midrail or other member.
9. All surfaces of the guardrail system shall be smooth such that workers are protected from lacerations punctures or other injury plus snagging of clothing.
10. The ends of top rails and midrails shall not overhang the terminal posts unless the overhang does not constitute a projection hazard.
11. Steel or plastic banding will not be acceptable for use on a guardrail system.

12. If wire rope is used for top rails and midrails, it will be at least 1/4 inch in diameter and not have any defects that could cause punctures or lacerations. The top wire rope rail will be flagged every 6 feet (maximum) with high visibility material.
13. Where openings in the guardrail system are used for passage of materials, the opening shall not have more than 2 sides provided with removable guardrail sections. When the opening is not in use, it shall be closed with a cover, or a guardrail system shall be provided along all unprotected sides or edges.
14. Where points of access are at openings, such as at ladder ways, they shall be provided with a gate or be so offset that a person cannot walk directly into the access opening.
15. Guardrail systems used on ramps shall be erected along all unprotected sides or edges.
16. Manila, plastic or synthetic rope, though allowed under OSHA standards, will NOT be acceptable under this safety policy. Under certain circumstances, these materials may be utilized providing BHB's Safety Department has provided written approval.
17. Personal fall arrest systems shall not be attached to any guardrail system or to any hoist.

B. Safety Net Systems - Safety net systems shall meet the following requirements:

1. All nets will be installed as close as practical under the working surface on which the workers are working, but in no case will the net be more than 30 feet below such level. Nets will be unobstructed at all times.
2. Nets will extend outward from the outermost projection of the working surface as follows:

Vertical Distance From Working Level to Horizontal Plane of Net	**Min. Distance Horizontally From Edge of Working Surface to Outer Edge of Net**
Up To 5 Feet	8 Feet
More Than 5 Feet Up To 10 Feet	10 Feet
More Than 10 Feet	13 Feet

3. Nets shall be installed such that there is sufficient clearance under them to prevent contact with the surface below when subjected to an impact force equal to the drop test.
4. Nets and their installation components shall be capable of absorbing an impact force equal to that produced by the drop test listed below.
5. All safety nets and their installations will be drop tested after initial installations and before being used as a fall protection system. Also these nets will be tested whenever relocated, after any major repair and at 6 month intervals if left in one location.
6. The drop test shall consist of dropping a 400 pound bag of sand, that is 30 (+/-2 inches) in diameter, into the net from the highest walking or working surface where the workers are exposed to a fall hazard but not from less than 42 inches above that level. If the drop test is unfeasible or unreasonable to perform, the safety officer along with the project superintendent will certify that the net and its installation is in compliance with the provisions of the OSHA standards. A certification record must be kept and will include the identification of the net, the installation and the date it was determined that it was in compliance along with signatures of the safety officer and superintendent. This certification will be kept on the project site at all times and a copy will be available with the safety coordinator.
7. Defective nets will not be used and replaced with new units.

8. All safety nets are to be inspected at least once a week for wear, damage, and other deterioration. Any defects will be removed from service. All nets will be inspected after any occurrence that could affect the integrity of the safety net system.
9. Materials, scrap pieces, equipment, and tools which have fallen into the nets will be removed as soon as possible from the net and at least before the next work shift.
10. The maximum size of each net mesh opening shall not exceed 36 square inches nor be longer than 6 inches on any side, and the opening measured center to center of mesh ropes of webbing, shall not be longer than 6 inches. All mesh crossings shall be secured to prevent enlargement of the mesh opening.
11. The border of the netting shall have a border rope with a minimum breaking strength of 5000 pounds.
12. Connections shall be as strong as the integral net components and not be spaced more than 6 inches apart.

C. Covers

1. Any covers located in roadways and vehicular aisles shall be capable of supporting at least twice the maximum axle load of the largest vehicle expected to cross over the cover without structurally failing.
2. All other covers shall be capable of supporting at least twice the maximum weight of workers, equipment and materials expected to cross over the cover without structurally failing.
3. All covers will be secured when installed as to prevent accidental displacement by wind, equipment or workers. These covers will be color coded or marked with the word “HOLE” or “COVER” to provide a warning of the hazard. Cast iron manhole covers or steel grates used in streets and roadways will be exempt of the marking requirements.

VII. Personal Fall Arrest Systems

A. Body Belts and Harnesses

1. Body Belts - will not be allowed except for positioning situations. Since January 1998, body belts have not been allowed for fall arrest.
2. Full Body Harnesses - Workers will attach their lanyards to the body harness, located in the center of the wearer’s back near the head or the shoulder level. For positioning situations where a maximum of 24 inches of fall can occur, the workers can use the two D-rings on the belt portion of the harness. Use of a positioning chain or cable harness will be utilized for this type of operation provided they meet the OSHA standard.
3. Lanyards will be such that they incorporate a braking device as outlined in the lanyard portion of this section.
4. Body harnesses and any other components of the fall arrest system will not be used for hoisting materials.

B. Connectors, D-rings, and Snap Hooks - Connectors shall be drop-forged, pressed or formed steel. They shall have corrosion resistant finishes, and all surfaces and edges shall be smooth. D-rings and snap hooks shall be of a minimum tensile strength of 5000 pounds. D-rings and snap hooks will be proof tested to a minimum tensile load of 3600 pounds without cracking, breaking or deformation. Snap hooks shall be double locking type to prevent disengagement (roll out).

C. Lifelines and Lanyards

1. Lanyards and lifelines shall be of a minimum breaking strength of 5000 pounds.
2. Horizontal lifelines will be designed, installed and used under the supervision of a qualified person and the system will maintain a safety factor of at least two.
3. Where vertical lifelines are provided, each person will have their own separate lifeline.
4. In elevator shafts, two workers may be attached to the same lifeline provided both are working atop a false car that is equipped with guardrails, the strength of the lifeline is 10,000 pounds and all other required criteria on the lifelines have been met.
5. Lifelines will be protected against being cut or abraded.
6. Self-retracting lifelines and lanyards which automatically limit free fall distance to 24 inches or less will sustain a minimum tensile load of 3000 pounds applied to the device with the device in a fully extended position. Mounting hardware will also meet these requirements.
7. Non self-retracting lifelines, will have the provision of rip-stitch or tearing and deforming and be able to sustain a minimum tensile load of 5000 pounds in the fully extended position.
8. Rope lanyards and web type straps, lifelines and components of body belts and harnesses shall be made from synthetic fibers.

D. Anchorages - Anchorages for attachment of personal fall arrest equipment will be independent of any anchorage being used to support or suspend platforms. They will be capable of supporting at least 5000 pounds per worker attached or have a safety factor of two. The system will always be under the supervision of a qualified person.

E. Falling Forces and Distances

1. The limit of maximum arresting force on an individual will be 900 pounds when using a body belt, and 1800 pounds when using a body harness. The system will be rigged such that the free fall distance will not exceed 6 feet or contact any lower level. It will also bring the individual to a complete stop and limit the deceleration distance to a travel distance of 42 inches and be of sufficient strength of twice the potential impact energy of free falling a distance of 6 feet or the distance permitted by the system whichever is less. The system will need to be re-evaluated for compliance with personnel over 310 pounds combined body weight and tools. The safety officer and coordinator should be consulted in this application.
2. Systems that have been subjected to a impact loading will be removed from service and not used until inspected and determined by a competent person that the system is undamaged and suitable for re-use.
3. The project superintendent will make provisions for prompt rescue of a fallen worker unless the individual can complete a self-rescue procedure. A rescue plan will need to be developed on all situations where rescue may be deemed necessary. Subcontractors will be responsible for their workers' rescue plan and submit a copy of that plan to the safety Coordinator. A copy will be kept on the project site as well. Failure to submit will cause the subcontractor to stop work until the submittal is completed.

F. Inspection of Personal Fall Arrest Systems

1. Personal fall arrest systems will be inspected before each use by the wearer and all defective or worn components shall be removed from service.
2. Personal fall arrest systems shall not be attached to a guardrail system or hoist.

VIII. Fall Restraint Systems

A. Positioning devices will be rigged such that the free fall distance will be 24 inches maximum.

B. The system will be secured to an anchorage capable of supporting at least twice the potential impact load of the worker's fall or 3000 pounds whichever is greater.

C. Connectors, D-rings, and snap hooks will meet the requirements as mentioned in the section on personal fall arrest systems.

D. These systems will be inspected as mentioned in the section on personal fall arrest systems.

E. These systems will not be used to hoist materials.

IX. Training and Retraining Program

A. The training program will be designed for all workers who might be exposed to fall hazards. The program will train each worker on how to recognize the hazards involved and procedures to be followed to minimize the hazards.

B. Training will cover the following areas:

1. The nature of fall hazards.
2. The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.
3. The use and operation of guardrail systems, personal fall arrest systems, safety monitoring systems controlled access zones, and other protection to be used.
4. The role of the worker in the safety monitoring system when this system is used.
5. The limitations on the use of mechanical equipment during the performance of roofing work on low sloped roofs.
6. The correct procedures for handling and storage of equipment and materials and erection of overhead protection.
7. The role of workers in fall protection plans.
8. The OSHA standard for fall protection.

C. Certification of training

1. A written record will be made to include the workers' name and social security number, date of training, and the signature of the worker and instructor.
2. Training records will be maintained by the safety coordinator.

D. Retraining Will Be Done When:

1. Deemed necessary by the safety department or project superintendent.
2. Changes occur in the workplace where the previous training is obsolete.
3. Changes are made in the type of fall protection system or equipment being used.
4. Inadequacies in workers' knowledge are uncovered and when non-compliant activities are observed.

Ladders, Stairs and Ramps

I. General Requirements

Ladders present one of the major hazards in construction work and their improper use is the cause of many serious accidents. An analysis of accidents involving ladders revealed that the four principle causes of such accidents are:

A. Ascending or descending improperly

B. Failure to secure the ladder at the top or bottom

C. Structural failure of the ladder itself

D. Carrying objects while ascending or descending

II. Stock Ladders

All ladders shall be used in accordance with the manufacturers' recommendations and meet OSHA/ ANSI specifications. (**Metallic ladders shall not be permitted on a BHB's job sites.**)

A. Inspection and Testing - All ladders shall be inspected frequently for damage and deterioration. All parts should be checked for wear, corrosion, and structural failure. Ladders found to be defective shall be tagged "Do Not Use". If a ladder is damaged beyond repair, it shall be removed from the job site and destroyed.

B. Maintenance

1. Ladders shall be stored and transported in a manner that prevents damage and unauthorized use.
2. Ladders shall be inspected by a competent person for visible defects on a periodic basis and after any occurrence that could affect their safe use.
3. Any damage to a ladder that is repairable shall be performed at the earliest possible time to prevent unsafe use.
4. When not in use, all ladders should be stored under suitable cover protected from the weather. Ladders stored horizontally should be supported at both ends and at an intermediate point to prevent sagging of the midsection.

C. Job Site Use

1. Ladder feet should be placed on a substantial, level base and the vicinity of the legs should be kept clear of debris and should afford a non-skid surface. Both the top and the bottom of the ladder should be secured to prevent displacement.
2. Ladders shall be used only for the purpose for which they were designed.
3. Ladders leading to landings or walkways should extend at least 3 feet above the landing and be securely fastened. The front of the ladder should be placed approximately 1/4 of its supported length away from the vertical plane of its top support. No employee shall attempt to carry anything while ascending or descending a ladder, three point contact shall be maintained while climbing. Side reach from a ladder should be kept to a minimum and shall not permit the belt buckle to pass the ladder uprights. Try to pick an area out of normal traffic pattern to erect ladders to decrease the hazard of their being accidentally displaced.
4. Do not use ladder for skids, braces, workbenches, scaffold plank supports or any purpose other than climbing.

5. If it is necessary to place a ladder in or over a doorway, barricade the door and post warning signs.
6. Ladder rungs, cleats, and steps shall be parallel, level, and uniformly spaced when the ladder is in position for use.
7. Keep both feet on the ladder rungs. Do not reach out too far, or place one foot on a line or piece of equipment. Change the position of the ladder as often as necessary.
8. Always face a ladder when working from it. Only one man on a ladder at all times unless the ladder is designed for use by two persons
9. Ladders shall not be used on scaffolds without written authority from BHB.
10. Except where either permanent or temporary stairways or suitable ramps or runways are provided, ladders shall be used to give safe access to all elevations.
11. Ladders shall not be loaded beyond the maximum intended load for which they were built, nor beyond their manufacturer's rated capacity.

D. Straight and Extension Ladders
   1. Place the ladder so the distance at the bottom footing is 1/4 the vertical distance in height.
   2. Ladders must be equipped with tie-off rope and non-skid safety feet.
   3. Ladders must be adequately tied off at top and bottom except on single inspection climb.
   4. The top of the ladder must extend at least 3 feet beyond supporting object when used as access to an elevated work area.
   5. After the extension section has been raised to desired height, check to see that safety dogs or latches are engaged and extension rope is secured to a rung on the base section of ladder.
   6. Extension ladders must be overlapped a minimum of 3 rungs.
   7. Do not take extension ladders apart to use either section separately.

E. Stepladders
   1. Always open, set level on all four feet, and lock spreaders in place. Do not use a stepladder like a straight ladder.
   2. Never stand on the uppermost platform or top rung of a stepladder.
   3. Do not place tools or material on rungs or platform.
   4. Must be tied off under certain conditions.

III. Job Built Ladders

A. Job made ladders shall be constructed for intended use. If a ladder is to provide the only means of access or exit from a working area for 25 or more employees, or simultaneous two way traffic is expected, a double cleat ladder shall be installed.

B. Double cleat ladders shall not exceed 24 feet in length.

C. Single cleat ladders shall not exceed 24 feet in length between supports (base and top landing). If ladders are to connect different landings, or if the length required exceed this maximum length, two or more separate ladders shall be used, offset with a platform between each ladder. Guardrails and toe boards shall be erected on the exposed sides of the platforms.

D. The width of single cleat ladders shall be at least 16 inches, but not more than 20 inches, between rails.

E. Side rails shall be parallel or flared top to bottom by not more than 1/4 inch for each 2 feet of length.

F. Wood side rails of ladders having cleats shall be not less than 1 1/2 inches thick and 3 1/2 inches deep (2 inches by 4 inches minimal) when made of Douglas Fir.

G. It is preferable that side rails be continuous. If splicing is necessary to attain the required length, however, the splice must develop the full strength of a continuous side rail of the same length.

H. 2 inch by 4 inch lumber shall be used for side rails of single cleat ladders up to 16 feet long; 2 inch by 6 inch lumber shall be used for single cleat ladders from 16 to 30 feet in length.

I. 2 inch by 4 inch lumber shall be used for side and middle rails of double cleat ladders up to 12 feet in length; 2 inch by 6 inch lumber for double cleat ladders from 12 to 24 feet in length.

J. Cleats shall be inset into the edges of the side rails one half inch, or filler blocks shall be used on the rails between the cleats. The cleats shall be secured to each rail with three 10d common wire nails or other fasteners of equivalent strength. Cleats shall be uniformly spaced, 12 inches top to top.

IV. Stairways

A. Stairways or ladders shall be provided at all personnel access points where there is a break in elevation of 19 inches or more and no ramp, runway or sloped embankment is provided.

B. Employees will not be allowed to use any stairway on which construction work is being performed

C. Stairs or ladders will be kept clear for access at all times.

D. All stairs or ladder access areas will be provided with fall protection systems such as handrails or guardrails as required.

E. Stairways that are not a permanent part of the structure on which construction is being performed shall have landing not less than 30 inches in the direction of travel and extend at least 22 inches in width at every 12 feet or less of vertical rise.

F. Riser height and tread depth shall be uniform within each flight of stairs. Variations will not exceed 1/4 inch in any stairway system.

G. Where doors or gates open directly on a stairway, a platform shall be provided. The swing of the door shall not reduce the effective width of the platform to less than 20 inches.

H. Metal pan landings and pan treads shall be secured in place before filling with concrete or other materials.

I. All parts of stairways shall be free of hazardous projections. Slippery conditions shall be eliminated before the stairways are used. The stair rail/handrail system shall be surfaced as to prevent injury or snagging of employee clothing.

J. Except during construction on metal pan stairways, foot traffic will be prohibited until the treads and/or landings are filled completely with concrete, wood or other solid material at least to the top edge of each pan and shall be full width and depth of the stair.

K. Stairs having 4 or more risers or rising more than 30 inches shall be equipped with one handrail and on stair rail system along each unprotected side or edge.

L. Winding or spiral stairways shall be equipped with a stair railing not less than 36 inches in height from the tread nosing to the top of the stair rail.

M. Mid-rails, screens, or mesh shall be provided between the top rail and the stair steps.

N. Mid-rails, when used, shall be located at a height midway between the stair rail and the tread.

O. Screens or mesh, when used, shall be installed from the top rail to the stair step.

P. Handrails and the top rails of the stair rail system shall be capable of holding a force of 200 pounds applied in any downward or outward direction.

Q. The height of the handrail shall not be more than 37 inches or less than 36 inches from the top surface of the handrail to the nose on the tread.

R. Handrails will be set at a minimum clearance of 3 inches between the handrail and the wall face.

S. All unprotected sides and edges of stairway landings will be provided with a guardrail system.

V. Ramps

A. Earth ramps - Ramps constructed of earth shall be compacted enough to allow expected loads to travel safely on the ramp surface. The slope shall be no steeper than 1 foot of height for every 1 1/2 feet of horizontal length.

B. Job Built (Wood) Ramps - Wood ramps must be a minimum of 22 inches wide for each direction of travel. If more than 10 workers need regular access to an area, the ramp shall be at least 44 inches wide with a third stringer in the middle. Surface ramps with either 3/4 plywood or lumber that is at least 2 inches thick. Ramps shall be constructed of 2x8 stringers for up to 12 feet of length and 2x10 stringers for up to 20 feet of length. Splices should be made at 1/3 points along the stringer length, and must overlap butted ends by at least 3 feet in each direction. For sloped ramps up to 6 degrees, surface of ramp does not require any non-skid materials. For slopes between 6 degrees and 15 degrees, the surface must be coated with non-skid material or have wood lath strips placed across the surface at 12 inch intervals. Wood ramps must have guardrails along each open side if the fall distance to surfaces below is greater than 4 feet. Daily inspection of guardrails is required.

Scaffolding

I. General

Before climbing on a scaffold, inspect visually to determine that:

A. Handrails, mid-rails, toe boards, and platform decking are in place.

B. All wheels are locked on rolling scaffolds.

C. A proper ladder is set for safe climbing.

II. Requirements

A. All personnel who will be performing work on a scaffold must be trained by a person qualified in the subject matter to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. Retraining will take place if:

1. An employee has not been previously trained on new hazards that present itself.
2. Changes occur in the type of scaffold used, fall protection used, falling object protection, or other equipment presents a hazard.
3. An employee shows inadequacies, lack of skill or understanding after initial training.

B. All personnel who are involved in erecting, dismantling, moving, operating, repairing, maintaining and/or inspecting a scaffold must be trained by a competent person to recognize any hazards associated with the work in question.

C. Personnel must wear fall arrest or fall restraint on any scaffold platform; not equipped with standard handrails, mid-rails, or complete deck.

D. Neither change nor remove scaffold members unless authorized.

E. No one is allowed to ride on a rolling scaffold when it is being moved. Remove or secure all tools and material on the deck before moving.

F. When scaffold platforms are more than 2 feet above or below a point of access, portable ladders, hook-on ladders, attachable ladders, stair towers (scaffold stairways/towers), stairway-type ladders (such as ladder stands), ramps, walkways, integral prefabricated scaffold access, or direct access from another scaffold, structure, personnel hoist, or similar surface shall be used.

G. Do not climb on, work from, or use as an access point any scaffold handrail, mid-rail or cross brace member. Use one of the ingress/egress options mentioned above in ***requirement F*** to access the scaffold.

H. All scaffolds shall be erected according to the manufacturers recommendations', level and plum, with base plates on a firm foundation under the supervision of a competent person.

I. Scaffolds must be tied off or stabilized with out riggers when the height is more than four times the smaller base dimension. Scaffolds must also be tied off horizontally every 30 feet, and vertically every 26 feet.

J. When space permits, all scaffold platforms more than 10 feet above the ground or floor must be equipped with standard 42 inch high top rails rigidly secured (not wired), standard 21 inch high mid-rails, 4 inch high toe boards completely decked with safety plank or manufactured scaffold decking and rigidly secured toe boards, on all four sides.

K. Adjusting or leveling screws shall not be used on scaffolds equipped with wheels. Adjusting screws shall not be extended more than 12 inches of thread.

L. Be sure you know the safe working loads on all scaffolds. Rolling scaffolds shall be used only on level, smooth surfaces, or the wheels must be contained in wooden or channel iron runners. Watch for overhead clearance when moving. Casters must be pinned.

M. Do not alter any scaffold member by welding, burning, and cutting, drilling or bending.

N. Scaffolds must be kept clean and debris shall not be allowed to accumulate on the platform.

O. Do not stack brick, tile, block or similar material higher than 24 inches high on the scaffold deck.

P. Do not rig from scaffold handrails, mid-rails, or braces.

Q. Where persons are required to work or pass under or next to a scaffold, wire mesh shall be installed between the toe board and the guardrail, extending along the entire opening, consisting of No.18 gauge U.S. Standard Wire 1/2 inch mesh or the equivalent.

R. A competent person must properly tag scaffolds that have been deemed unsafe, defective or damaged until corrections can made or the equipment is removed from service.

S. Patented Metal Scaffolding - Generally, parts and sections of scaffolding made by one manufacturer are not to be used with another manufacturer's.

T. Suspended Scaffolding

1. Swinging stages, toothpicks, boatswain ("bos'n") chairs, float, and needle beams require special approval prior to use.
2. Attach and secure safety belts before stepping on these scaffolds and do not remove until clear of the scaffold. Tie off to independent lifelines. One lifeline per man.

U. Decking

1. For wood type decking only planks of 2 inch scaffold grade lumber or laminated wood is allowed on scaffolds.
2. For manufactured type decking, manufactured aluminum planks are to be used on scaffolds.

Aerial Lift Platforms

I. General Requirements

There are two kinds of aerial lift platforms. The most common type allows a worker to rise straight upward from the ground (scissors lift). The other type allows a worker to reach places off the ground that are not directly above the equipment base (articulating boom lifts).

A. No worker shall be allowed to enter and operate any type of lift until training for that particular kind of equipment has been successfully completed. Records of training must be maintained and retraining shall occur annually.

B. Equipment must maintain a distance of 10 feet from all electrical lines.

C. All lifts have a weight capacity limit and number of occupants limit. Do not exceed either of them.

D. Lifts must have a working backup alarm that is audible above the surrounding noise. If the lift does not have a backup alarm, is not audible, or the alarm is broken then a spotter must be used when backing.

E. Any and all necessary modifications to the equipment may only be made with prior written approval from the manufacturer.

F. All employees must stand securely on the floor of the basket at all times.

G. Climbing on the rails or edge of the basket is not allowed.

II. Scissor Lifts

Unless the manufacturer provides an “anchor point” (normally a “hog ring” in the floor of the platform), fall protection is provided by the guardrail system that surrounds the platform. If an anchor point is provided inside the platform area, the operator’s manual will describe the conditions that must be met to complete the fall protection requirements for normal operation. Before the platform is raised, the gate across the entry point must be closed and secured. This gate may be a hinged door frame or a chain. Platforms should be lowered to within 5 feet of the ground before driving the unit to another location. If the unit is to be driven over hole covers, a worker should be stationed on the ground to watch for deflection as the wheels pass over the cover.

III. Articulating Lifts

These lifts are manufactured in several designs and are known by many names (JLG, Knuckle Boom, Snorkel Lift, etc.). All of them are equipped with an anchor point inside the platform area. All of them require the operator to be secured to the anchor point using a full body harness and lanyard before raising the platform or driving the unit. Lanyards should be short enough to keep operators from being thrown out of reach of the guardrail if a springing movement should throw them from the platform. Platforms are to be lowered to within 5 feet of the ground, not extended and facing over the front of the motor base when driving the unit to a work location. Driving over uneven ground requires extra caution; normally a ground man should walk alongside to spot any potholes.

IV. Inspections

Initial inspections are to be completed by qualified persons (this may be an agent of a rental company) prior to placing the equipment into service on a project. Daily inspections are to be completed by the operator prior to each use. If deficiencies are found, the equipment must be tagged “out of service” until repairs are completed.

Demolition Safety

I. General Requirements

Demolition work falls into three categories. The most dangerous involves the use of explosives. Moderately hazardous demolition involves the use of mechanical equipment. The most common demolition work involves people with hand tools, and is as hazardous as demolition that involves mechanical equipment. Each type of demolition requires planning and training.

II. Manual Demolition

A. Isolate the area with Red warning tape.

B. Shut off all utilities and services that could be damaged during demolition operations.

C. Conduct special safe work training with each crew member prior to commencement of demolition activities.

D. Stop work activities the moment an unexpected condition is encountered.

E. Keep access passages open throughout the demolition area.

F. Unless the area is constantly sprayed by water mist, keep dust respirators in place, and change them as soon as breathing becomes a problem.

G. Workers who handle the debris must be equipped with heavy work gloves.

H. All workers in the crew are to have tetanus shot records that are current to within 3 years.

I. Face shields are required for all crew members within the vicinity of actual demolition work.

III. Mechanical Demolition

The following items are in addition to all of the requirements for manual demolition.

A. Other than the equipment operator, no worker is to be closer than 1 1/2 the height of the structure being demolished while that work is being performed.

B. The red warning barrier should be no closer than 2 times the height of the structure being demolished. If another structure is closer than this distance, measures must be taken to barricade all doors and windows that face the demolition area.

C. Communicate evacuation plans to every worker in the area and test the alarm prior to beginning demolition operations.

IV. Explosive Demolition

Qualified persons must manage this kind of work and no other workers will be allowed to stay in the vicinity while such work is being performed.

Laser Operations

I. Non-Ionizing Radiation

A. Only qualified and trained employees shall be assigned to install, adjust, and operate laser equipment.

B. The laser equipment operator shall have proof of laser training available and in possession of the operator at all times. The company selling the laser unit will have qualified people to train our employees and issue each qualified employee a card attesting to the employee's qualification. Each company issues a card for their particular unit.

C. Employees, when working in areas in which a potential exposure to direct or reflected laser light greater than 0.005 watts (5 milliwatts) exists, shall be provided with anti-laser eye protection devices as specified by the OSHA standards. This should not be a problem if units are properly researched, as most units adapted to normal grade setting over short distances do not emit in excess of 5 milliwatts.

D. Areas in which lasers are used shall be posted with standard laser warning placards. These cards should be available from the company who sells the laser unit. These posters should be placed a short distance from the laser unit so that a person approaching the job site will be warned well in advance of their entry into the laser area. We should have no problem if these posters are placed around the job site 25 to 50 feet from the laser unit. These signs must be displayed at all times while lasers are in use, no exceptions.

E. Beam shutters or caps shall be utilized, or the laser turned off, when laser transmission is not actually required. When the laser is left unattended for a substantial period of time, such as during lunch hour, overnight, or at change of shifts, the laser shall be turned off. This regulation is self-explanatory and should cause no problem. Most manufacturers finish a lens cap or the unit can simply be disconnected from the battery.

F. Only mechanical or electronic means shall be used as a detector for guiding the internal alignment of the laser. If internal adjustment is required, the manufacturer's representative should do it.

G. The laser beam shall not be directed at employees. Consider this when setting up the unit. Care shall be exercised to keep employees out of the path of the laser beam.

H. When it is raining or snowing, or when there is dust or fog in the air, the operation of laser systems shall be prohibited where practicable; in any event, employees shall be kept out of range of the area of source and target during such weather conditions. Note that this particular section will require fair-weather-only operation of the unit and not dust. It would appear that on windy days some jobs could not operate due to blowing dust.

I. Laser equipment shall bear a label to indicate maximum output. The units should have a manufacturer's tag indicating maximum milliwatt output. Prior to purchase of any unit, the manufacturer should be asked to furnish complete technical data on the unit. This data shall cover the following items:

   1. Manufacturer's name and model number
   2. Type of laser head employed as source of light, manufacturer and milliwatt output
   3. Diameter of the beam as it diverges from the instrument
   4. The resultant energy density in milliwatts per square centimeter as it emerges from the instrument.

5. Beam size and energy density per square centimeter at given distances from the instrument

   If it is determined from this information that the unit can be adapted to company operation with minimum precautions, then a “copy” of the above data should be packed with the instrument. In case of OSHA inspection, this data should be available to the compliance officer so that he will know the exact output of the laser.

J. Employees shall not be exposed to light intensities above:

   1. Direct staring:1 micro-watt per square centimeter
   2. Incidental observing:1 milliwatt per square centimeter. Instruction of all employees, and setting up the instrument out of eye level of the employees should assure compliance.
   3. Diffused reflected light: 2 1/4 watts per square centimeter

   A diffusing target should always be used and care taken not to reflect the laser beam.

K. Laser unit in operation should be set up above the heads of the employees, when possible. Every effort should be made to set the unit up so that the laser beam is above the heads of those employees working around the laser so that they cannot cross the beam with their eyes.

   Employees shall not be exposed to microwave power densities in excess of 10 milliwatts per square centimeter. This should not be a problem, as the newer units do not emit this much power.

   Battery covers are required on all laser batteries to prevent the possibility of short circuit.

Heat and Cold Stress

I. General

Working in extreme temperatures (hot or cold) can overwhelm the body's internal temperature control system. When the body is unable to warm/cool itself, heat/cold related stress can result. Heat/cold stress can contribute to adverse health effects which range in severity from discomfort to death.

The Occupational Safety and Health Administration (OSHA) does not currently have specific standards for heat or cold stress. However, the OSHA Act of 1970 General Duty Clause (Section 5(a)(1)) states that "Each employer shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees." In addition, 29 CFR Subpart I relating to personal protective equipment requires employers to provide protection to employees exposed to hazards in the workplace. The OSHA website contains Fact Sheets and Guidance Documents that relate to heat and cold stress that have been incorporated into this program.

II. Responsibilities and Training

A. Supervisors will...

1. Assess work load and assign work and rest schedules as needed.
2. Ensure all employees have the appropriate personal protective equipment (PPE) prior to working in extreme temperature conditions.
3. Recognition of potential hazards and how to prevent or correct them.
4. Ensure employees are familiar with this safety program
5. Supervisors shall ensure all employees have received Heat and/or Cold Stress training prior to working in such conditions.

B. Employees will...

1. Review and comply with the provisions outlined in this program.
2. Complete training before working in extreme temperature conditions.
3. Wear the appropriate PPE.
4. Report heat and cold stress concerns

III. Heat Related Illnesses; Signs, Treatment and Prevention

A. While working in hot weather conditions, the human body may not be able to maintain a normal temperature just by sweating. If this happens, heat-related illnesses may occur. The most common health problems caused by hot work environments include:

1. Heat stroke – This is the most serious heat related effect. Heat stroke occurs when the body temperature increases above 1040 Signs and symptoms of heat stroke are confusion, loss of consciousness and lack of perspiration.

   TREATMENT: This condition must be treated as a medical emergency and the employee must receive immediate medical attention.

2. Heat exhaustion – Signs and symptoms of heat exhaustion include headache, nausea, dizziness, weakness, irritability, confusion, thirst, heavy perspiration and a body temperature greater than 100.40

TREATMENT: Employees experiencing heat exhaustion should be moved to a cool area, given fluids to drink and given cold compresses for their head, face and neck. Employees should also be taken to a clinic or emergency room to be monitored by medical personnel.

3. Heat cramps – Signs and symptoms of heat cramps include muscle pains usually caused by the loss of body salts/fluids.

   TREATMENT: Employees should replace fluid loss by drinking water and/or carbohydrate-electrolyte replacement liquids (e.g. Gatorade) every 15 to 20 minutes.

4. Heat rash – Heat rash is caused by excessive perspiration and looks like a red cluster of pimples or small blisters. Heat rash usually appears on the neck, upper chest, in the groin, under the breasts and in elbow creases.

   TREATMENT: for heat rash is to provide a cooler, less humid environment.

5. Dehydration – Dehydration is a major factor in most heat disorders. Signs and symptoms of dehydration include increasing thirst, dry mouth, weakness or light-headedness (particularly if worse upon standing), and a darkening of the urine or a decrease in urination.

   TREATMENT: Dehydration can be reversed or put back in balance by drinking fluids that contain electrolytes (i.e. Gatorade) that are lost during work related activities. Avoid caffeinated drinks.

B. Prevention Methods:

1. Acclimation – Acclimation is a process by which the physical processes of an employee's body adjusts to the environment over a period of time. Based on data obtained from OSHA, this process usually takes five to seven days. This process could take up to three weeks depending on the individual and their work environment. Employees who are not adequately acclimatized to the heat may experience temporary heat fatigue resulting in a decline in performance, coordination or alertness. This can be prevented through gradual adjustment to the hot environment. People in good physical condition tend to acclimatize better because their cardiovascular systems respond better.

2. Engineering Controls – For employees working indoors, the best way to prevent heat-related illness is to make the work environment cooler. Where and if possible, use air conditioning to cool the work area. Alternatively, increase the general ventilation as much as possible by opening windows or doors. When available, use cooling fans to aid in increasing ventilation.

3. Safe Work Practices – For employees working outdoors or working indoors without air conditioning or ventilation, take scheduled breaks in cool areas. Ensure there is plenty of cool water to drink and take water breaks as needed. Immediately report any problems to a supervisor. Supervisors should consider scheduling the hottest work for the coolest part of day, assigning extra employees to high demand tasks, and using work-saving devices (e.g. power tools, hoists or lifting aids) to reduce the body's work load. All employees should watch out for the safety of their coworkers

4. Heat Index – The Heat Index is a single numeric value that uses both temperature and humidity to inform the public on how the weather outdoors "feels". The higher the Heat Index, the hotter the weather feels. OSHA has used the Heat Index to assign protective measures for workers as the Heat Index increases. These protective measures may reduce the likelihood of heat related illnesses.

IV. Cold Related Illnesses and Injuries; Signs, Treatment and Prevention

A. During cold weather, an employee's body will use energy to maintain a normal internal body temperature. This will result in a shift of blood flow from employee's extremities (hands, feet and legs) and outer skin to the employee's core (chest and abdomen). If this happens, cold-related illnesses and injuries may occur if exposed to cold conditions for an extended period of time. The most common health problems caused by cold work environments include:

1. Hypothermia – Hypothermia is a potentially serious health condition. Hypothermia occurs when body heat is lost faster than it can be replaced. When the core body temperature drops to approximately 95°F, the onset of symptoms normally begins. The employee may begin to shiver, lose coordination, have slurred speech, and fumble with items in the hand. The employee's skin will likely be pale and cold. As the body temperature continues to fall these symptoms will worsen and shivering will stop. Once the body temperature falls to around 85°F severe hypothermia will develop and the person may become unconscious, and at 78°F, vital organs may begin to fail.

   TREATMENT: Depends on the severity of the hypothermia. For cases of mild hypothermia move to warm area and stay active. Remove wet clothes and replace with dry clothes or blankets, cover the head. To promote metabolism and assist in raising internal core temperature drink a warm (not hot) sugary drink. Avoid drinks with caffeine. For more severe cases do all the above, plus contact emergency medical personnel (Call 911 for an ambulance), cover all extremities completely, place very warm objects, such as hot packs or water bottles on the victim's head, neck, chest and groin. Arms and legs should be warmed last. In cases of severe hypothermia, treat the employee very gently and do not apply external heat to re-warm. Hospital treatment is required.

2. Frostbite – Frostbite occurs when the skin actually freezes and loses water. In severe cases, amputation of the frostbitten area may be required. While frostbite usually occurs when the temperatures are 30° F or lower, wind chill factors can allow frostbite to occur in above freezing temperatures. Frostbite typically affects the extremities, particularly the feet and hands. The affected body part will be cold, tingling, stinging or aching followed by numbness. Skin color turns red, then purple, then white, and is cold to the touch. There may be blisters in severe cases.

   TREATMENT: Do not rub the area to warm it. Wrap the area in a soft cloth, move the employee to a warm area, and contact medical personnel. Do not leave the employee alone. If help is delayed, immerse in warm (maximum 105 °F), not hot, water. Do not pour water directly on affected part. If there is a chance that the affected part will get cold again do not warm. Repeated heating and cooling of the skin may cause severe tissue damage.

3. Trench Foot – Trench Foot is caused by having feet exposed to damp, unsanitary and cold conditions including water at temperatures above freezing for long periods of time. It is similar to frostbite, but considered less severe. Symptoms usually consist of tingling, itching or burning sensation. Blisters may be present.

   TREATMENT: soak feet in warm water, then wrap with dry cloth bandages. Drink a warm, sugary drink. Seek medical attention if necessary.

4. Dehydration – It is easy to become dehydrated during cold weather. Signs of dehydration include increasing thirst, dry mouth, weakness or light-headedness (particularly if worse upon standing), and a darkening of the urine or a decrease in urination.

TREATMENT: Dehydration can be reversed or put back in balance by drinking fluids that contain electrolytes (i.e. Gatorade) that are lost during work related activities. Avoid caffeinated drinks

B. Prevention Methods:

1. Acclimation – Employees exposed to the cold should be physically fit, without any circulatory, metabolic, or neurological diseases that may place them at increased risk for hypothermia. A new employee should not be required to work in the cold full time during the first days of employment until they become adjusted to the working conditions and required protective clothing. New employees should be introduced to the work schedule slowly and be trained accordingly.
2. Engineering Controls – For employees working indoors, the best way to prevent cold-related illness is to make the work environment warmer. Where and if possible, use heaters to warm the work area. Alternatively, decrease the general ventilation as much as possible by closing windows or doors.
3. Safe Work Practices – For employees working outdoors or working indoors without heat, take scheduled breaks in warm areas. If available, use wind barricades to block the wind from the employees. Ensure there is plenty of water to drink and take water breaks as needed. Immediately report any problems to a supervisor. Supervisors should consider scheduling the most work for the warmest part of day, assigning extra employees to high demand tasks that will require longer periods in cold areas. All employees should watch out for the safety of their coworkers.
4. Heat Index – The Heat Index is a single numeric value that uses both temperature and humidity to inform the public on how the weather outdoors “feels”. The higher the Heat Index, the hotter the weather feels. OSHA has used the Heat Index to assign protective measures for workers as the Heat Index increases. These protective measures may reduce the likelihood of heat related illnesses.
5. Personal Protective Equipment (PPE) – PPE is an important factor in preventing cold stress related illnesses and injuries. Employees should adhere to the following recommendations when dressing for work in a cold environment:
    a. Wear at least three layers of clothing; an inner layer of wool, silk or synthetic to wick moisture away from the body; a middle layer of wool or synthetic to provide insulation even when wet; an outer wind and rain protection layer that allows some ventilation to prevent overheating.
    b. Wear a hat or hood; up to 40% of body heat can be lost when the head is left exposed.
    c. Wear insulated boots or other footwear.
    d. Do not wear tight clothing; loose clothing provides better ventilation.
    e. Keep a change of clothing available in case work clothes become wet.
6. The Cold Stress Equation – OSHA has incorporated information obtained from the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit values into the Cold Stress Equation. As the temperature decreases and/or the wind speed increases, the potential for cold stress related illnesses and injuries increases.

Concrete and Masonry Construction

I. General

This program covers all requirements set forth by The Occupational Safety and Health Administration's standard for concrete and masonry construction. Subpart Q, Concrete and Masonry Construction, Title 29 of the Code of Federal Regulations (CFR), Part 1926.700 through 706 -- states employers must comply to protect construction workers from accidents and injuries resulting from the premature removal of formwork, the failure to brace masonry walls, the failure to support precast panels, the inadvertent operation of equipment, and the failure to guard reinforcing steel. The purpose of this program is to prevent injury from hazards associated with concrete and masonry construction work. It covers all employees involved in concrete and/or masonry work.

II. Responsibilities and Training

A. Supervisors will...

1. Ensure that all employees are aware of the hazards associated with concrete and masonry during construction and are properly trained prior to their exposure of those hazards.
2. Ensure that initial training is conducted for all new employees and that retraining is conducted when employee behaviors suggest that retraining is warranted.
3. Conduct operations and train employees.

B. Employees will...

1. Follow all requirements regarding the safe work practices and requirements of this program.
2. Report all hazards if not previously made aware of them, especially when changes occur.

III. Hazards Associated With Concrete/Masonry Construction

A. Concrete Buckets: Impact injuries due to defective slings/hardware

B. Concrete Pumper Truck: Electrical injuries due to overhead power lines; Impact injuries due to improper operator operations

C. Concrete: Caustic burns to eyes and skin; Impact injury due to falling buckets, blocks, bricks or other objects; Respiratory hazards due to concrete dust

D. Cranes: Impact injuries due to defective slings or unbalanced load

E. Electric Saws: Shock injuries due to defective power cords or nongrounded circuit

F. Flagging: Impact injuries for flaggers exposed to traffic

G. Fork Lifts: Impact injuries due to exceeding the lifting capacity or improper operation by operator

H. Form Work: Fall injuries from height, ladders or open excavation; Slips and trips working with footers: Cuts and puncture wounds from exposed nails

I. Leading Edge Work: Fall injuries due to height and lack of knowledge - only experienced and authorized workers allowed

J. Rebar: Struck Against injuries due to impalement on end of rebar; Slips and trips working with rebar

K. Injuries can result from unsafe work practices including:

1. Premature removal of formwork;
2. Failure to brace masonry walls;

3. Failure to adequately support precast panels;
4. Inappropriate operation of equipment;
5. Failure to guard the end of reinforcing steel;
6. Inadequate shoring, which can lead to formwork collapse.

IV. Safe Work Practices and Requirements

A. Construction Loads - Employees must not place construction loads on a concrete structure or portion of a concrete structure unless BHB determines, based on information received from a person who is qualified in structural design, that the structure or portion of the structure is capable of supporting the intended loads.

B. Reinforcing Steel - All protruding reinforcing steel, onto and into which employees could fall, must be guarded to eliminate the hazard of impalement.

C. Post-Tensioning Operations - Employees (except those essential to the post-tensioning operations) must not be permitted to be behind the jack during tensioning operations.

D. Signs and barriers must be erected to limit employee access to the post-tensioning area during tensioning operations.

E. Concrete Buckets - Employees must not be permitted to ride concrete buckets.

F. Working Under Loads - Employees must not be permitted to work under concrete buckets while the buckets are being elevated or lowered into position. To the extent practicable, elevated concrete buckets must be routed so that no employee or the fewest employees possible are exposed to the hazards associated with falling concrete buckets.

V. Concrete and Masonry Construction

A. Personal Protective Equipment - Employees must not be permitted to apply a cement, sand, and water mixture through a pneumatic hose unless they are wearing protective head and face equipment.

B. General Requirements for Formwork - Formwork must be designed, fabricated, erected, supported, braced and maintained so that it will be capable of supporting without failure all vertical and lateral loads that might be applied to the formwork. As indicated in the Appendix to the standard, formwork that is designed, fabricated, erected, supported, braced, and maintained in conformance with Sections 6 and 7 of the American National Standard for Construction and Demolition Operations—Concrete and Masonry Work (ANSI) A10.9-1983 also meets the requirements of this paragraph.

C. Drawings or Plans - Drawings and plans, including all revisions for the jack layout, formwork (including shoring equipment), working decks, and scaffolds, must be available at the jobsite.

D. Shoring and Reshoring -

1. All shoring equipment (including equipment used in reshoring operations) must be inspected prior to erection to determine that the equipment meets the requirements specified in the formwork drawings.
2. Damaged shoring equipment must not be used for shoring. Erected shoring equipment must be inspected immediately prior to, during, and immediately after concrete placement. Shoring equipment that is found to be damaged or weakened after erection must be immediately reinforced.

3. The sills for shoring must be sound, rigid, and capable of carrying the maximum intended load. All base plates, shore heads, extension devices, and adjustment screws must be in firm contact and secured, when necessary, with the foundation and the form.
4. If single-post shores are used one on top of another (tiered), then additional shoring requirements must be met. The shores must be as follows:
    a. Designed by a qualified designer and the erected shoring must be inspected by an engineer qualified in structural design,
    b. Vertically aligned,
    c. Spliced to prevent misalignment, and
    d. Adequately braced in two mutually perpendicular directions at the splice level. Each tier also must be diagonally braced in the same two directions.
5. Adjustment of single-post shores to raise formwork must not be made after the placement of concrete.
6. Reshoring must be erected, as the original forms and shores are removed, whenever the concrete is required to support loads in excess of its capacity.

E. Vertical Slip Forms - The steel rods or pipes on which jacks climb or by which the forms are lifted must be specifically designed for that purpose and adequately braced where not encased in concrete. Forms must be designed to prevent excessive distortion of the structure during the jacking operation. Jacks and vertical supports must be positioned in such a manner that the loads do not exceed the rated capacity of the jacks. The jacks or other lifting devices must be provided with mechanical dogs or other automatic holding devices to support the slip forms whenever failure of the power supply or lifting mechanisms occurs.

VI. Requirements For Cast-In-Place Concrete

The form structure must be maintained within all design tolerances specified for plumbness during the jacking operation. The predetermined safe rate of lift must not be exceeded. All vertical slip forms must be provided with scaffolds or work platforms where employees are required to work or pass.

A. Reinforcing Steel - Reinforcing steel for walls, piers, columns and similar vertical structures must be adequately supported to prevent overturning and collapse. Employees must take measures to prevent unrolled wire mesh from recoiling. Such measures may include, but are not limited to, securing each end of the roll or turning over the roll.

B. Removal of Formwork - Forms and shores (except those that are used for slabs on grade and slip forms) must not be removed until COMPANY determines that the concrete has gained sufficient strength to support its weight and superimposed loads. Such determination must be based on compliance with one of the following:

1. The plans and specifications stipulate conditions for removal of forms and shores and such conditions have been followed, or
2. The concrete has been properly tested with an appropriate American Society for Testing and Materials (ASTM) standard test method designed to indicate the concrete compressive strength and the test results indicate that the concrete has gained sufficient strength to support its weight and superimposed loads.

VII. Precast Concrete

A. Precast concrete wall units, structural framing and tilt-up wall panels must be adequately supported to prevent overturning and to prevent collapse until permanent connections are completed.

B. Lifting inserts that are embedded or otherwise attached to tilt-up wall panels must be capable of supporting at least two times the maximum intended load applied or transmitted to them. Lifting inserts for other precast members must be capable of supporting four times the load. Lifting hardware shall be capable of supporting at least five times the maximum intended load applied or transmitted to the lifting hardware.

C. Only essential employees are permitted under precast concrete that is being lifted or tilted into position.

VIII. Lift Slab Operations

A. Lift-slab operations must be designed and planned by a registered professional engineer who has experience in lift-slab construction. Such plans and designs must be implemented by COMPANY and must include detailed instructions and sketches indicating the prescribed method of erection. The plans and designs must also include provisions for ensuring lateral stability of the building/structure during construction.

B. Jacking equipment must be marked with the manufacturer's rated capacity and must be capable of supporting at least two and one-half times the load being lifted during jacking operations and the equipment must not be overloaded.

C. Jacks/lifting units must be designed and installed so that they will neither lift nor continue to lift when loaded in excess of their rated capacity and jacks/lifting units must have a safety device which will cause the jacks/lifting units to support the load at any position in the event of their malfunction or loss of ability to continue to lift.

D. No employee, except those essential to the jacking operation, shall be permitted in the building/structure while any jacking operation is taking place unless the building/structure has been reinforced sufficiently to ensure its integrity during erection.

E. Under no circumstances shall any employee who is not essential to the jacking operation be permitted immediately beneath a slab while it is being lifted.

IX. Masonry Construction

Whenever a masonry wall is being constructed, employers must establish a limited access zone prior to the start of construction. The limited access zone must be as follows:

A. Equal to the height of the wall to be constructed plus 4 feet and shall run the entire length of the wall;

B. On the side of the wall that will be unscaffolded;

C. Restricted to entry only by employees actively engaged in constructing the wall; and

D. Kept in place until the wall is adequately supported to prevent overturning and collapse unless the height of the wall is more than 8 feet and unsupported, in which case it must be braced. The bracing must remain in place until permanent supporting elements of the structure are in place.

Silica

I. General

The purpose of an exposure control plan (ECP) is to set out our approach to protecting workers from harmful exposure to airborne silica dust. A combination of control measures will be required to achieve this objective. We commit to being diligent in our efforts to select the most effective control technologies available, and to ensure that the best practices, as described in this ECP, are followed at our job sites. The work procedures we establish will protect not only our employees but all workers on our job sites.

II. Responsibilities

Due to the significant risk posed by respirable silica, it is critical that all personnel involved in operations that could potentially create silica dust take specific action to ensure that, as much as possible, a hazard is not created.

A. BHB is responsible for...

1. Ensuring that the materials (e.g., tools, equipment, personal protective equipment) and other resources (i.e., worker training materials) required to fully implement and maintain this exposure control plan (ECP) are readily available where and when they are required.
2. Providing a job-specific ECP for each project, which outlines in detail the work methods and practices that will be followed on each site. Considerations will include
3. Availability and delivery of all required tools/equipment
4. Scope and nature of grinding work to be conducted
5. Control methods to be used and level of respiratory protection required
6. Coordination plan
7. Conducting a periodic review of the effectiveness of the ECP. This would include a review of the available dust-control technologies to ensure these are selected and used when practical.
8. Initiating sampling of worker exposure to concrete dust when there are non-standard work practices for which the control methods to be used have not been proven to be adequately protective.
9. Ensuring that all required tools, equipment, and personal protective equipment are readily available and used as required by the ECP.
10. Ensuring all employees are educated and trained to an acceptable level of competency.
11. Maintaining records of training, fit-test results, crew talks, and inspections (equipment, PPE, work methods/practices).
12. Coordinating the work with the prime subcontractor and other employers to ensure a safe work environment.

B. Supervisors are responsible for...

1. Obtaining a copy of the ECP from the employer, and making it available at the jobsite
2. Selecting, implementing, and documenting the appropriate site-specific control measures

3. Providing adequate instruction to workers on the hazards of working with silica-containing materials (e.g., concrete) and on the precautions specified in the job-specific plan covering hazards at the location
4. Ensuring that workers are using the proper respirators and have been fit-tested, and that the results are recorded
5. Directing the work in a manner that ensures the risk to workers is minimized and adequately controlled
6. Communicating with the prime subcontractor and other sub-contractors to ensure a safe work environment

C. All Employees are responsible for:..

1. Knowing the hazards of silica dust exposure
2. Using the assigned protective equipment in an effective and safe manner
3. Setting up the operation in accordance with the site-specific plan
4. Following established work procedures
5. Reporting any unsafe conditions or acts
6. Knowing how and when to report exposure incidents

III. 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—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 rock and stone)
G. Fibrous-cement board containing silica

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 (e.g., 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

Unprotected workers performing these activities, or working in the vicinity, can be exposed to harmful levels of airborne silica.

IV. Health Hazards

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 the lung tissue. The 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.

A. Employees may develop any of three types of silicosis, depending on the concentrations of silica dust and the duration of exposure: Signs and barriers must be erected to limit employee access to the post-tensioning area during tensioning operations.
    1. Chronic silicosis - develops after 10 or more years of exposure to crystalline silica at relatively low concentrations
    2. Accelerated silicosis - develops 5 to 10 years after initial exposure to crystalline silica at high concentrations
    3. Acute silicosis - develops within a few weeks, or 4 to 5 years, after exposure to very high concentrations of crystalline silica

B. Initially, workers with silicosis may have no symptoms or 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. As the disease progresses, a worker may experience:
    1. Shortness of breath
    2. Severe cough
    3. Weakness

V. Code of Practice

BHB has a code of practice governing the storage, handling, use and disposal of silica if there is potential for exposure. The code of practice includes 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 must be used to control silica-containing dusts.

A. Risk Identification, Assessment and Control - The potential for worker 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 0.025 mg/cubic meter over an 8-hour time period. Atmospheric testing results should be assessed before a worker is exposed.

    A key step in developing a silica exposure control plan is to identify the work activities that would put workers at risk of exposure

    1. Work activities that may generate airborne silica dust - For silica, the route of exposure is through the inhalation of airborne dust. The employer should have a qualified person review the planned work activities to identify those that may generate airborne silica.

    2. Identify workers at risk of exposure - For example, workers who finish concrete would be at greater risk of exposure than plumbers or electrical workers.

3. Amount of exposure - some work activities generate more dust than others, and the amount of exposure should be estimated. Published resources are available that provide air sampling data and compare silica dust levels from various construction activities.
4. Duration of exposure - Workers who grind concrete for a full shift would be at greater risk than workers jackhammering for an hour.

B. Silica Exposure/Management - Effective control options must be used to eliminate or reduce the risk to workers from the hazards of silica dust exposure. The following hierarchy of control measures must be followed:

1. Elimination/substitution (e.g., using products with less silica or using work methods that would eliminate the need for surface grinding)
2. Engineering controls (e.g., water, local exhaust ventilation, enclosure)
3. Administrative controls (e.g., coordination of tasks with subcontractors, signage)
4. The use of proper PPE such as gloves, coveralls and eye protection when exposed to silica. Personal protective equipment such as gloves, coveralls and eye protection will be used to control silica exposures.

C. BHB commits to developing knowledge and expertise about these controls, and to establishing policies/procedures to protect workers from harmful exposure and to minimize reliance on respirators. Effective engineering controls such as HEPA vacuum attachments and wetting methods, which control silica dust at its source, are readily available. These controls have been proven to reduce airborne dust levels significantly when selected and operated in accordance with best practices. We know that engineering controls alone do not reduce airborne silica to safe levels; so in most cases other control measures, including respiratory protection, will be necessary.

If we take on a job that could release an unusually high amount of dust, and we are unsure of the adequacy of our control measures, we will conduct air sampling in order to ensure that control methods are protective.

We will reduce or eliminate worker exposure to silica dust by selecting a combination of the following controls listed in order of preference:

1. Elimination and substitution (Example: Use of an alternate blasting media)
2. Engineering (Examples: Containment methods such as blast cleaning machines and cabinets, blasting rooms or portable equipment)
3. Administrative
4. Personal protective equipment

D. Elimination and Substitution - We recognize the importance of planning the work in order to minimize the amount of silica dust generated. During the project planning phase, we will advocate for the use of methods that reduce the need for cutting, grinding, or drilling of concrete surfaces (e.g., formwork planning). Whenever possible, we will schedule work when concrete is still wet, because we know that much less dust is released at that time.

E. Engineering Control of Dust - Selecting an appropriate control measure depends on the specifics of the operation. In some cases, local exhaust ventilation (LEV) is more effective at controlling exposure (e.g., during grinding operations) than wetting methods. In a different application, wetting may be more effective (e.g., during cutting operations) than LEV. However, using LEV may reduce the amount of final cleaning required, as the silica dust is captured.

Dust control systems may employ three well-established techniques:

1. Local Exhaust Ventilation (LEV) - When LEV is used in our work, we will employ the following systems and safe work practices:
    a. Vacuum attachment systems to capture and control the dust at its source whenever possible
    b. Dust control systems (used regularly and well maintained).
    c. Grinding wheels operated at the manufacturers' recommended rpm (operating in excess of this can generate significantly higher airborne dust levels).
    d. Retrofit shrouds or exhaust cowlings for corner grinding; use manufacturer-specified rpm speeds and a well-maintained HEPA vacuum.
    e. Diamond stone grinders, which allow for the use of a more efficient suction casing on the grinder, whenever practicable.
    f. HEPA or good quality, multi-stage vacuum units approved for use with silica dust. [The vacuum units should be capable of creating a target airflow of at least 70 cfm. This should achieve a face velocity at the shroud of about 1.3 m/s (260 fpm)—the higher the face velocity, the more dust captured at source.]
    g. Work planning, so that concrete grinding can be completed when wet (dust release can be significantly reduced).
    h. Good housekeeping work practices (for example, use vacuums with high-efficiency particulate air (HEPA) filters, or use wet sweeping).
    i. Train workers and supervisors on how to properly use and maintain the equipment.
2. Wet methods for Dust Control
    a. When water spray systems are used in our work, we will follow these safe work practices:
    b. Pneumatic grinders will be used instead of electric-powered grinders if water is the method of control.
    c. Pressure and flow rate of water will be controlled in accordance with tool manufacturers' specifications (for cutting saws, a minimum of 0.5 liters of water per minute should be used).
    d. When sawing concrete or masonry, we will use only saws that provide water to the blade.
    e. Wet slurry will be cleaned from work surfaces when the work is completed, using a wet vacuum or wet sweeping.
3. Barriers and Enclosures
    a. When barriers or enclosures are used in our work, we will follow these safe work practices:
    b. The site foreman will determine the type and design of barrier or enclosure (based on the work activity and the work area) and ensure it is constructed in accordance with the work plan. Barriers may be simple hazard-flagging ribbon or more restrictive hoarding.
    c. We will use commercially available negative air units when constructing a full enclosure.

F. Administrative Controls - We will follow these safe work practices:

1. Exposure control plans and the site risk assessment/work plan will be submitted to the general contractor prior to the start of work.

2. We will establish procedures for housekeeping, restricting work areas, personal hygiene, worker training, and supervision.
3. As part of our project planning, we will assess when silica dust may be generated and plan ahead to eliminate or control the dust at the source. We recognize that awareness and planning are key factors in the prevention of silicosis.
4. Warning signs will be posted to warn workers about the hazards of silica and to specify any protective equipment required (for example, respirators).
5. Work schedules will be posted at the boundaries of work areas contaminated with silica dust.
6. Work that generates silica dust will be conducted after hours, when access to other unprotected workers cannot be restricted.
7. We will develop a site-specific exposure control plan to cover project-specific issues (e.g., scope of work, project location and site-specific hazards) and to be kept available at the worksite.

G. Personal Protective Equipment
   1. Respiratory protection
      a. All workers who wear respirators will do so in adherence with our respirator program.
      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 clean-shaven. Filtering face piece respirators give little or no protection to workers with beards, and even a minor growth of stubble can severely reduce the effectiveness of respiratory protection.
      e. All workers who wear respirators will be fit-tested.
      f. Workers will be properly trained in the use of respirators, and a high standard of supervision, inspection, and maintenance will be followed.
   2. Protective Clothing - BHB will provide employees in a restricted area with protective clothing that protects other clothing worn by the employee from silica contamination, ensure that employees' street clothing is not contaminated by silica, and ensure that an employee does not leave a restricted area until the employee has been decontaminated.

H. Health Monitoring - Exposures to airborne concentrations of Silica must be kept below the permissible exposure limits shown in 29 CFR 1910.1000 Table Z-3. Full shift personal samples shall be representative of the employee's regular, daily exposure to silica.

I. Documentation - The exposure control plan must be reviewed at least annually and updated as necessary by the employer, in consultation with the workplace health and safety committee or the worker health and safety representative. Records must be kept of the following:
   1. All workers who are exposed to respirable silica dust while on the job
   2. Worker education and training sessions
   3. Respirator fit-testing
   4. Equipment maintenance and repair
   5. Job site inspections

VI. Training

All employees subject to silica exposure shall be provided information about adverse health effects, work practices, chemical hazards, and use and care of personal protective equipment.

Training is required prior to using silica-containing materials or working in an environment known to contain airborne concentrations of Silica. Periodic refresher training is also required. We will train all silica dust in the following:

A. Hazards associated with exposure to silica dust
B. The risks of exposure to silica
C. Signs and symptoms of silica disease
D. Safe work procedures to be followed (e.g., setup of enclosures, disposal of silica waste, personal decontamination)
E. Use of respirators and other personal protective equipment (e.g., donning and doffing of personal protective equipment, and cleaning and maintenance of respirators)
F. Use of control systems (e.g., LEV and wet methods)
G. How to seek first aid (for example, the location and use of eyewash stations)
H. How to report an exposure to silica dust

Stop Work Authority

I. General

The Stop Work Authority process involves a stop, notify, correct and resume approach for the resolution of a perceived unsafe condition, act, error, omission or lack of understanding that could result in an undesirable event.

All BHB employees have the authority to stop work when the control of the HSE risk is not clearly established or understood. All BHB employees have the authority and obligation to stop any task or operation where concerns or questions regarding the control of HSE risk exist and without fear of reprimand.

This program applies to all BHB projects and operations.

II. Roles Responsibilities of Employees and Management

A. Employees are responsible to initiate a Stop Work Intervention when warranted and management is responsible to create a culture where SWA is exercised freely.

B. Supervisors are responsible to ensure a culture is created where SWA is exercised and honored freely to resolve issues before operations resume and recognize proactive participation.

C. Management must establish and support clear expectations to exercise SWA, create a culture where SWA is exercised freely and hold those accountable that chose not to comply with established SWA policies.

III. Roles Responsibilities of Employees and Management

A. All Stop Work Interventions shall be documented for lessons learned and corrective measures to be put into place.

B. Stop Work reports shall be reviewed by a supervisor or manager in order to measure participation, determine quality of interventions and follow-up, trend common issues, identify opportunities for improvement, and facilitate sharing of learnings.

C. BHB places a high importance of follow-up after a Stop Work Intervention has been initialed and closed. It is the desired outcome of any Stop Work Intervention that the identified safety concern(s) have been addressed to the satisfaction of all involved persons prior to the resumption of work. Most issues can be adequately resolved in a timely manner at the job site, occasionally additional investigation and corrective actions may be required to identify and address root causes.

IV. Training

A. Employees are provided training on Stop Work Authority. Employees must receive Stop Work Authority training before initial assignment. The training must be documented including the employee name, the dates of training and subject.

Pandemic Preparedness

I. General

Business continuity means ensuring that essential business functions can survive a natural disaster, technological failure, human error, or other disruption. Many existing business continuity plans anticipate disruptions such as fires, earthquakes, and floods. These events are restricted to certain geographic areas and the time frames are fairly well defined and limited. Pandemic disease, however, demands a different set of continuity assumptions since it will be widely dispersed geographically and potentially arrives in waves that could last several months at a time.

A pandemic disease plan or disease containment plan is developed for BHB and a coordinator appointed. Our company safety coordinator will be responsible for dealing with disease issues and their impact at the workplace. This may include contacting local health department and health care providers in advance and developing and implementing protocols for response to ill individuals.

II. Assumptions

A pandemic disease will spread rapidly and easily from person to person, affecting all businesses due to absenteeism. Businesses that are relied upon by other businesses will be facing the same massive absentee rates and will be unable to provide essential components to maintain the daily operations.

Risk assessments to identify the essential/critical components of our business operation will be conducted.

Recognize that a pandemic includes:

A. Healthcare services not being available (they are already full at present with the usual ailments).

B. Schools, churches and other public places not open.

C. Borders are partially or fully closed, especially airports, leaving people (our families, employees, business partners, customers and suppliers) “stranded”.

D. Essential materials and supplies may be limited due to distribution chains that are affected by the travel restrictions or absentee workers supporting those transportation means.

E. Essential services around utilities, food distribution/access and banking systems may not be at “normal levels”; access to cash flow could be tight.

F. People may not be willing to or able to come to work.

III. Effective Internal/Employee and External/Customer Communication Procedure

Communications during a pandemic involves both internal communications and external communications. Internal communication will be provided to employees to educate them about pandemic diseases and measures they can take to be prepared.

Key contacts, a chain of communications and contact numbers for employees, and processes for tracking business and employees status will be developed.

Risk communication is critical to inform employees regarding changes in the pandemic status. The following is one method for providing such information.

Alert: Conveys the highest level of importance; warrants immediate action or attention.

Advisory: Provides key information for a specific incident or situation; might not require immediate action.

Update: Provides updated information regarding an incident or situation; unlikely to require immediate action.

Provide continuous updates through internal & external communications when a pandemic is imminent:

A. Notification to employees of operational changes
B. Provide frequent updates about the pandemic status
C. Provide advisories and alerts as conditions change
D. Ensure vendors and suppliers have available a dedicated communications contact
E. Monitor local, state, and federal pandemic updates

We will contact employees via phone to share notifications and messages about alerts. The use of the company web-site also will serve as a portal for sharing information with employees and vendors.

A procedure must be developed to notify key contacts including both customers and subcontractors in the event an outbreak has impacted our ability to perform services. This procedure must also include notification to customers and subcontractors when operations resume.

IV. Business Continuity Planning

Business continuity plans will be prepared so that if a large or significant absenteeism of personnel become ill or changes in business practices are required business operations can be effectively maintained.

COMMAND STAFF:

Incident Commander (President)	Organizes and directs all aspects of the incident response
Public Information Officer (Marekting Coordinator)	Creates and releases upon approval from the incident commander all information to the staff, media and public.
Liaison Officer (Vice President)	Establishes and maintains relationships with outside organizations
Safety Officer (Safety Manager)	Ensures the safety of all persons involved with the pandemic

OPERATIONS SECTION:

Operations Section Chief (President)	Initiates and manages ongoing operations throughout a pandemic

LOGISTICS SECTION:

Logistics Section Chief (Vice President)	Meets the goods, services, and staffing needs of the operation during the pandemic

PLANNING SECTION:

Planning Section Chief (Safety Manager)	Collects information and resources potentially relevant to the pandemic and company operations

FINANCE SECTION:

Finance Section Chief (Purchasing/Accounting Manager)	Monitors all expenditures and ensures fiscal resource availability during the pandemic

V. Pandemic Response by Pandemic Phase

Currently the WHO has created various phases for a pandemic but does not always relate to events locally.

Level 0 (WHO Phase 3) - Novel virus alert- not human-to-human transmission

Level 1 (WHO Phase 4) - Confirmed cases of human-to-human transmission of novel disease virus.

Level 2 (WHO Phase 5) - Suspected/confirmed cases in the local area.

Level 3 (WHO Phase 5) - Numerous suspected/confirmed cases in the local area.

VI. Work At Home or Stay At Home Policy

Flexible work policies will be developed as possible. Employees will be encouraged to stay at home when ill, when having to care for ill family members, or when caring for children when schools close, without fear of reprisal. Tele-commuting or other work-at-home strategies will be developed. Risk assessments to identify the essential/critical components of our business operation need to be conducted.

VII. Infection Control Measures

Guidelines for infection control are important to clarify the routes of transmission and the ways to interrupt transmission through measures of hygiene. Infection control is an essential component of pandemic management and a component of public health measures. Essential measures include:

A. Hand washing and use of hand sanitizers will be encouraged by BHB supervision. Hand washing facilities, hand sanitizers, tissues, no touch trash cans, hand soap and disposable towels will be provided by BHB.

B. Employees are encouraged to obtain appropriate immunizations to help avoid disease. Granting time off work to obtain the vaccine will be considered when vaccines become available in the community.

C. Limiting large or crowded gatherings of personnel if an outbreak or increased level of disease is in progress. Social distancing including increasing the space between employee work areas and decreasing the possibility of contact by limiting large or close contact gatherings will be considered.

D. Equipment and/or working surfaces shall be cleaned periodically. Clean all areas that are likely to have frequent hand contact (like doorknobs, faucets, handrails) periodically and when visibly soiled. Work surfaces should also be cleaned frequently using normal cleaning products.

E. Stay at home when you are sick. If possible, stay away from work, school and from running errands. You will help others from catching your illness.

F. Cover your coughs and sneeze into tissue, or cough into your shirt sleeve.

G. Enhance existing housekeeping service by wiping down and disinfecting work areas (i.e. keyboards, telephones, desks, etc.) frequently.

H. Enhance housekeeping services for general public use areas several times throughout the work period.

I. Use personal protective equipment where appropriate to minimize exposure (i.e. gloves- for handling money, masks- for ill employees)

VIII. Implementation, Testing and Revision of the Plan

The Pandemic Plan is reviewed and/or tested. The plan and emergency communication strategies should be periodically tested to ensure it is effective and workable.

Testing the plan will be accomplished by conducting exercises. Exercises range from low stress to full scale, hands on drills. A tabletop exercise is the easiest way to begin testing the plan. This type of exercise involves having discussions regarding a scenario that challenges the plan and the decision makers during an emergency. Functional exercises take on an additional level of complexity, in that they actually require participants to conduct functional components of the plan. This usually involves planning specific scenarios, creating pretend data and present issues that target an area within the plan to be tested.

Each of these methods of testing the plan requires extensive planning for the exercise and the evaluation. The evaluation is critical to revising the plan, by capturing actual responses during the exercise or drill objectively. Once this data is captured, an after-action report with recommendations to revising the plan should be completed within a few weeks of the exercise.

Following a pandemic event, the person responsible for implementation of the plan will identify learning opportunities and take action to implement any corrective actions.

A review of the plan's initiated actions completed will identify all action items that were taken versus and when the action items were to be completed via a gap analysis indicating when specific action items were to occur, and when actual completion dates were completed.

Input will be asked of our staff and management for what went well and what could be improved during the event. All findings that indicate where improvements can be made will be used as Lessons Learned process to modify this plan as required. Corrective actions will be assigned to specific management representatives as required. Implementation of the Lessons Learned will be communicated to all employees and a revised plan issued.

IX. Training

Employees will be trained on health issues of the pertinent disease to include prevention of illness, initial disease symptoms, preventing the spread of the disease, and when it is appropriate to return to work after illness. Disease containment plans and expectations should be shared with employees. Communicating information with non-English speaking employees or those with disabilities will be done.

Documentation of all training will be kept on file.

Safety Forms

Tab 1
Daily Job Site Report

Daily Job Site Report

BENCHMARK houston builders

Date: _____ **Project:** _____ **Project #:** _____

Project Manager: _____ **Superintendent:** _____

Weather: Temp _____ °F Clear Cloudy Rain Rain Fall _____ in.

Weather Delay: Rain Delay Mud Delay Half Day Full Day

Were attempts made to dry out or improve the site? Yes No **Was a visual inspection of the SWPPP performed?** Yes No

Company	Supervisor	# Emp.	Man Hrs. / Day	Brief Work Description

Notes / Details:

Tab 2
Safety Audit

Date: _____ **Superintendent:** _____

Project Number: _____ **Location:** _____

OK = Satisfactory **AN** = Action Needed **NA** = Not Applicable

A. Protective Equipment

	OK	AN	NA
1. Hard Hats Worn			
2. Eye/Face Protection as Req.			
3. Proper Footwear			
4. Body Harness (2 Lanyards 100%)			
5. Safety Vest			
6. Hearing/Breathing & Hand Protection			
7. Confined Space Permit & Entry Equipment			

B. Excavation and Shoring

	OK	AN	NA
1. Shoring or Sloping			
2. Spoil Bank (2' Back) every 25'			
3. Ladder Available			
4. Competent Person			

C. Highway Equipment

	OK	AN	NA
1. Back up Alarms/Horns			
2. Seat Belts			
3. Windows			
4. Mirrors			

D. Electrical/Hand tools

	OK	AN	NA
1. Extension Cords/GFCI's			
2. Power Tools/Guards			
3. Tool Handles			

E. Scaffolds/Fall Protection

	OK	AN	NA
1. Fully Decked/Guardrails			
2. Construction			
3. Training Documentation			
4. Toe Boards			

F. Aerial Lifts

	OK	AN	NA
1. Safety Chain			
2. Training Documentation			
3. Correct Fit of Harnesses			

G. First Aid & Emergency

	OK	AN	NA
1. First Aid Supplies			
2. SDS/Hazard Com.			
3. CPR Certified Personnel			

H. Housekeeping & Sanitation

	OK	AN	NA
1. Housekeeping & Sanitation			
2. Drinking Water/Cups			
3. Trash Dispenser			

I. Ladders

	OK	AN	NA
1. Tied Off/3' Above Landing			
2. Proper Condit./Placement			
3. Step Ladders used Correctly			

J. Oxygen/Acetylene Bottles

	OK	AN	NA
1. Stored Upright & Secured			
2. Gauges/Hoses			
3. Spark Arrestors			

K. Fuel Storage

	OK	AN	NA
1. Safety Cans Condition/Funnels			
2. Fire Extinguishers			
3. Proper Labels on Cabinets/Keys			

L. Cranes

	OK	AN	NA
1. Annual Inspec. Certificate			
2. Load Charts/Angle Indic.			
3. Power Lines			
4. Daily Inspection Reports			
5. Anti-Tube Block			

M. Overall Jobsite/Admin.

	OK	AN	NA
1. Jobsite Posters/Phone Numbers & Muster Points			
2. Job Hazard Analysis			
3. Subcontractor Safety Meetings/Tool Box			
4. Location of Hospital			

OK = Satisfactory **AN** = Action Needed **NA** = Not Applicable

	OK	AN	NA
N. Electrical			
1. Postings	____	____	____
2. Lock Out/Tag Out Notifications	____	____	____
3. Grounding of Equipment	____	____	____

	OK	AN	NA
O. Elevated Construction			
1. Toe Boards	____	____	____
2. Safety Railings	____	____	____
3. Penetrations/Block out Covers	____	____	____
4. Rigging w/Tags	____	____	____

Notes:

Deficiency ID	Company Name	Violation / Comments

Signature: _____

Tab 3
Safety Meeting

BENCHMARK houston builders

Company: _____ **Date:** _____

Location: _____ **Project #:** _____

Conducted By _____ **Interpreter:** _____

Subject Covered: _____

Handouts/Videos: _____

Type of Meeting: Tool Box Supervisory Combined Other

Attendance Roster

1.	_____	16.	_____
2.	_____	17.	_____
3.	_____	18.	_____
4.	_____	19.	_____
5.	_____	20.	_____
6.	_____	21.	_____
7.	_____	22.	_____
8.	_____	23.	_____
9.	_____	24.	_____
10.	_____	25.	_____
11.	_____	26.	_____
12.	_____	27.	_____
13.	_____	28.	_____
14.	_____	29.	_____
15.	_____	30.	_____

Comments:

Tab 4
Job Hazard Analysis

BENCHMARK houston builders

Project Name: _____ **Project Number:** _____ **Date:** _____

Description of Work Being Evaluated: _____

Companies Involved:_____

Trades Involved: _____

Sequence of Steps	Potential Hazards / Accidents	Recommended Safe Procedures	Special Training
Break activity into normal steps and list their normal sequence of occurrence. Describe the WHAT not the how of each step. Check with employees experienced in performing the activity.	Question each step for potential accidents. Seek ideas from similar work being performed. Review past accident reports.	For each hazard discuss what employees should do/not do to avoid an accident. Be specific, brief and use simple do/don't statements. Write them as if you were talking to employees. Never record generalities such as be careful, use caution, be alert, etc.	Determine requirements for employee training, including hazard communication to safely perform each step of the activity.
1			
2			
3			
4			

Sequence of Steps	Potential Hazards / Accidents	Recommended Safe Procedures	Special Training
5			
6			
7			
8			
9			
10			

Attendee's Name: Sign / Print		Company	Contact Number
1. _____	/ _____	_____	_____
2. _____	/ _____	_____	_____
3. _____	/ _____	_____	_____
4. _____	/ _____	_____	_____
5. _____	/ _____	_____	_____
6. _____	/ _____	_____	_____
7. _____	/ _____	_____	_____
8. _____	/ _____	_____	_____
9. _____	/ _____	_____	_____
10. _____	/ _____	_____	_____
11. _____	/ _____	_____	_____
12. _____	/ _____	_____	_____
13. _____	/ _____	_____	_____
14. _____	/ _____	_____	_____
15. _____	/ _____	_____	_____
16. _____	/ _____	_____	_____
17. _____	/ _____	_____	_____
18. _____	/ _____	_____	_____
19. _____	/ _____	_____	_____
20. _____	/ _____	_____	_____

Tab 5
Incident Investigation Report

GENERAL INFORMTION (Always Complete)

Type of Incident: Near Miss Property Damage First Aid Illness Injury

Project Name: _____ Project #: _____

Project Address: _____

Client: _____ Subcontractor(s): _____

Employee's Name(s) Involved in Incident: _____

Date of Investigation: _____ Date of Incident: _____ Time of Incident: _____ AM PM

Date Reported to Superintendent: _____ Time Reported to Superintendent: _____ AM PM

Date Reported to Benchmark's Office: _____ Time Reported to Benchmark's office: _____ AM PM

Names of Witness(s) / Coworker(s): _____ _____

Weather / Wind Conditions: _____

Pictures Taken: YES NO Person Who Took Pictures: _____

List / Describe all PPE in use by the person(s) involved / injured:

COMPLETE IF INJURY OCCURRED (If more than one employee was injured fill out a separate report and attach.)

Employee's Name: _____ Time Employee Began Work: _____ AM PM

Skill: _____ Years in Skill: _____ Years With Company: _____

What was the employee doing just before the accident occurred? Describe:

What object / substance directly harmed the employee: _____

What type of injury did the employee sustain? Describe:

Treated in ER: YES NO Hospitalized: YES NO Clinic/Hospital Name: _____

Did Death Occur: YES NO If Yes, Date: _____ Time: _____ AM PM

COMPLETE IF PROPERTY DAMAGE OCCURRED

Owner of Property Damaged: _____

What type of damage occurred? Describe:

Is damaged property secured / maintained: YES NO Person Maintaining Property: _____

COMPLETE IF CHEMICALS WERE INVOLVED

Name(s) of Chemical(s) Encountered: _____ _____

_____ _____ _____

Chemical Form: Solid Liquid Gas Vapor Dust Mist Fume Volume / Quantity Released: _____

Describe Radiological Materials if any: _____

DETAILED DESCRIPTION (Always Complete)

Describe the Incident In depth:

What corrective actions are being taken to prevent recurrence? List the names of individuals responsible for implementing these actions and the target completion date for each item:

Involved / Injured:	_____ Signature	_____ Print Name	_____ Date
Superintendent:	_____ Signature	_____ Print Name	_____ Date
Investigator:	_____ Signature	_____ Print Name	_____ Date
Witness:	_____ Signature	_____ Print Name	_____ Date

Tab 6
Project Manager Job Site Report

Date: _____

Project Number: _____ **Project Name:** _____

Project Manager: _____ **Superintendent:** _____

Site Check List

	Yes / No
SWPP plan on site and inspection reports up to date?	_____ _____
MSDS sheets onsite and readily accessible?	_____ _____
Construction documents are current?	_____ _____
Daily job reports are up to date?	_____ _____
Weekly safety audit and meeting reports are up to date?	_____ _____
Job Hazard Analysis report has been completed?	_____ _____

Notes:

Signature: _____

Tab 7
DWC-1

DWC FORM-001
(Employer's First Report of Injury or Illness)

The **employer** is required to file an **Employer's First Report of Injury or Illness** [DWC FORM-001 Rev. 10/05] with the injured worker's insurance carrier, and the injured claimant or the claimant's representative within 8 days after the employee's absence from work or receipt of notice of occupational disease.

The **Employer's First Report of Injury or Illness** provides information on the claimant, employer, insurance carrier and medical practitioner necessary to begin the claims process. Details of the claimant's employment and circumstances surrounding the injury or illness are also requested.

Send the specified copies to your **Workers' Compensation Insurance Carrier** and the injured employee. ***Employers - Do not send this form to the Texas Department of Insurance, Division of Workers' Compensation, unless the Division specifically requests a direct filing.**

[Workers' Compensation Rule 120.2]

INSTRUCTIONS FOR EMPLOYERS FIRST REPORT OF INJURY OR ILLNESS (DWC FORM-001)

Type (or print in black ink) each item on this form. Failure to complete each item may delay the processing of the injury claim.

Section 409.005, Texas Workers' Compensation Act, requires an Employer's First Report of Injury or Illness (DWC FORM-001 Rev. 10/05 to be filed with the Workers' Compensation Insurance Carrier not later than the eighth day after the receipt of notice of occupational disease, or the employee's first day of absence from work due to injury or death. A copy of this report must be sent to the employee or the employee's representative. For purposes of this section, a report is filed when personally delivered, or postmarked. Send the specified copies to your **Workers' Compensation Insurance Carrier** and the injured employee. ***Employers - Do not send this form to the Texas Department of Insurance, Division of Workers' Compensation, unless the Division specifically requests a direct filing.**

If a report has not been received by the carrier, the employer has the burden of proving that the report was filed within the required time frame. The employer has the burden of proving that good cause existed if the employer failed to file the report on time.

An employer who fails to file the report without good cause may be assessed an administrative penalty. An employer who fails to file the report without good cause waives the right to reimbursement of voluntary benefits even if no administrative penalty is assessed.

Once the employer has completed all information pertaining to the injury the employer should maintain the copy of this report to serve as the Employer's Record of Injury required by Section 409.006. Send the specified copies to your **Workers' Compensation Insurance Carrier** and the injured employee. ***Employers - Do not send this form to the Texas Department of Insurance, Division of Workers' Compensation, unless the Division specifically requests a direct filing.** The Division's Health and Safety will use data from this report for the Job Safety Information System established in Section 411.032 of the Texas Workers' Compensation Act.

This report may not be considered admission or evidence against the employer or the insurance carrier in any proceeding before the Division or a court in which facts set out in the report are contradicted by the employer or insurance carrier.

"SPECIAL INSTRUCTIONS FOR CERTAIN ITEMS"

Items 2,7,8:	Section 402.082, Texas Workers' Compensation Act requires the Division to maintain information as to the race, ethnicity and sex on every compensable injury. This information will be maintained for non-discriminatory statistical use.
Item 4:	If no home phone, please provide a phone number where the employee can be reached.
Items 5,15,17, 26,29,30:	Enter data in month, day, year format. Example: 08-13-54.
Item 18:	List nature of accident or exposure, e.g., fall from scaffold, contact with radiation, etc. If occupational disease, so state.
Item 19:	List specific body part, e.g., chin, right leg, forehead, left upper arm, etc. If more than one body part is affected, list each part.
Item 20:	Describe in detail (1) the events leading up to the injury/illness, (2) the actual injury, e.g., cut left forearm, broken right foot, etc., and (3) the reason(s) why accident/injury occurred. Use an additional sheet of paper if necessary.
Item 22:	State the exact work-site location of the injury, e.g., construction site, office area, storage area, etc.
Item 24:	List object, substance, or exposure that directly inflicted the injury or illness, e.g., floor, hammer, chemicals, etc.
Items 32,33:	Enter date in month-year format. Example: 02-56.
Item 37:	Enter the number of days or hours that make up a full work week for your employees.
Item 45:	Enter the 6-digit North American Industry Classification System (NAICS) Code of the employer. The primary code is the code which appears in block 5 of Form C-3, "Employer's Quarterly Report" to the Texas Workforce Commission.
Item 46:	For companies with a single NAICS code, the specific code is the same as the primary code. For companies with multiple NAICS codes, enter the code that identifies the specific business, activity, or work-site location the employee was working in at the time of the injury. This may or may not be the same as the primary code.

Send the specified copies to your Workers' Compensation Insurance Carrier and the injured employee.

*Employers - Do not send this form to the Texas Department of Insurance, Division of Workers' Compensation, Unless the Division specifically requests a direct filing.

CLAIM # _____

CARRIER'S CLAIM # _____

EMPLOYERS FIRST REPORT OF INJURY OR ILLNESS

1. Name (Last, First, M.I.)
2. Sex F ☐ M ☐
3. Social Security Number - -
4. Home Phone ( )
5. Date of Birth (m-d-y) - -
6. Does the Employee Speak English? If No, Specify Language YES ☐ NO ☐
7. Race White ☐ Black ☐ Asian ☐
8. Ethnicity Hispanic ☐ Native American ☐ Other ☐
9. Mailing Address Street or P.O. Box
City State Zip Code County
10. Marital Status Married ☐ Widowed ☐ Separated ☐ Single ☐ Divorced ☐
11. Number of Dependent Children
12. Spouse's Name
13. Doctor's Name
14. Doctor's Mailing Address (Street or P.O.Box)
City State Zip Code

15. Date of Injury (m-d-y) - -
16. Time of Injury : am ☐ pm ☐
17. Date Lost Time Began (m-d-y) - -
18. Nature of Injury*
19. Part of Body Injured or Exposed*
20. How and Why Injury/Illness Occurred*
21. Was employee doing his regular job? YES ☐ NO ☐
22. Worksite Location of Injury (stairs, dock, etc.)*
23. Address Where Injury or Exposure Occurred Name of business if incident occurred on a business site
Street or P.O. Box County
City State Zip Code
24. Cause of Injury(fall, tool, machine, etc.)*
25. List Witnesses
26. Return to work date/or expected (m-d-y) - -
27. Did employee die? YES ☐ NO ☐
28. Supervisor's Name
29. Date Reported (m-d-y) - -

30. Date of Hire (m-d-y) - -
31. Was employee hired or recruited in Texas? YES ☐ NO ☐
32. Length of Service in Current Position Months _____ Years _____
33. Length of Service in Occupation Months _____ Years _____
34. Employee Payroll Classification Code
35. Occupation of Injured Worker
36. Rate of Pay at this Job $_____Hourly $_____Weekly
37. Full Work Week is: _____ Hours _____ Days
38. Last Paycheck was: $_____ for _____ Hours or _____ Days
39. Is employee an Owner, Partner, or Corporate Officer? YES ☐ NO ☐

40. Name and Title of Person Completing Form
41. Name of Business
42. Business Mailing Address and Telephone Number Street or P.O. Box Telephone ( )
City State Zip Code
43. Business Location (If different from mailing address) Number and Street
City State Zip Code
44. Federal Tax Identification Number
45. Primary North American Industry Classification System Code:(6 digit)
46. Specific NAICS Code (6 digit)
47. Texas Comptroller Taxpayer No.
48. Workers' Compensation Insurance Company
49. Policy Number
50. Did you request accident prevention services in past 12 months? YES ☐ NO ☐ If yes, did you receive them? YES ☐ NO ☐
51. Signature and Title (READ INSTRUCTIONS ON INSTRUCTION SHEET BEFORE SIGNING)
X _____ Date _____

Tab 8
DWC-6

DWC FORM-6
Supplemental Report of Injury

DWC requires the reporting of all Return to Work and Post-Injury Change of Earnings. An injured worker is entitled to temporary income benefits if he/she has disability (defined as the inability to work, or the inability to earn wages equivalent to pre-injury wages, as a result of the injury) and has not reached maximum medical improvement (defined as having reached 104 weeks from the eighth day of lost time or when a doctor certifies that no further recovery can be reasonably anticipated). The insurance carrier shall adjust the weekly amount of temporary income benefits paid to the injured worker to match the fluctuations in weekly earnings after the injury. To ensure the insurance carrier has accurate information to calculate benefits, the DWC FORM-6 is to be completed as applicable:

By EMPLOYER	By INJURED WORKER
The **EMPLOYER** means the employer for whom the injured worker was working when the injury occurred. If the employer is the current employer, then you are responsible to provide information to the workers' compensation insurance carrier about: • The existence of earnings, and • The amount of any earnings, or • Any offers of employment. Include CLAIM and insurance carrier numbers in right upper hand corner. Complete items 1-21, sign and date.	If you (the **INJURED WORKER**) are no longer employed by the employer where the injury/illness occurred, then you are responsible to provide information to the workers' compensation insurance carrier about: • The existence of earnings, and • The amount of any earnings, or • Any offers of employment. This form may be used to do so. Include CLAIM and insurance carrier numbers in right upper hand corner. Complete items 1-4, 10-21, sign and date.
The EMPLOYER must file this form: • **For** a worker's injury/illness that occurs after January 1, 1991 and required the previous filing of a DWC FORM-1, Employer's First Report of Injury; and • **During** the time the injured worker is entitled to temporary income benefits (TIBs); and • **Until** the injured worker: ➢ Reaches maximum medical improvement (MMI), or ➢ Is no longer employed by the employer.	If you are employed by a new employer after the injury; and • You are receiving benefits, you must tell the insurance carrier if your wages change, regardless of whether your income went up or down; or • You are *not* receiving benefits, you must tell the insurance carrier if the injury causes you to miss work or lose income.

This report must be filed in the following situations within the timeframes indicated:
- 3 days after the injured worker begins to lose time from work as a result of the injury, if lost time did not occur immediately following the injury;
- 3 days after the injured worker returns to work;
- 3 days, when the injured worker returned to work, then later has additional day(s) of lost time as a result of the injury;
- 10 days after the end of each pay period in which the injured worker has a change in earnings as a result of the injury;
- 10 days after the injured worker resigns or is terminated.

While most of the sections on this form are self-explanatory, please note that the pay periods requested in sections 20 & 21 may be different depending on the situation for which the form is being filed:
- If the report is indicating lost time from work or the end of employment, the pay period shall be the most recent pay period prior to the lost time.
- If the report is indicating return to work or a change in earnings, the pay period shall be the pay period the injured worker is beginning.

This form is to be filed by first class mail or personal delivery with: • The insurance carrier, and • The injured worker. This report is considered filed when personally delivered or postmarked. **Failure to comply with these filing requirements, without good cause, is a Class D administrative violation, subject to a penalty not to exceed $500.**	**This form is to be filed** by first class mail or personal delivery with: • The insurance carrier. This report is considered filed when personally delivered or postmarked. **If you return to work** for the same employer or a different employer, your temporary income benefits from the insurance carrier must be adjusted. **Failure to report earned wages and/or offers of employment to the insurance carrier who is paying benefits to you is a crime that may result in fines and/or imprisonment.**

TLC§ 409.005 and Rules 120.3 and 129.4 provide the requirements regarding use of this report. The complete rule text is available on the DWC website at: www.tdi.state.tx.us

CLAIM # _____
Carrier # _____

SUPPLEMENTAL REPORT OF INJURY

Part I EMPLOYER INFORMATION

1. Employer business name | 2. Employer phone #

3. Employer mailing address

4. Insurance carrier name

5. Does the employer have return to work (RTW) opportunities available based on the injured worker's current capabilities? yes ☐ no ☐
   If so, identify contact person and phone # _____
6. Has the insurance carrier provided RTW coordination services within the past 12 months? yes ☐ Date _____ no ☐
7. Has the employer requested RTW training from DWC or the insurance carrier? yes ☐ no ☐
8. Has the insurance carrier provided accident prevention services in the past 12 months? yes ☐ Date _____ no ☐
9. Has the employer requested accident prevention services from the insurance carrier? yes ☐ no ☐

Part II REASON FOR FILING THIS REPORT (deadlines vary, see instructions)

10. ☐ a. The injured worker returned to work in either a full or limited capacity: File this report within 3 days.
    ☐ b. The injured worker is earning more or less than the pre-injury wage because of the injury: File within 10 days.
    ☐ c. The injured worker returned, then later had additional lost time or reduced wages as a result of the injury: File within 3 days.
    ☐ d. The injured worker resigned or was terminated from employment: File within 10 days.

Part III INJURED WORKER INFORMATION

11. Injured worker name | 12. SSN (last 4 digits) XXX-XX- | 13. DOI

14. Injured worker mailing address and phone #

15. First day of lost time or reduced wages for this injury (mm/dd/yyyy) | 16. First day of additional lost time or reduced wages (mm/dd/yyyy)

17. Has the injured worker experienced 8 days (cumulative) of lost time or reduced wages as a result of the injury? yes ☐ no ☐
    If yes, the date of the 8th day (mm/dd/yyyy) _____

18. Date of most recent RTW _____
    ☐ Full duty, full pay
    ☐ Limited duty, full pay
    ☐ Limited duty, reduced pay

19. Has the injured worker resigned, been terminated or died? yes ☐ no ☐
    date of resignation _____ date of termination _____ date of death _____
    19a. Reason for resignation/termination _____
    19b. Was the injured worker on limited duty when terminated? yes ☐ no ☐

20. Hours the injured worker was working during the pay period of _____ to _____ : _____ hours per week
    Indicated hours are:
    ☐ Increase from pre-injury
    ☐ Same as pre-injury
    ☐ Decrease from pre-injury

21. Weekly/hourly earnings for the pay period of _____ to _____ : $ _____ weekly or $ _____
    Indicated wages are:
    ☐ Increase from pre-injury wage
    ☐ Same a pre-injury wage
    ☐ Decrease from pre-injury wage

This form to be filed with: ***The employer's insurance carrier and the injured worker in the timeframe as noted in Part II.***

22. To the best of my knowledge the information provided in this report is accurate and may be relied upon for evaluation of eligibility for benefits.
Submitted by: ☐ Employer ☐ Injured Worker *(If no longer working for the employer where injury occurred.)*

_____ _____
Signature and Title of person completing this form | Date

Tab 9
OSHA Form 300 and 300A

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 20__ __

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR Part 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an Injury and Illness Incident Report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Establishment name ____________________

City ____________________ State ____________

Identify the person			Describe the case			Classify the case: CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "Injury" column or choose one type of illness: (M)					
								Remained at Work									
(A) Case no.	(B) Employee's name	(C) Job title (*e.g., Welder*)	(D) Date of injury or onset of illness	(E) Where the event occurred (*e.g., Loading dock north end*)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (*e.g., Second degree burns on right forearm from acetylene torch*)	(G) Death	(H) Days away from work	(I) Job transfer or restriction	(J) Other record-able cases	(K) Away from work	(L) On job transfer or restriction	(1) Injury	(2) Skin disorder	(3) Respiratory condition	(4) Poisoning	(5) Hearing loss	(6) All other illnesses
			/ month/day			☐	☐	☐	☐	___ days	___ days	☐	☐	☐	☐	☐	☐
			/ month/day			☐	☐	☐	☐	___ days	___ days	☐	☐	☐	☐	☐	☐
			/ month/day			☐	☐	☐	☐	___ days	___ days	☐	☐	☐	☐	☐	☐
			/ month/day			☐	☐	☐	☐	___ days	___ days	☐	☐	☐	☐	☐	☐
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			/ month/day			☐	☐	☐	☐	___ days	___ days	☐	☐	☐	☐	☐	☐
			/ month/day			☐	☐	☐	☐	___ days	___ days	☐	☐	☐	☐	☐	☐
					Page totals	___	___	___	___	___	___	___	___	___	___	___	___
												Injury (1)	Skin disorder (2)	Respiratory condition (3)	Poisoning (4)	Hearing loss (5)	All other illnesses (6)

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any other aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistical Analysis, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 20__ __

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no work-related injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing this summary.

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the Log. If you had no cases, write "0."

Employees, former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR Part 1904.35, in OSHA's recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
_____	_____	_____	_____
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
_____	_____
(K)	(L)

Injury and Illness Types

Total number of . . .	(M)		
(1) Injuries	_____	(4) Poisonings	_____
		(5) Hearing loss	_____
(2) Skin disorders	_____	(6) All other illnesses	_____
(3) Respiratory conditions	_____		

Post this Summary page from February 1 to April 30 of the year following the year covered by the form.

Establishment information

Your establishment name _____

Street _____

City _____ State _____ ZIP _____

Industry description (*e.g., Manufacture of motor truck trailers*)

_____

Standard Industrial Classification (SIC), if known (*e.g., 3715*)

___ ___ ___ ___

OR

North American Industrial Classification (NAICS), if known (e.g., 336212)

___ ___ ___ ___ ___ ___

Employment information *(If you don't have these figures, see the Worksheet on the back of this page to estimate.)*

Annual average number of employees _____

Total hours worked by all employees last year _____

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

_____ _____
Company executive Title

( ) - / /
Phone Date

Tab 10
OSHA Form 301

OSHA's Form 301
Injury and Illness Incident Report

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

This *Injury and Illness Incident Report* is one of the first forms you must fill out when a recordable work-related injury or illness has occurred. Together with the *Log of Work-Related Injuries and Illnesses* and the accompanying *Summary,* these forms help the employer and OSHA develop a picture of the extent and severity of work-related incidents.

Within 7 calendar days after you receive information that a recordable work-related injury or illness has occurred, you must fill out this form or an equivalent. Some state workers' compensation, insurance, or other reports may be acceptable substitutes. To be considered an equivalent form, any substitute must contain all the information asked for on this form.

According to Public Law 91-596 and 29 CFR 1904, OSHA's recordkeeping rule, you must keep this form on file for 5 years following the year to which it pertains.

If you need additional copies of this form, you may photocopy and use as many as you need.

Completed by _____

Title _____

Phone (_____)_____-_____ **Date** ____/ ____/ ____

Information about the employee

1) **Full name** _____

2) **Street** _____

City _____ **State** _____ **ZIP** _____

3) **Date of birth** _____ / ____ / _____

4) **Date hired** _____ / ____ / _____

5) ❒ **Male**
❒ **Female**

Information about the physician or other health care professional

6) **Name of physician or other health care professional** _____

_____

7) **If treatment was given away from the worksite, where was it given?**

Facility _____

Street _____

City _____ **State** _____ **ZIP** _____

8) **Was employee treated in an emergency room?**
❒ **Yes**
❒ **No**

9) **Was employee hospitalized overnight as an in-patient?**
❒ **Yes**
❒ **No**

Information about the case

10) **Case number from the *Log*** _____ *(Transfer the case number from the Log after you record the case.)*

11) **Date of injury or illness** _____ / ____ / _____

12) **Time employee began work** _____ **AM / PM**

13) **Time of event** _____ **AM / PM** ☐ **Check if time cannot be determined**

14) ***What was the employee doing just before the incident occurred?*** **Describe the activity, as well as the tools, equipment, or material the employee was using. Be specific.** ***Examples:*** **"climbing a ladder while carrying roofing materials"; "spraying chlorine from hand sprayer"; "daily computer key-entry."**

15) ***What happened?*** **Tell us how the injury occurred.** ***Examples:*** **"When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time."**

16) ***What was the injury or illness?*** **Tell us the part of the body that was affected and how it was affected; be more specific than "hurt," "pain," or sore."** ***Examples:*** **"strained back"; "chemical burn, hand"; "carpal tunnel syndrome."**

17) ***What object or substance directly harmed the employee?*** ***Examples:*** **"concrete floor"; "chlorine"; "radial arm saw."** ***If this question does not apply to the incident, leave it blank.***

18) ***If the employee died, when did death occur?*** **Date of death** _____ / ____ / _____