MAGNUM CONSTRUCTION COMPANY

INCORPORATED

SAFETY MANUAL

FOR CONSTRUCTION & ERECTION OF STRUCTURAL STEEL

FOR ALL PROJECTS

PROPRIETARY TO MAGNUM CONSTRUCTION COMPANY, INC.

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POLICY STATEMENT

By adherence to this policy, Magnum Construction will support the efforts of their employees in achieving and maintaining injury free work environments.

We believe the highest level of quality and productivity can be achieved while avoiding incidents or unplanned safety occurrences that result in injury to employees, interruption of productivity, and/or damage to equipment or property.

Signed _____Title _____

Policy Objectives and Goals

The objectives of this policy will be to:

1. Establish responsibility and accountability.
2. Implement Safety Action Plans and Procedures.
3. Provide a work environment free of recognizable hazards.

The objectives of this policy will support our goal of zero injuries.

Manual Updating

Responsibility for updating this manual is that of the company Safety Director. The procedure for changes and updates shall be as follows:

1. The new page(s) showing the subject change and a revision date will be given to each supervisor.
2. Supervisors will remove the old page(s)from their copy of the manual and insert the revised page(s).
3. Supervisors shall then inform all employees under their supervision of the change and enforce that change as a company safety rule

BARRICADES

- Barricades will be used to warn of existing hazards such as electrical, overhead, chemical, or other.
- Barricades shall bear a tag stating the date of erection, type of hazard, who to contact for permission to cross, and expected date of removal.
- The use of colored tape for barricading will be for warning of hazards only. Physical protection such as standard guard rails or covers meeting OSHA requirements will be used whenever required (i.e. floor openings).
- Prior approval of the assigned supervisor is required before barricading any traffic way that may affect emergency vehicles.
- Before barricading any area that redirects vehicle or pedestrian traffic, a safe means of re-routing the traffic shall be identified as needed.

MAGNUM CONSTRUCTION COMPANY INC.

BEHAVIOR BASED SAFETY

The intent of this procedure is to provide a means of identifying, tracking, and eliminating at risk behaviors that lead to unplanned events and employee injuries.

General Information

Over 90% of incidents are the result of unsafe actions. Unsafe actions are nothing more than the behavior that results from a triggered event.

While the event may be beyond that employee's control, the action (behavior) that results can be identified and modified to reduce at risk behaviors.

General Procedures/Roles

1. **Management**
   A. The role of management is to identify at risk behaviors by reviewing incident reports and audit results.
   B. Identify and train observers to record and track employee behaviors.
   C. Develop in-house consequences both negative and positive that will result in development of habit strength safe behavior. For tracking purposes, 95% will be considered habit strength.
   D. Record and provide feedback to all employees on the results of observations.
2. **Observers**
   A. Using 1 to 3 Management identified behaviors, the observers will record daily observations of the behaviors.
   B. For each behavior documented, an intervention and/or consequence must take place.
   C. Documented observations will be provided to Management.
   D. Once the at risk behaviors reach a safe habit strength, the observers will meet with Management to identify 1 to 3 new at risk behaviors for observation.

BLOOD-BORNE PATHOGENS

Exposure to blood or other body fluids is a major concern because of the risk of infection by viruses that can cause diseases such as Acquired Immune Deficiency Syndrome (AIDS) and Hepatitis B.

Employees are not required to perform tasks that involve exposure to blood or other potentially infectious materials on a routine or non-routine basis as a condition of employment. Nor do employees, as a normal part of their duties and responsibilities, perform or assist in emergency medical care or first aid and are not reasonably anticipated to be exposed in any other way. Therefore, the exposure control plan, precautions, engineering controls, work practices etc. required of HIV and the Hepatitis Virus Research laboratories, production facilities, hospitals, family doctors etc. is not required as a condition of employment.

However, employees shall be provided training in the use of personal protective equipment, decontamination procedures, and waste disposal procedures so that exposure to blood or other body fluids can be safely and intelligently handled.

A "blood borne pathogens infection control kit" will be kept at each job site location under the control of the site supervisor. Exposure control plans will be posted at the site when applicable.

A complete first-aid kit, including protective equipment shall be available at each job site. This kit shall contain a face shield and latex gloves for personal protection, germicidal towelettes, a blood borne pathogen destroying cleaning solution for surfaces contaminated with body fluids(it contains sodium hypochlorite), chlorinated absorbent beads, a small shovel, blanket, and plastic bags for used, exposed, contaminated items.

Normal work activities are not reasonably expected or anticipated to expose employees to blood borne pathogens. The provisions of General Industry Regulations 1910.1030 are herein incorporated by reference for non-routine tasks and/or in the event an employee is assigned the responsibility to perform first aid.

Additional procedures for non-routine tasks and/or assigned first aid responders will include the following:

1. **Training**
   A. First aid and infectious hazard training will be provided before being assigned to any task that may reasonably result in exposure
   B. This training will be provided by the American Red Cross or equivalent agency approved by Management.
   C. The training will be renewed annually and/or when there is a change in Federal Standard 1910.1030.
   D. The training will be provided at no cost to the employee.
   E. All training records will include the name of the trainee, the trainer, the dates of training, and documented proof of understanding. Records will be maintained for 3 years and be made available to employees upon request by contacting the Safety Director.
2. **Personal Protective Equipment**
   A. PPE will be provided for the employee at no cost to the employee.
   B. **PPE will include as a minimum:**
      1. Latex gloves
      2. Face shield
      3. Non-contact breathing mask for CPR
      4. Disposable coveralls

3. General

A. All body fluids shall be considered as hazards.
B. In the event of exposure or potential exposure, the site foreman will prepare a written incident report to Management within 24 hours.
C. Any employees exposed, potentially exposed, or assigned as first aid responders will be offered Hepatitis B vaccinations at the company's expense.
D. Potential exposure will be considered to have occurred regardless of the PPE being used by the first aid responder.
E. In the event of any exposure incident all involved surfaces shall be decontaminated using the infection control kit provided at all sites. Clothing and other exposed material shall be bagged and identified as a biohazard using tags or stickers as shown. The bags shall then be disposed of in accordance with the local Department of Public Health rules.

4. Any medical records of exposure or treatment shall be placed in the employee's personnel records and retained for so long as Magnum is in existence plus 30 years.
5. Any potential exposure event not covered by this procedure must be reported to management.

CONFINED SPACE ENTRY PROCEDURE

DEFINITION:

A confined space is defined as any space which has limited openings for employee entry and exit, unfavorable natural ventilation, could contain or produce dangerous concentrations of air contaminants, bulk or loose material that could engulf an employee, and which is not intended for continuous employee occupancy. They include, but are not limited to: storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, pipelines, open top spaces more than four feet in depth such as pits, tubs vaults, or vessels.

CONFINED SPACE TRAINING REQUIREMENTS

1. The following training must be provided before any employee is assigned to a confined space operation.
2. Refresher or revised training will also be required annually or anytime a new hazard results from a change of assignment or location.
3. All training must be documented and include the date of training, the subject of the training, the name of the trainer, and the name of the employee being trained. Employees must score at least 90% on the written test.
4. Current training records will be maintained and be made available for inspection when required by the customer or OSHA regulations.
5. The effectiveness of training and compliance with this procedure will be reviewed by Management annually.

ALL EMPLOYEES

All employees will receive hazard recognition and awareness training for confined spaces during New Hire Orientations.

OBSERVERS/ATTENTDANTS

No attendant may be assigned to more than one entry space at a time. No employee may be assigned as an outside attendant or observer until they have had documented training in the performance of their duties including the following:

1. Emergency procedures for calling rescue personnel. This must be site detailed and applies to each assigned confined space.
2. Proper inspection and maintenance of all personal protective equipment and non-entry rescue equipment.
3. Hazards of each space they are assigned.
4. Control and reporting of unplanned events.
5. Accountability of all confined space entrants.
6. Non-entry rescue procedures.

ENTRANTS

No employee may enter a confined space for any reason (including emergency rescue) until they have had documented training on all hazards and precautions to be taken for each identified confined space.

MINIMUM REQUIREMENTS:

Each confined space shall be identified and posted as: "Danger! This is a confined space! Do not enter without a permit!" Personnel and vehicle barriers will be erected as needed to protect the entrants.

Before a confined space is entered, and when requested by entrants, its atmosphere must be tested with reliable instrumentation maintained in operable condition by personnel trained and proficient in its use to determine if there is:

a. An oxygen deficiency
b. Toxic gases or vapors
c. Combustible or flammable gases or vapors

Results of testing will be reviewed with all entrants.

1. A list of authorized supervisors, entrants, and attendants must be obtained from the office after a review of current training records has been done and before any confined space is entered.
2. During the pre-hazard review, all procedures for non-entry rescue will be developed. If non-entry rescue is not possible, an outside professional rescue service shall be used.
   When outside services are used for rescue they must be advised in advance of the entry and given the opportunity to conduct a practice rescue.

3. In the event an outside service must be called for emergencies, the emergency phone number and directions to the confined space must be listed on the entry permit posted at the confined space entrance.
4. The confined space checklist and permit are valid for 8 hours only. A new checklist must be issued.
5. All confined space entry checklists and permits must be returned to the office and maintained for at least 1 year.
6. Following all confined space entry operations, the attendant and supervisor will review the operation and note any concerns or unplanned events on the bottom of the permit.
7. The assigned confined space attendant will, at their discretion, stop all activities, order space evaluation, and/or order a re-evaluation of the hazard, anytime they feel conditions have changed or a new hazard has developed.

The possibility of engulfment of an employee by bulk or loose material must also be considered. If any of these hazards exist, the hazard must be controlled by use of ventilation equipment, safety harnesses, lifelines, constant monitoring, or other measures deemed appropriate by the authorized supervisor.

A determination shall be made by the authorized supervisor as to whether or not the confined space will include work-induced hazards such as welding, brazing, burning, cutting, use of chemicals, cleaning compounds, coal dust, painting, etc. If such a hazard exists, appropriate measures shall be taken such as supplying adequate mechanical ventilation, use of self-contained breathing apparatus, or other appropriate respiratory equipment.

The authorized supervisor must determine if there is powered equipment within the space which could unexpectedly release energy i.e. mechanical, pneumatic, hydraulic, electric, etc. and cause injury to employee. If such equipment is in the space, it shall, in accordance with OSHA Lockout Procedure Requirements, be locked in the off position, with residual energy neutralized,

and parts that could move by gravity or spring action are effectively blocked.

The authorized supervisor shall determine of the space does or does not have limited entrance and exit. Appropriate plans, equipment, and

trained stand-by personnel shall be made available to effect any needed rescue. The stand-by rescue personnel and persons to enter the space shall have their duties outlined and documented by the authorized supervisor prior to entry.

If a rescue would require vertical lift out, either mechanical lift out by equipment (such as ratchet type winch) or additional stand-by personnel shall be present to affect any necessary rescue. All equipment to be used during the entry and for rescue purposes mush be properly inspected and be in operable condition before entry is made.

The authorized supervisor shall determine if other hazards exist or could develop in the space and advise affected personnel of means to control them. This determination must include any work being performed by others in or around the confined space.

Prior to entry into a confined space, the authorized supervisor will issue an entry permit to those employees who will enter after giving full consideration to the about MINIMUM requirements.

DUTIES OF ENTRY SUPERVISOR

1. The supervisor shall be knowledgeable of the hazard present during any entry, including information on the mode signs or symptoms and consequences of exposure.
2. The supervisor must also verify the appropriate entries have been made on the permit, insuring that all required atmospheric tests have been done.
3. The supervisor must also verify that all equipment and procedures are in place before signing the permit.
4. The supervisor shall terminate the entry and cancel the permit any time an unexpected hazard is identified and not immediately corrected.
5. The supervisor shall insure that rescue services are available and any means for calling them is known by the entry attendant.
6. The supervisor shall insure that unauthorized individuals are not allowed to enter or attempt to enter the confined space.
7. The authorizing supervisor shall insure that all required safety information regarding hazards and precautions and emergency

plans have been communicated to any supervisory personnel taking over the responsibilities of the confined space entry.
8. All unplanned events or violations of this procedure must be reported to and reviewed by management.

NOTE: Entry supervisors must score 100% on a confined space knowledge test and be approved by management.

DUTIES OF AUTHORIZED ENTRANTS

1. All entrants shall be knowledgeable of the hazards involved with the confined space they are entering, including signs and symptoms as well as consequences of any exposure.
2. All entrants must be trained in the proper use and limitations of all required safety equipment.
3. Entrants must maintain communication with the outside attendant at all times.
4. Entrants must alert the attendant any time they recognize the warning signs or symptoms of exposure or other hazardous situation.
5. Entrants must exit the confined space anytime they detect any condition that creates a hazard they have not been trained on or protected against.
6. Entrants will exit the confined space anytime an evacuation alarm is sounded that affects the area of their work.

DUTIES OF ATTENDANT

1. The attendant must know the hazards faced during entry including information on the mode signs or symptoms and consequences of exposure.
2. The attendant must be aware of possible behavioral effects of the hazardous exposures in authorized entrants.

3. Continuously maintain an accurate account of authorized entrants in the permit space.
4. Remain outside the permit space during entry operations until relieved another attendant.
5. Maintain contact with the authorized entrants as necessary to monitor entrants as an inference if the need to evaluate the space when conditions change.

6. Monitor inside and outside the space to determine if it is a danger to remain in the space and orders the authorized entrants to evacuate the permit space immediately under any of the following conditions.
   a. If a prohibited condition is detected.
   b. If the attendant detects the behavioral effects of an exposure in the authorized entrants.
   c. If the attendant detects a situation outside the space that could endanger the authorized entrants.
   d. If the attendant cannot effectively and safely perform all of his duties.
   e. The attendant will call emergency services as soon as the attendant determines that the authorized entrants may need assistance to escape from the permit space hazards.
   f. The attendant will take the following action when unauthorized persons approach or enter a permit space while entry is underway.
      1. Notify the unauthorized persons that they must stay away from the permit space.
      2. Advise the unauthorized persons that they must exit immediately if they have entered the permit space and inform the authorized entrants and entry supervisor when unauthorized persons have entered the permit space.
7. No attendant is allowed to observe more than one entry at a time.
8. Emergency rescue service numbers must be posted by the attendant at each entry space. No attendant is to enter a confined space for rescue.
9. No entry into immediate dangers to life and health spaces are allowed under this procedure.

   Outside or customer supplied rescue services must be notified of the entry and offered an opportunity to perform a practice rescue.

CONFINED SPACE CHECKLIST

Confined Space Identification _____

(Confined Space to be Entered)

1. This space has been tested for and cleared of the following hazards: YES NO

a. Oxygen Deficiency ☐ ☐
b. Toxic Atmosphere ☐ ☐
c. Explosive/Flammable Atmosphere ☐ ☐

2. This space will include work-induced hazards (i.e. welding, brazing, cutting, use of chemicals, solvents, cleaning compounds, coal dust, painting, etc.) YES ☐ NO ☐

3. Rescue entry equipment (including Personal Protective Equipment – PPE)

YES NO

a. If yes, list equipment required: ☐ ☐

_____

_____

b. If air-supplied respirators are required, have users been trained in their use and have they been fit-tested?

YES ☐ NO ☐

4. Does confined space have a limited exit/entrance?

YES ☐ NO ☐

5. Is trained stand-by rescue person required?

YES ☐ NO ☐

a. If so, have stand-by person's duties been outlined and reviewed? YES ☐ NO ☐

b. Has stand-by person's rescue/PPE been inspected and is it immediately available? YES ☐ NO ☐

6. Are confined space signs posted at the entrance/exit?

YES ☐ NO ☐

7. Ventilation for confined space has been established by the following means:

_____

_____

_____

_____

8. List possible atmosphere contaminants:

_____

_____

_____

_____

9. List any additional hazards that could exist or develop in this space that personnel should be aware of:

_____

_____

_____

_____

10. Was practice session held for effective rescue procedures?

	YES	NO
	☐	☐

11. Was Job Safety Analysis performed –including this checklist?

a. If yes, date and time: _____

YES	NO
☐	☐

b. Persons present at JSA:

_____

_____

_____

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CONFINED SPACE ENTRY PERMIT

This Permit expires at _____on _____. No confined space permit may be valid for more than 8 hours. If work takes longer, a new permit must be issued.

Equipment Name/No._____ Emergency Phone# _____

Building: _____ Bay: _____

OK to Enter: ☐ YES ☐ No

Emergency Directions to location:

_____
_____
_____
_____

Employees Assigned

_____ _____
_____ _____
_____ _____

Stand-By Observer(s)

_____ _____
_____ _____
_____ _____

Are there any precautions that should be taken?

_____
_____
_____

Has the space been tested for:

Oxygen Deficiency	☐ YES	☐ NO
Combustibility	☐ YES	☐ NO
Toxicity	☐ YES	☐ NO
Engulfment	☐ YES	☐ NO

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CONFINED SPACE PERMIT

When multiple confined spaces are entered, each space must have a separate checklist, permit, and attendant.

Review of work operation/unplanned events or concerns and comments:

_____
_____
_____
_____

Currently trained and authorized employees to work under this permit must be listed below.

Note: Current training is to be approved by the entry supervisor

Authorized Attendants

_____ _____
_____ _____

Authorized Entrants

_____ _____
_____ _____

Entry Supervisors Authorized by Management

_____ _____

DAILY PLANNING AND AUDITS

DAILY SAFETY PLANNING

The intent of this procedure is to prevent unplanned events and incidents that result from a lack of planning regarding routine and daily tasks.

General Task Planning

1. Each day each crew will discuss the tasks and hazards of their planned activities. This discussion will attempt to identify each hazard of each task and the protective action to be taken.
2. The discussion will take place each day prior to starting the tasks and will be documented using a daily safety plan sheet or SAC Card.
3. Individual employees working alone will pre-plan their assigned tasks using the same documentation.
4. The field supervisor will spot review a daily sample of these plan sheets or cards to assure they are being used for the full benefit of the procedure.
5. The Safety Director will monitor the sheets and/or cards to identify the training and personal protective equipment needs of the company based on the hazards that are being identified on a regular basis.

AUDITS

Safety audits are done weekly for a number of very good reasons.

1. They help point out conditions that could result in an employee injury. These conditions can then be corrected.
2. They increase employee safety awareness. This awareness results from the employee taking part in the audits and/or reviewing the audit results.
3. They provide an excellent source of documentation that unsafe conditions are corrected. Corrected action should be marked on the audit.
4. When repeat items are found on audits, it can be used as an indicator of training needs.
5. When done correctly, they uncover the hazards that result in injuries.

Audits are not and should not be used to find fault or be filled out just to have something to turn in. Jobsite safety audits are a tool of our program, and like any tool, they must be used correctly.

Regularly checking your work area for safety hazards is the responsibility of each employee.

Reporting unsafe conditions is also the responsibility of each employee.

Properly using the safety audit sheet is the easiest way to meet those responsibilities.

DRUG AND ALCOHOL POLICY

We believe everyone has a right to work in a drug free environment. To protect both our employees and our customers, we are committed to identifying and assisting the victims of drug and alcohol abuse. Our attempts to meet this commitment are explained in the following policy.

STATEMENT OF POLICY:

No employee will be allowed to enter or remain on company or customer property while in possession of or under the influence of any alcoholic beverage or illegal drug. Employees found in violation of this policy are subject to discharge.

RESPONSIBILIITIES:

Employees and Supervision are equally responsible for reporting violations of this policy.

MANAGEMENT:

The final responsibility for communicating, supporting, and actively enforcing this policy is that of the owner or his designee.

SUPERVISION:

The day to day responsibility for ensuring that employees comply with all areas pf this policy is that of the Field Supervisor.

EMPLOYEES:

Each employee is responsible for remaining free from the influence of alcohol and illegal drugs during all work related activities.

SCOPE OF POLICY:

This policy applies to all company and customer property, vehicles, and equipment. This policy applies to all levels of company employment and all company supervised work activities.

SUBSTANCE ABUSE TESTING:

**PRE-EMPLOYMENT:

New hire employees must pass a pre-employment drug test or provide the results of a prior drug test taken and passed within six months prior to hire date.

**FOR-CAUSE TESTING:

Employees actions and/or behavior that are, in the judgment of Management, suggestive of drug or alcohol abuse, will be cause to require a drug or alcohol test.

**SUBSTANCE ABUSE RECOGNITION TRAINING:

Only those Management/Supervisors who have completed Drug and Alcohol Abuse Recognition training (1 hour for each subject) may make the judgement as to whether cause exists.

**POST-INCIDENT TESTING:

Employees found to be responsible for personal injuries that result to themselves or other which involve restrictions of work activities or property damage greater than $500.00 will at the judgement of Management be required to pass a drug and alcohol test.

**CUSTOMER REQUIRED TESTING:

Employees prior to being assigned to work on a customer's property will be made aware of the customer's drug and alcohol policy. All customer-testing requirements will be met prior to assigning employees to perform work for that customer.

Employees who test positive for the presence of drugs or alcohol will be given the opportunity to explain the results or retest within 72 hours. (Positive test for alcohol shall be a blood alcohol level greater than 0.02) It shall be the judgement of Management as to the acceptability of the employee's explanation of the positive results. No employee testing positive twice in a 12 month period will be considered for further employment.

EMPLOYEE ASSISTANCE:

All employee requests of Management for assistance for a drug or alcohol problem shall be kept confidential. Upon employee requests of Management for assistance, the employee will be referred to a local support or service organization for evaluation and treatment. Use of any suggested sources of treatment shall be at the employee's discretion. Unless covered by insurance or other agreements, all expenses shall be the employee's responsibility.

RE-INSTATEMENT OF EMPLOYEE:

Employees discharged for violation of this policy are not subject to rehire until all the following conditions are met:

1. No request will be considered for a period of 60 days from date of discharge.
2. Employee must have participated in a licensed rehabilitation program.
3. They must provide proof that they are drug free and agree to random testing during a 90 day rehire probationary period.

AMERICANS WITH DISABILIITES ACT (ADA)

The ADA neither requires nor prohibits drug and alcohol testing. The act does, however, protect employees who remain drug free while completing a supervised rehabilitation program.

GENERAL ELECTRICAL SAFETY

Qualified Person: A person who, by documented training and experience, is knowledgeable of the operation to be performed and the hazards involved. The qualified person will also have the authority and knowledge to take prompt corrective action to eliminate the hazards. A list of qualified persons will be maintained by the Safety Director at the main office.

Unqualified Person: A person with little or no training to recognize electrical hazard associated with the operation of equipment or the task assigned. No unqualified person may be exposed to the risk of shock until they have been trained in safe clearances and found proficient in basic electrical related safe work practices.

GENERAL ELECTRICAL SAFETY

1. Only qualified persons will be allowed to work on electrical equipment that cannot be de-energized and then only when protected from contact with an electrical hazard.
2. Qualified persons must have training in the selection, use, testing, and limitations of personal protective equipment such as flash hoods, capes, gauntlet gloves, hot sticks, and testing equipment and shielding material.
3. Both unqualified and qualified workers must be trained in and proficient in the use and purpose of the lockout/tagout system. This training will require at least 1 year refreshers.
4. Both unqualified and qualified workers will be trained in confined space-related electrical hazards before being assigned a task involving confined spaces. A minimum of 10 foot candle lighting is required. The use of lockout/tagout and/or protective barriers is mandatory when needed.
5. All 120 volt single phase 15 and 20 ampere receptacle outlets will have approved ground fault circuits interrupters (GFCI) when not part of the building's permanent wiring. This includes double insulated tools.
6. Only wood or fiber glass ladders will be used when there is a possibility of contact with an electrical hazard.

7. No electrical conductive jewelry such as rings, earrings, watches, pins, or metals shall be worn by any employee working within 10 feet of exposed electrical equipment or circuits. Goggles shall be worn over metal frames of eye glasses when required.

8. No equipment or materials such as vehicles, scaffolds, aerial lifts, hi-lows, metal pipes, or other conductive material will be used or stored within 10 feet of exposed electrical equipment.

9. All employees shall maintain a minimum of 10 feet clearance under and/or next to exposed energized overhead electrical lines of 50 volts or greater.

10. The minimum lighting in any work area is 10 foot candles. For purposes of this procedure, you must be able to see electrical hazards at no less than 6 foot 3 inches away.

11. No work by unqualified workers may take place within 10 feet of movable conductors over 50 volts or 6 feet within fixed conductors over 50 volts.

12. All electrical equipment and switch boxes must be guarded to prevent accidental employee contact with energized circuits.

13. Open electrical equipment where work is being performed must be marked and the area barricaded.

14. All extension cords and welding leads are to be off the floor or ground a minimum of 7 feet or routed out of the normal path of travel.

15. Cords and electrical wiring must not be fastened by staples, hung from nails, or suspended from wires.

16. Electrical cords must not be allowed to lie in standing water.

17. All extension cords must be of the three wire type.

18. All electrical cords and wires must be protected from damage by vehicle traffic, sharp corners, or projections and pinching in doorways.

19. Worn, frayed, or damaged cables and cords must not be used and shall be removed from the work area.

20. All splices of temporary wiring or lights must have insulation equal to that of the original cable or wire and be approved by a qualified employee.

21. When assigned to work in any area where exposure to electrical hazards cannot otherwise be eliminated or controlled, the use of protective insulated barriers is mandatory.

22. All exposed electrical parts shall be treated as energized unless verified by a Qualified Person.

Approach Distance for Qualified Employees	
AC Current	**Approach Distance**
300 Volts or less	Avoid Contact
More than 300 but less than 750V	1’ 0”
More than 750V but less than 2 KV	1’ 6”
More than 2 KV but less than 15 KV	2’ 0”
More than 15 KV but less than 37 KV	3’ 0”
More than 37 KV but less than 87.5KV	3’ 6”
More than 87.5 KV but less than 121 KV	4’ 0”
More than 121 KV but less than 140 V	4’ 6”

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ELEVATING AND ROTATING AERIAL WORK PLATFORMS

No employee may operate equipment (i.e. JLG-condor) without first being trained in the use, limitations, maintenance, and hazards of using the equipment.

The training shall be provided by the assigned supervisor and include a written and hands-on performance test.

The training shall be documented and on file with a certificate or license on the employee's person.

The training is valid for 3 years and only for the issuing employer.

One hundred percent (100%) fall protection by use of a full body harness and dual lanyard is required for all operations that place the work basket 6 feet above the floor or ground.

A minimum of 10 feet from all electrical hazards shall be maintained or the hazard eliminated.

A video shall be used to facilitate the training and contains the following information:

- Modifications to the equipment cannot be made without written approval from the manufacturer.
- Lift controls and equipment are to be tested and inspected prior to each use.
- Only authorized personnel will operate the equipment.
- Load limits are not to be exceeded.
- This is always to be a working back-up alarm or spotter when going in reverse.
- This is to be at least 10 feet of clearance between electrical lines and any part of the equipment.
- Employees will not climb on the rails or the edge of the basket and will maintain both feet on the floor.
- While working in an aerial lift, an approved restraint system shall be worn at all times.
- This restraint will be attached to the boom or basket.

MIOSHA PART 32 AERIAL WORK PLATFORM

KNOWLEDGE TEST OF STANDARD

_____	_____	_____	_____
NAME	**COMPANY**	**DATE**	**INSTRUCTOR**

1. Before you may operate an aerial work platform you must:

   A. Have a valid permit from your current employer

   B. Have hands-on training for the equipment you are using

   C. Both A & B are true

____

2. Directional controls must be the type that return to the off or neutral position when released.

T___ F___

3. You may use the guardrail system to support material as long as you do not exceed the weight capacity of the aerial work platform.

T___ F___

4. Manufacturers or owners operating instructions and safety rules must always be followed.

T___ F___

5. Unsafe items found must be reported and corrected before further use of equipment

T___ F___

6. To avoid pinch points, hands should be inside the plane of the basket when the unit is being raised

T___ F___

7. Minimum overhead line clearance may be reduced if you have permission from your employer and the lines have been insulated with barriers that are not part of the aerial work platform and prevent physical contact.

T___ F___

8. You may never exceed the manufacturer's rated load capacity.

T___ F___

9. You may use the boom or platform to push, pull, or jack the wheels out of soft soil or off the ground.

T___ F___

10. It is OK to field modify aerial work platforms with the owner's approval without contacting the manufacturer.

T___ F___

11. MIOSHA requires you to be tied off when operating a boom supported or vehicle mounted work platform.

T___ F___

12. You may exit an aerial work platform when it is elevated only with your employer's permission and only when it is the safest way to reach your work area.

T___ F___

13. List four things you need to inspect before operating an aerial work platform.

_____ _____

_____ _____

14. How far away from energized electrical power lines should you stay as a minimum?

_____

15. Name 3 things you should watch for and avoid while operating an aerial work platform.

_____ _____

_____

I have completed training on Aerial Work Platforms, MIOSHA Part 32, and reviewed the results of this test with the instructor.

I understand I must complete hands-on training and be issued a permit by my employer prior to operating an aerial work platform.

Choose 1 and complete below:

___ I have unanswered safety related questions as of _____.
DATE

___ I have no unanswered safety related questions as of _____.
DATE

Signature_____

MAGNUM CONSTRUCTION COMPANY INC.

AERIAL WORK PLATFORM TEST

ANSWER SHEET

1. C
2. T
3. F
4. T
5. T
6. T
7. T
8. T
9. F
10. F
11. T
12. T
13. Ground controls, Brakes, Platform Controls, Fluid Leaks

    NOTE: Any other reasonable answers are accecptable for #13

12. 10 feet
13. Holes, overhead clearance, bumps

    NOTE: Any other reasonable answers are acceptable for #15

MAGNUM CONSTRUCTION COMPANY INC.

ENFORCEMENT POLICY

Company Management has full responsibility for executing and enforcing a program of employee protection and accident prevention in all areas of their operations.

The Safety Director and Company Supervisors are charged with advising employees on all matters pertaining to safety and health on the job and full enforcement of this policy.

The success of any safety program is dependent upon full compliance with established company safety regulations. If employee actions vary from these regulations, they are jeopardizing the safety and health of themselves and that of their co-workers. Any variation will be considered a "Safety Violation."

For the above reasons, enforcement actions to be taken for violations of safety regulations are as follows:

- First Offense: Verbal Warning
- Second Offense: Written Warning
- Third Offense: Suspension Without Pay (1-3 days)
- Fourth Offense: Termination

NOTE:

The above actions may be repeated or taken in any order based on the seriousness of the violation and the judgement of Management. However, in all cases any employee receiving 2 written warnings in a 30 day period is subject to termination.

Written warning notices shall be removed from the employee's file one year from the date of issuance.

Site Supervisor's Responsibilities:

1. At least once per shift, each site foreman will inspect their jobsite and correct any safety hazard.
2. Any employee found to have repeatedly or willfully violated a safety policy or procedure of the company will be disciplined and documentation will be supplied to the office.

Management Responsibilities for Enforcement:

A management review of supervisor's commitment to safety will be conducted annually. This review will be used to evaluate the supervisor's contribution to the safety process. Unsatisfactory safety performance by the supervisor will be grounds for removal of the supervisor from their position.

Safety Violations:

1. All safety violations will be documented on the form in this policy.
2. All safety violation forms will have a corrective action.
3. All corrective actions will be verified by Management or the Safety Director.
4. Employee signatures on safety violation forms are not any sign of compliance, however, are just verification of presence.
5. Supervisor's signature shall signify agreement and compliance.

MAGNUM CONSTRUCTION COMPANY INC.

NOTICE OF VIOLATION AND NONCOMPLIANCE OF JOB SAFETY AD HEALTH RULES

DATE:

EMPLOYEE NAME:

DEPT:

On _____ you were advised of the following violation of safety/health rules:

_____
_____
_____
_____
_____
_____
_____

Corrective action taken:

_____
_____
_____
_____
_____
_____
_____

Employee comments:

_____
_____
_____
_____
_____
_____
_____

EMPLOYEE SIGNATURE_____

SUPERVISOR SIGNATURE_____

EXCAVATIONS

All excavations regardless of depth or width shall be evaluated by a Competent Person.

The location of utility installations such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonable may be expected to be encountered during excavation work, shall be determined prior to excavation.

Utility companies or owners shall be contacted and advised of the proposed work and asked to establish the location of the utility underground installations prior to the start of actual excavation.

When excavation operations approach the estimated location of underground installations, the exact location of the installations shall be determined by safe and acceptable means.

While the excavation is open, underground installations shall be protected, supported, or removed as necessary to safeguard employees.

Means of Egress from Trench Excavations:

A stairway, ladder, ramp or other safe means of egress shall be located in trench excavations that are 4 feet or more in depth so as to require no more than 25 feet of lateral travel for employees.

Employees exposed to vehicular traffic shall wear warning vests made of reflectorized or highly visible material.

No employee shall be permitted underneath loads handled by lifting or digging equipment.

CONFINED SPACE EXCAVATIONS

Excavations may be considered confined spaces and shall be evaluated as a "confined space" by a Competent Person.

Where atmospheres containing no less than 19.5% oxygen could reasonably be expected to exist, the atmosphere in the excavation shall be tested before employees enter excavations greater than 4 feet in depth.

Precautions shall be taken to prevent employee exposure to atmospheres containing less than 19.5% oxygen and other hazardous atmospheres. These precautions include providing proper respiratory protection or ventilation.

Precaution shall be taken such as providing ventilation to prevent employee exposure to an atmosphere containing a concentration of a flammable gas in excess of 10% of the lower flammable limit of the gas.

Testing shall be conducted as often as necessary to ensure that the atmosphere remains safe.

Emergency rescue equipment such as a breathing apparatus, safety harness and line, or a basket stretcher, shall be readily available where hazardous atmospheric conditions exist or may reasonably be expected to develop during work in an excavation. This equipment shall be attended when in use.

GENERAL RULES

Employees shall not work in excavations in which there is accumulated water or in excavations in which water is accumulating unless adequate precautions have been taken to protect employees against the hazards posed by water accumulation.

Employees shall be protected from excavated or other materials or equipment that could pose hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment at last 2 feet from the edge of excavations or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations or by a combination of both if necessary.

An inspection shall be conducted by the competent person prior to the start of work and as needed throughout the shift. Inspections shall also be made after every rainstorm.

Walkways shall be provided where employees or equipment are required or permitted to cross over excavations. Guardrails shall be provided where walkways are 6 feet or more above lower levels.

TABLE I

MAXIMUM ALLOWABLE ANGLE OF REPOSE FOR THE SIDE OF AN EXCAVATION IN EXCESS OF 5 FEET IN DEPTH

SOLID ROCK FORMATION (90 degrees)

FRACTURED ROCK FORMATION ¼:1 (75 degrees)

STIFF CLAY WITH MINIMUM 2.5 TSF * ½:1 (63 degrees)

FIRM CLAY WITH MINIMUM 1.5 TSF * 2/3:1 (56 degrees)

GRANNULAR SOIL (DRY)

DRY SAND OR CLAY FILL: DRY SAND AND CLAY (LOAM) MIXTURES:MEDIUM

CLAY WITH MINIMUM OF 1.0 TSF * 1:1 (45 degrees)

GRANDULAR SOIL (WET CLAY OR SILT SEAMS), RUBBLE OR TRASH FILL

FIRM OR MEDIUM CLAYS WITH RUNNING SAND SEAMS 1 ½:1 (34 degrees)

SATURRATED GRANDULAR SOIL SOFT CLAYS WITH LESS THAN 1.0 TSF * 2.1

(26 degrees)

RUNNING SOIL (SAND OR CLAY) 3.1 (18 degrees)

NOTE:

Job conditions may require the angle of repose shown in this to be reduced to prevent the side of excavation from failure.

* Strength values are given in unconfined compressive strength as measured by a penetrometer or laboratory tests,

ANGLE OF REPOSE

The side of an excavation more than 5 feet deep shall be sloped as prescribed in Table I, unless supported as prescribed in this part.

An excavation less than 5 feet in depth shall also be effectively protected when examination of the ground indicates hazardous earth movement may be expected.

If 1 side of a trench is 5 feet or less in depth and the other side is deeper than 5 feet, the side deeper than 5 feet shall be protected as prescribed in this part. All excavating material shall be placed on the low side if possible.

Special attention shall be given to a side that may be adversely affected by weather or moisture content.

ADJACENT STRUCTURES / PROTECTION

A structure that is adjacent to an excavation or trench below the level of the base or footing of any foundation or retaining wall shall be protected against settlement, lateral movement, undermining, or washout.

Before the excavation begins, the design of the protection used shall be set forth by a qualified person who is knowledgeable in the subject area.

MAGNUM CONSTRUCTION COMPANY INC.

EXCAVATION INSPECTION CHECKLIST

Location_____Date_____

Competent Person Performing Inspection_____

Please indicate YES(Y), NO(N), or NOT APPLICABLE(N/A)

____ Miss Dig has been called to locate utility

____ Not more than 25 feet of lateral travel from any employee to means of egress

____ Employees exposed to vehicular traffic have suitable vests

____ No employee is exposed to falling loads

____ Excavation designated as Confined Space

____ Hazardous atmosphere check

____ Emergency rescue equipment available when required

____ Excavation free from accumulated water

____ Have adequate precautions been taken for water hazard

____ Employees are adequately protected from loose rock/soil

____ Excavated material placed a minimum of 2 feet from excavation edge

____ Walkways over 6 feet above lower levels have adequate fall protection

____ Vehicle barricades are in place

FIRE PROTECTION AND PREVENTION

GENERAL:

1. Employees and employers share a responsibility to perform operations and maintain work areas in a fire safe condition.
2. Access to all Siamese connections, fire hydrants, and other fixed and portable fire-fighting equipment must be maintained at all times.
3. All provided fire-fighting equipment must be conspicuously located and easily identifiable.
4. Fire emergency phone numbers must be effectively communicated to employees and posted in conspicuous locations.
5. Periodic inspections of work areas are to be made by supervisors to ensure they remain in fire safe condition.
6. Smoking is prohibited at or in the vicinity of operations which constitute a fire hazard. All such locations must be posted with "No Smoking" or "No Open Flame" signs.
7. Provide, maintain, and ensure the placement of the proper type and size of fire extinguishers required for work operations, areas, and office locations.
8. Train all employees in the use and operation of all extinguishers in their work area before they are assigned and annually thereafter.
9. Clear access to all available fire-fighting equipment must be maintained at all times. The hanging of clothing, ropes, or other material over fire extinguishers will not be allowed.

EQUIPMENT AND REQUIREMENTS

1. One or more fire extinguishers are to be placed within 75 feet of all open storage areas of combustible materials.
2. A 20-pound fire extinguisher must be located between 25 and 75 feet from any flammable liquid storage area.
3. 20-pound fire extinguisher or better must be placed within 10 feet outside of rooms storing flammable or combustible liquids.

4. Service or fueling areas must have one or more fire extinguishers rated at least 20 pounds within 75 feet of each pump, dispenser, and underground fill pipe opening.
5. All employees assigned to hot work operations will be trained in the types and uses of fire extinguishers.
6. All portable fire-fighting equipment will be inspected and certified annually. The date of the last inspection and the date of monthly checks shall be listed on each extinguisher.
7. Storage areas containing LPG containers must have at least (1) 20 pound BC rated fire extinguisher.
8. Fire extinguishers must be recharged or replaced with a fully charged unit immediately after use.
9. Fire extinguishers must be available within 25 feet of all hot work operations.
10. All fire extinguishers must he checked monthly to ensure they are accessible and charged. A tag on the extinguisher must be dated and signed to show the extinguisher was checked. A certified supplier shall annually inspect all equipment.
11. When a job is complete the supervisor is responsible to ensure the extinguishers are returned to the main fab shop for reissue as needed.

MAGNUM CONSTRUCTION COMPANY INC.

FIRE EXTINGUISHERS TRAINING OUTLINE

Always use the right type extinguisher for the type of fire being put out.

Class A fires involve ordinary combustible materials like paper, wood, cloth, rubber, and plastics.

Class B fires involve flammable liquids, gases, or greases.

Class C fires involve energized electrical equipment. The extinguishing agent must be non-conductive.

Listed below are the extinguisher types and contents for fires:

Class A – soda & acid, foam, loaded stream, multipurpose dry chemical, pressure-operated water, or water pump tanks.

Class B – carbon dioxide, dry chemical, foam, loaded stream, or multi-purpose dry chemical.

Class C – carbon dioxide with plastic horn only, dry chemical, or multi-purpose dry chemical.

When using a fire extinguisher, keep the following in mind:

1. Tap the extinguisher on the ground or floor to make sure the powder is not caked together.
2. Test the extinguisher with a short burst before attacking the fire.
3. Never turn your back on the fire. Save the last of the extinguisher powder to protect yourself as you back away.

Monthly Fire Extinguisher Inspection

Date_____

Location_____

Inspector Name_____

	Fully Charged		Tag Attached		Pin & Seals Installed	
Location	Yes	No	Yes	No	Yes	No

NOTE: Immediately remove any fire extinguisher that fails any of the tests. Install a "DO NOT OPERATE" tag and immediately remove from service for repair or replacement.

FIRST-AID GENERAL PROCEDURES

1. A trained person with a valid first aid card issued by the Red Cross will be available and identified at each work site.
2. The foreman will ensure that emergency phone numbers including ambulance are posted on all job sites. Ambulance must be used for all injuries other than first aid.
3. Each work site will have first aid kits available for minor injuries. This kit will contain the following: biohazard gloves, mouth to mouth mask, small plastic shovel, bandages, aspirin, eye wash solution, large wound dressings, scissors, and other basic first aid supplies.
4. The foreman shall insure that prompt medical treatment is available before starting any project. If emergency medical treatment is not reasonably available, the foreman shall notify management before starting work and an emergency action plan shall be developed, reviewed with all employees, and posted at the jobs.
5. The foreman shall insure that all first aid supplies are inspected weekly and replaces as needed.
6. Anytime the jobsite presents the risk of exposure to hazardous chemicals on the face, eyes, or body of any employees, a safety shower and eye wash will be provided.
7. No one is to move any employee involved in a serious accident until medical assistance arrives – except to the extent such movement is necessary to protect the life or safety of the employee.
8. All emergency victims shall be transported by ambulance or by approval of trained first responders. All non-critical care incidents shall be driven to non-emergency medical treatment.

FORK LIFTS

No employee will be allowed to operate a fork lift or other powered industrial truck until the employee has completed and passed both a written and hands-on performance test administered by the assigned supervisor or the designee. Supervisors must have documented training showing they are competent to provide instructions.

The supervisor will then issue a certification license to be carried on the employee's person with a copy in the employee's file.

The above training shall be repeated every 3 years and will only be valid for use while employed by the issuing employer.

Refresher training will be required at less than 3 year intervals for the following reasons:

1. Employee is involved in a property damage or injury accident.
2. There is a change in the company procedures or OSHA regulations.
3. Anytime the employee's performance demonstrates they no longer retain or display the level of knowledge they were trained for.

All hands-on training shall include use and limitations of the equipment the employee is assigned to, the manufacturer's safety requirements, and the job or work site conditions that may affect the safe operation of the equipment.

The training shall include, but not be limited to, load capacity, instructions for use, distances, refueling, ramps, visibility, balancer, and counterbalance.

Prior to each shift, the operator will inspect the equipment and must verify trailer chocks, supports, and dock plates prior to loading and unloading.

FORK TRUCK PRE-OPERATION CHECKLIST

Complete the pre-operation checklist with one of the following responses after each item.

*If working properly, enter an X in the OK column.

**If not working properly, enter an X in the Needs Repair column and explain the condition.

Turn the checklist in to the appropriate person.

Truck #:_____ Operator: _____

Date: _____ Type of truck:_____

Shift_____1_____2_____3 Department: _____

Checklist	OK	Needs Repair
Accessory Control		
Battery Indicator		
Brakes		
Fluid Levels		
Forks, Mast Chains, Stops, Backrest		
Horn		
Hydraulic Cylinders		
Hydraulic Hoses and Fittings		
Lift Control		
Lights		
Limit Switches		
LP Leaks		
Overhead Guard		
Steering		
Tilt Control		
Tires and Wheels		

POWERED INDUSTRIAL TRUCK SAMPLE TEST

Employee's Name:_____Date:_____

WRITTEN TEST

T___F___ 1. An operator of a lift truck should never drive up to employees that are standing in front of a fixed object.

T___F___ 2. You may give a fellow employee a ride for a short distance.

T___F___ 3. Operators should never put their arms or legs outside the running lines of a moving truck.

T___F___ 4. A truck should not be used to open railroad car doors unless designed and/or specifically equipped for that purpose.

T___F___ 5. Trucks and trailers must have 2 rear wheels blocked or restrained by other mechanical means when being boarded by a rider-type powered industrial truck.

T___F___ 6. It is safe practice for you to inspect the landing gears of semi-trailers to make sure it will hold the weight of your powered industrial truck and its load.

T___F___ 7. Only specially equipped trucks shall be used in hazardous areas.

T___F___ 8. You are required to report only accidents that involve injuries.

T___F___ 9. You should not fuel your truck while the engine is running.

T___F___ 10. When following another truck, you should maintain at least 3 truck lengths.

T___F___ 11. The best method of crossing railroad tracks is diagonally.

T___F___ 12. When the load blocks your forward visibility, stand up and drive slowly.

T___F___ 13. Drive at reduced speeds on wet and slippery floors.

T___F___ 14. Your lift trucks should never be left unattended with the motor running.

T___F___ 15. Operators will check safety devices: brakes, horn, steering, parking brake, upright operations, oil or fuel leaks at the beginning of each shift.

T___F___ 16. When coming down a grade or ramp, your load should be trailing you.

T___F___ 17. When loading, the load should be tilted and cradled against the backrest.

T___F___ 18. When lowering the load, it is proper to stop it suddenly.

T___F___ 19. Other workers may stand close by when you stack materials, as long as they have a safety exit.

T___F___ 20. It is wrong to stack material in front of fire doors.

T___F___ 21. Material may be stacked in aisles and roadways if enough room is left to get by.

T___F___ 22. Smoking or other sources of ignition should be kept away from battery charging area.

T___F___ 23. The same weight can be lifted with ends of the forks that can be lifted when the ends of the fork are run all the way underneath the load.

T___F___ 24. You may have people stand or add weight to the back fo the truck in order to lift more weight with the fork.

T___F___ 25. A driver should always plan the path of travel to avoid obstacles.

T___F___ 26. A safe distance should be maintained from edge of ramps and platforms.

T___F___ 27. When parked on an incline, truck wheels should be blocked and wheels turned.

T___F___ 28. You can pass another truck traveling in the same direction at an intersection if you sound your horn and signal your intention to pass.

SELECT THE ANSWER THAT IS MOST CORRECT

29. In checking your truck, you find the power steering system squeals as soon as you turn it. You should:

A. always stop

B. notify your supervisor

C. operate truck to see if noise goes away.

30. When changing directions:

A. always stop

B. slow down to at least 1 mph

C. don't worry about speeds as the lift truck is built to take the shock

31. You can increase the rated load capacity of your truck

A. by adding additional counter weighting with written approval from the manufacturer

B. if your lift is under 84 inches high

C. if it's only for less than 5 minutes

32. As a driver it is

A. your responsibility to watch for pedestrians

B. their responsibility to watch for you

C. management's responsibility to keep them out of PIT work areas

33. On a lift truck, your horn

A. makes a good device to catch your buddy's attention

B. should be sounded at intersections

C. should be sounded when you are racing after another truck

34. If mechanical trouble develops you should

    A. fix it yourself if minor in nature

    B. drive until repairs can be made

    C. report the trouble to your supervisor

35. Forks on empty parked trucks must always be

    A. 2 inches from the floor

    B. 4 inches from the floor

    C. on the floor

36. Another person may ride the forks of a fork truck

    A. if you need help reaching a high load

    B. if the trip is a short one

    C. if the truck is equipped with special platform for doing so

37. When overtaking a pedestrian from the rear, you should

    A. continue on so long as he is not right in front of you

    B. go around him

    C. sound your horn and steer clear of him

38. When operating your truck on a public road you should

    A. assume traffic will avoid you

    B. obey the rules of the road as though you were in a car

    C. drive backwards so you can see cars behind you

39. If you see a loose object laying on the floor you should

    A. make a written note to remind your supervisor to pick it up

    B. ignore it; someone will eventually move it

    C. stop and pick it up so you don't drive over it

40. Your powered industrial truck permit must be

    A. filed with the state of Michigan

    B. secured to the back of your truck

    C. be carried or made available for inspection during work hours

TOTAL SCORE _____

MAGNUM CONSTRUCTION COMPANY INC.

POWERED INDUSTRIAL TRUCK TEST ANSWER SHEET

1. T
2. F
3. T
4. T
5. T
6. T
7. T
8. F
9. T
10. T
11. T
12. F
13. T
14. T
15. T
16. T
17. T
18. F
19. F
20. T
21. F
22. T
23. F
24. F
25. T
26. T
27. T
28. F
29. B
30. A
31. A
32. A
33. B
34. C
35. C
36. C
37. C
38. B
39. C
40. C

MAGNUM CONSTRUCTION COMPANY INC.

GENERAL SAFETY/HEALTH RULES

1. All injuries, no matter how slight, must be reported to the supervisor immediately. If you are injured and do not report the occurrence to your supervisor, you may be responsible for any medical expense incurred.
2. Submitting false or fraudulent information when reporting an accident or injury is unlawful and may be cause for dismissal.
3. Fighting, gambling, and/or horseplay are not permitted and may be grounds for dismissal.
4. The use or possession of intoxicants or drugs on the job is prohibited.
5. Any employee reporting for work intoxicated or under the influence of intoxicating liquor or drugs will not be allowed to work and may be subject to discharge.
6. Keep clear of all moving equipment so as to avoid pinch points and blind areas.
7. Be alert for and obey all warning signs.
8. You will be advised what personal protective equipment is mandatory.
9. Unless authorized, do not attempt to repair or tamper with equipment that is not functioning properly. Report malfunctions to your supervisor.
10. Whenever anyone is required to work on or in close proximity to electrical equipment or circuitry, appropriate tagging must be placed to identify all controls deactivating the circuit and the circuit or equipment shall be locked out.
11. Jumping on or off equipment or vehicles, whether moving or stationary, is prohibited.
12. Misuse of tools and equipment or circumventing safety devices can result in injury. Do not use a makeshift or "jury-rigged" tools or equipment to perform your job.
13. All fire protection and emergency equipment are plainly marked and must be kept free of obstruction for emergency use.

14. Unless specifically authorized, firearms and explosives are prohibited.
15. Report all unsafe practices and conditions to your supervisor at once.
16. Ride only in vehicles designated for transporting personnel.
17. Only authorized and properly trained personnel are permitted to operate equipment, vehicles, valves, electrical switches, and similar machinery.
18. Do not smoke in areas marked "NO SMOKING" or near flammable or combustible materials.
19. Maintain good housekeeping at all times. Keep waste, debris, and rubbish cleaned up. Discard and/or store all oily rags, waste, and similar combustible materials in a covered metal container.
20. Keep all machinery guards, guardrails, and other protective devices in place.
21. Be alert at all times to conditions and work processes in your area and surrounding areas and to the presence of other workers and equipment to foresee and avoid possible dangers.
22. No worker shall work alone on a jobsite.

HEARING CONSERVATION

PURPOSE

This procedure will apply to the jobsites that fall under the OSHA 1910 General Industry Standards and/or those operations where hearing protection or engineering controls cannot reduce exposure to less than 85dBA 8 hour time weighted.

PROCEDURE

1. Responsibilities for establishing and administering the Hearing Conservation Program.

    A. A competent person will be designated to oversee and maintain the program

    B. The program will be evaluated periodically by an Industrial Hygienist under direction of Management.

    C. Changes will be made as necessary to maintain program effectiveness.

    D. Customers will be asked to:

        1. Provide the necessary information on in-plant noise surveys.

        2. Identify high-noise areas in operating units.

2. Monitoring and establishing high-noise areas.

    A. Management will perform or have performed initial noise survey on construction operations and work areas by use of a sound level meter and/or dosimetry.

    B. Areas and operations which fall into a noise range of 85 dBA or above will be identified and documented. A copy of this procedure will be posted in identified areas.

    c. Jobsite management will set policy on mandatory use of hearing protection in these areas and while performing certain operations.

    D. Employees will be notified of high noise areas and operations by the job superintendent or his designee prior to work.

    E. Areas or operations which exceed 85 dBA in the work place will be posted.

F. Site supervisors will ensure employees wear hearing protection in areas designated to be 85 dBA or greater. The type of protection provided will be evaluated by the supervisor to ensure it provides for adequate decibel reduction.

G. If significant changes in noise levels occur, noise levels shall be re-evaluated to determine if hearing protection will be worn.

3. Employee Notification

A. 8 hour time weighted average (TWA) noise monitoring results requiring notification will be posted in a conspicuous location.

4. Audiometric Testing Program

Audiometric testing will be available to all employees while exposure to noise equals or exceeds an 8 hour TWA of 85 dBA or greater on a regular basis.

A. Management will determine which employees have an 8 hour TWA exposure of 85 dBA or greater. Such employees will be notified and placed in a Hearing Conservation Program including annual testing.

B. Arrangements will be made to perform the following

- Audiometric testing
- Test interpretations by an audiologist or other qualified person
- Computerized data analysis and retention
- Education programs
- Initial fitting of employees for earplugs if required

C. A baseline audiogram, against which subsequent audiograms will be compared to, will be provided for all employees exposed to 85 dBA or above.

- A baseline audiogram shall be conducted within 6 months after the employee's first exposure to noise at the jobsite (at or above 85 dBA).

- Employees scheduled for baseline audiograms shall be removed from high-noise areas greater than 85 dBA for at least 16 hours prior to the audiogram.

D. Annual Audiograms

- After obtaining the baseline audiogram, a new audiogram shall be completed at least annually for each employee exposed to 85 dBA or above.
- Each employee's annual audiogram shall be compared to that employee's baseline audiogram to determine if the audiogram is valid and if an OSHA Standard Threshold Shift (STS) has occurred.

1. An employee will be notified in writing within 21 days of a determination of an STS.
2. Additional and refitted or corrected hearing protection must be worn by employees experiencing an STS until:

a. A subsequent audiogram shows no STS

b. The employee is not exposed to noise greater than 85 dBA TWA

E. If the annual audiogram shows an employee suffered an STS, a retest will be done within 30 days.

F. Only a medical facility that meets the OSHA 1910.95 (h) requirements related to this section shall be used for evaluation and treatment.

5. Hearing Protection

A. All employees working in areas with noise levels at or above 85 dBA will wear proper hearing protection while in the area. This will be enforced by the Site Supervisor.

- High noise areas will be defined by work permits, warning signs, or by instructions from the Site Supervisor.

B. Each employee will have the opportunity to choose from a variety of hearing protection devices.

C. Hearing protectors shall be replaced as necessary.

D. Site Supervision will monitor the enforcement and correct usage of hearing protection.

6. Training

A. All employees will be trained in the use, the noise reduction rating, and the selection of ear protection. This training will be repeated annually or when the employee's performance shows they no longer demonstrate the level of knowledge required.

B. Training programs will be kept updated and documented.

C. The training program shall include:

- The effects of noise on hearing
- The purpose of hearing protectors: advantages and disadvantages of various types. Instructions shall be given on issue points, selection, fitting, use, and care of hearing protection.
- Purpose of audiometric testing and explanation of test procedures.

7. Record Keeping

A. Exposure measurements, audiometric tests, and related recordswill be kept and available.

B. Record retention will be done in accordance with the time periods stated in the standard.

MAGNUM CONSTRUCTION COMPANY INC.

HOUSEKEEPING

GENERAL REQUIREMENTS

1. Maintain adequate supplies of cleaning equipment and materials.
2. All stairways, passageways, and access-ways shall be kept free of materials, debris, and obstructions at all times.
3. Tools, materials, extension cords, hoses, or other debris will not be strewn about in a manner which may cause tripping or other hazards.
4. Amount of general waste, scraps, and rubbish generated shall be estimated prior to work beginning daily. Proper containers shall be utilized throughout and at the end of the day.
5. Metal or other appropriate containers will be provided in adequate numbers to handle all waste and rubbish disposal.
6. Materials shall be maintained in safe, neat stockpiles for easy access and to prevent collapse or falling.
7. Oil, grease, and other liquids shall not be allowed to accumulate as the possibility of slipping or a fire hazards will be increased.
8. Training shall be provided to employees to address proper handling, organizing, and storage of waste and scrap materials to minimize potential impact to the environment. Segregation of wastes and recycling will also be covered in this training.

INDUSTRIAL HYGIENE

Every reasonable measure will be taken to eliminate or safely control environmental factors which may cause sickness, impaired health, or significant discomfort to workers.

As soon as dangerous environmental hazards are discovered, steps shall be taken to eliminate or control them. General methods of control consist of the following:

A. Substitute a less harmful material for one which is dangerous to health.

B. Isolate or enclose the process or work operation to reduce the exposure to other employees.

C. Change or alternate the process to minimize worker contact.

D. Utilize wet methods to reduce dust.

E. Safely remove or disperse the contaminants at the source before they reach the worker.

F. Ventilate with clean air to provide a safe atmosphere.

G. Utilize personal protective devices.

H. Whenever appropriate, utilize special methods for specific hazards such as reduction of exposure time, continuous or frequent sampling with monitoring devices and medical programs to detect intake of toxic materials.

I. Maintain adequate training and educational programs as needed.

ASBESTOS & LEAD

No employee will knowingly be exposed to hazardous levels of airborne asbestos or lead.

The company safety director will be notified prior to work starting on any project that is known to have the potential of exposure from asbestos or lead.

In the event it becomes necessary to remove, alter, or disturb any sources of asbestos or lead, only those employees fully trained in the hazards and current regulations may be assigned.

Air testing, material sampling, and respirator protection for any and all asbestos or lead related work will be coordinated through the company safety director

LEAD/CADMIUM

The policy of protecting employees from exposure to lead/cadmium includes an exposure assessment. Anytime the presence of lead at exposure levels of 30 micrograms per cubic meter of air in an 8 hour time weighted average is suspected, the foreman and project superintendent shall ensure an exposure assessment is completed. Action level for Cadmium shall be 2.5 micrograms per cubic meter of air in an 8 hour TWA.

The exposure assessment will be done after reviewing the work area and/or materials with the customer.

The assessment will include air sampling of employee breathing zone over a full workday. Upon completion of the air sampling, the project superintendent will do or arrange for the following:

1. If levels are below the action level, a documented record will be made showing the readings, date of sampling, location of sampling, and the name of the employee taking part in the sampling.

2. If levels are over the action level, the employee monitored will be given a written report of his exposure. A site detailed emergency action plan will be developed and reviewed with all affected employees.

3. Engineering controls and/or employee rotation will be used to reduce employee exposure so it does not exceed the action level.

4. If engineering controls and employee rotation are inadequate, employees will be provided at no cost the necessary respirator protection.

5. A site action plan will be developed that includes the use of protective clothing, housekeeping, hygiene, and cleaning of all contaminated clothing.

6. Employees required to work in areas which exceed the action level will be medically monitored for blood levels of exposure. Blood test results will be provided to the employee. The employee will be removed from the exposure area based on blood test results or if exposure would exceed 20 days per year.

7. All exposure areas will be posted.

AWARENESS TRAINING

All employees will be trained by a qualified person or organization in the hazard awareness and precautions to be taken when working around exposure areas.

This training will be a minimum of 2 hours for employees not normally exposed. 8 hour training will be provided for employees that may encounter ongoing or known exposures. The 8 hour training will include the respirator training shown in Section 27 of this manual.

As will all company training, a record of the training will be maintained by the Safety Director showing the subject, date of training, name of the trainer, and results of all written tests.

PROGRAM REVIEW

Because action levels of contaminates may change based on regulations, this program will be reviewed or updated annually or when there is a change in the regulation.

A current copy of this program is available for review by any employee by contacting the Safety Director.

MAGNUM CONSTRUCTION COMPANY INC.

LADDER SAFETY

GENERAL

1. Ladders with broken or missing rungs/steps, broken/split side rails, or other faulty or defective construction will not be used and are to be removed from the work area.
2. Portable ladders must be placed on a substantial base, have a clear access at the top and bottom, and extend 3 feet above the landing. Extension ladders shall be placed at a 4:1 ratio and will be tied or secured against falling.
3. Employees will not use the top 2 steps of a step ladder.
4. Employees will not work on any ladder facing away from the ladder.
5. Employees will not carry tools or materials in their hands while climbing up and down a ladder and must maintain 3 points of contact (both hands and a foot or both feet and a hand).
6. Ladders are to be inspected prior to each day's use. All ladder rungs and load capacities must meet OSHA/ANSI specifications for the task.
7. 2 people may not work from the same ladder unless it is designed for double-sided use.
8. Do not leave tools, equipment, or materials unattended on the top of step ladders.
9. Step ladders may not be used in a closed position.
10. Employees shall not over-reach while on a ladder. Over-reaching occurs when both shoulders extend past the side rails.
11. If a ladder is found to be defective, it will be clearly tagged "DO NOT USE" until it is either fixed or removed from the jobsite.

MOBILE LIFTING EQUIPMENT

General Rules and Policies

1. No one except qualified operators may use or operate cranes, boom trucks, or other cable hoists.
2. A qualified operator must have a certificate of training from a recognized organization or 40 hours of supervised operation by a designated trainer of the company.
3. All lifting equipment shall have a documented inspection each shift of operation. The inspection shall follow manufacturer's daily checklist recommendations. The daily inspection checklist shall be with the equipment.
4. At least annually, each piece of equipment will be inspected by a manufacturer's authorized inspection service. A copy of the inspection shall be kept with the equipment.
5. All lifting lines and equipment must be inspected monthly by operator. The documentation must show date of inspection and name of inspector. Inspections must include all safety features including brakes, hooks and controls.
6. No lifting equipment shall be operated within 20 feet of energized power lines.
7. A 20 pound or greater ABC type extinguisher must be in or near the operator's cab of all lifting equipment. Operators and/or oilers must be trained in the use of extinguishers.
8. Loads shall not be left suspended when the operator is not in the cab of the equipment.
9. Documentation of all daily, yearly, and monthly checks of inspection shall be maintained for at least 1 year. This includes maintenance records and any load tests.
10. All equipment load charts will be maintained in readable condition or replaced.
11. The swing radius of all rotating lifting equipment shall be barricaded or otherwise guarded from employee exposure.
12. Daily inspection checklist shall be used in providing regular preventative maintenance.

13. No modifications shall be made to lifting equipment without written authorization from the manufacturer or written documentation from a registered PE and cosigned be an officer of the company.

14. The assembly/disassembly of the crane shall be directed by the Assembly/Disassembly Director. This person is both competent and qualified and shall oversee all aspects of assembly/disassembly.

15. Included in the policy shall be the certification process of the NCCER operators training and the equivalent Magnum training to meet the NCCER Rigger and Signal person training.

16. All Riggers and Signal persons will be issued and tested on The Rigging Handbook, Third Edition by Jerry Kline. ISBN # 978-1-8-8872402-8

17. The following list of training shall be incorporated into this policy:

- NCCER. ***Mobile Crane Operations Level 1 Trainee Guide*.** 2nd ed. Upper Saddle River, New Jersey: Prentice Hall, 2004. Print. Contren Learning Ser.
- NCCER. ***Mobile Crane Operations Level 2 Trainee Guide***. 2nd ed. Upper Saddle River, New Jersey: Prentice Hall, 2004. Print. Contren Learning Ser.
- NCCER. ***Mobile Crane Operations Level 3 Trainee Guide***. 2nd ed. Upper Saddle River, New Jersey: Prentice Hall, 2004. Print. Contren Learning Ser.
- NCCER. ***Signal Person Trainee Guide***. 1st ed. Upper Saddle River, New Jersey: Prentice Hall, 2011. Print. Contren Learning Ser.
- Klinke, Jerry A. ***Rigging Handbook: The Complete Illustrated Reference***. Stevensville, MI: ACRA Enterprises, 2003. Print.

LIFTING, RIGGING, & MATERIAL HANDLING

SAFE WAY TO LIFT

The following questions need to be asked before lifting anything:

- Can I lift this load by myself?
- Do I need mechanical help?
- Is the load too awkward for one person to handle and should I ask for help?

If the load is manageable, follow these tips for safe lifting.

1. Tuck your pelvis: By tightening your stomach muscles, you can tuck your pelvis which will help your back stay in balance while you lift.

2. Bend your knees: Bend at your knees instead of your waist. This helps you keep your center of balance and lets the strong muscles in your legs do the lifting.

3. Hug the load: Hold the object as close to your body as possible and gradually straighten up to a standing position. Keep your back straight.

4. Avoid twisting: Twisting can overload your spine and lead to serious injury. Make sure your feet, knees, and torso are pointed in the same direction when lifting.

   In addition, make sure your footing is firm, the path you are travelling is clear, and the same techniques are used when setting your load down.

MANUAL MATERIAL HANDLING POLICY

Purpose: The purpose of this policy is to eliminate strain/sprain type of injuries which result from unsafe lifting, carrying, or moving of material and/or equipment.

Scope: This policy applies to all company employees including field, office, and management.

Responsibilities: Management is responsible for insuring all existing employees and all newly hired employees are trained on this procedure. Management is responsible for insuring that all field foremen and/or crew leaders enforce this policy and for taking disciplinary action for violating this policy.

Field foremen are responsible for day to day and task to task enforcement of this policy. This responsibility shall be met by regular observation of employees during the normal course of project activities.

Employees are responsible for following this policy during any task which involves lifting, carrying, or moving equipment or materials other than normal portable tools.

Employees are responsible for informing their supervisor any time they cannot follow this policy for any reason.

PRE-PLANNING AND GENERAL PROCEDURE

1. Determine the weight of the load by checking for labels, asking the equipment owner, or asking your supervisor.
2. When the weight cannot be reasonably determined, mechanical moving equipment will be used. Mechanical moving equipment does not include 2-wheeled hand carts when the weight is unknown.
3. Check the path of travel to insure it is safe and unobstructed. Check for slip/trip hazards as well as steps, drop-offs, and uneven surfaces.
4. Protect your muscles from strains or sprains by stretching or warming up before lifting.
5. Keep the load close to your body; keep your back straight and lift with your legs. Warning: Bending your back requires your back muscles to support two-thirds of your body weight plus the weight of the load.
6. When setting a load down, you must also keep it close to your body, keep your back straight, and use your leg muscles.
7. When 2 or more employees are carrying or lifting the same load, one of them will be responsible for giving all directions, such as "1-2-3 lift" or other directions that provide for team work and communication.

GENERAL RIGGING SAFETY REQUIREMENTS

Generally, rigging means (1) attaching a load to a crane, (2)lifting the load, (3) moving it, and (4) then setting it down.

Listed below are general rigging safety requirements that must be followed on all jobsites.

1. Know how much the load weighs, where it is going, and where it will travel.
2. Check the landing area before the lift and make sure it will support the load.
3. Make sure hands and fingers are clear before the operator begins lifting the load. Many amputations have occurred when fingers and hands get caught between the load and a sling or chain.
4. Slings should be placed so the crane hook is directly over the center of gravity. This will decrease the chance of the load tipping, swinging, or rocking.
5. Attach a tag line to the load.
6. One person needs to be responsible for giving crane signals. This person must make sure all other riggers report "All Clear" before any crane movement.
7. Lift the load a few inches and check rigging.
8. Never stand or walk under a load or between the load and any other object.

COME-A-LONG SAFETY REQUIREMENTS

1. Do not overload. Stay under the capacity shown on the frame or hook block.
2. Do not use a come-a-long to lift people or loads over people.
3. Use hand power on lever only. Don't not use extensions (cheater bars) on levers.
4. Do not use if chain is twisted, kinked, or damaged.
5. Do not use if the frame of the come-a-long is in contact with any object.
6. Do not use if there is damage to the tool or if the tool malfunctions.
7. Do replace damaged safety latches on hooks.
8. Store come-a-longs in dry, clean locations.
9. Rigging equipment does fail. Always have an escape route in mind. Never have too much faith in any rigging equipment.
10. Stay away from the "hospital" side of the loads.

MAGNUM CONSTRUCTION COMPANY INC.

MATERIAL STORAGE AND HANDLING

Always stack, block, or interlock materials to prevent sliding, falling, or collapsing during storage or transit.

Do not store material within 6 feet of a floor opening or 10 feet from a wall opening.

Never block aisles, exits, passageways, or fire extinguishers.

Chock the wheels of trucks before unloading them.

Do not store materials together that could react with each other and cause a hazard.

Do not store material under or within 10 feet of energized power lines.

Bagged material weighing more than 30 pounds should not be stacked higher than 5 feet or 3 feet if stored on pallets.

Never exceed the safe load limit of a floor, deck, roof, or other area used for storage.

Always inspect ropes, chains, chokers, and wire ropes used for loading and unloading prior to use.

MAGNUM CONSTRUCTION COMPANY INC.

LOCKOUT/TAGOUT

1. Purpose and Scope

Effective hazardous energy control procedures will protect employees during machine/equipment servicing/maintenance where the unexpected energization, start up, or release of stored energy could occur and cause injury. This also applies to working on or near exposed de-energized electrical conductors and parts of electrical equipment. The hazards being guarded against include being caught in, crushed by, struck by, thrown from, or contacting live electrical circuits/parts.

The procedure herein established will ensure that machines and equipment are properly isolated from hazardous or potentially hazardous energy sources during servicing/maintenance and properly protect against re-energization as required by 29 CFR 1910.147.

While any employee is exposed to contact with parts of fixed electrical equipment or circuits which have been de-energized, the circuits energizing the parts shall be locked out and tagged in accordance with the requirements of CFR 1910.333(b)(2).

Only when disconnecting means or other devices are incapable of being locked out, until lockout capability is provided, will a tagout procedure (without lockout) be utilized.

2. Enforcement

Any employee who fails to follow these procedures will face disciplinary action.

3. Definitions

Authorized Employee: A person who locks out machines or equipment in order to perform servicing/maintenance on that machine or equipment. An affected employee becomes and authorized employee when that employee's duties include performing servicing or maintenance which exposes him/her to potentially hazardous energy

Affected Employee: An employee whose job requires him/her to operate/use a machine/equipment or work in an area in which servicing or maintenance is being performed under lockout.

Other Employee: An employee whose work operations are or may be in an area where energy control procedures may be utilized.

For additional definitions see 1910.147 (b).

Energy Isolating Device: A mechanical device that physically prevents the transmission or release of energy including but not limited to the following: a manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors and in addition, no pole can be operated independently; a line valve; a block; or any similar device used to block or isolate energy. Push buttons, selector switches, and other control circuit type devices are not energy isolating devices.

Additional Guarding: 2 separate actions must be taken to defect the purpose of a tagout such as tagging a valve and removing the handle. This is sometimes called "one plus".

Tag Attachment Ties: A non-reusable, self-locking, hand attached locking device with a 50 pound minimum breaking strength that is used to attach tags to isolating devices.

4. Authorized Responsibility

Appropriate employees will be instructed in the safety significance of the lockout procedures.

5. Rules

A. Locks, chains, wedges, or other hardware which meet the requirements defined in 1910.147 (c) (ii) shall be provided by the Company.

B. Lockout devices shall be singularly identified. They shall be the only devices used for controlling energy and shall not be used for other purposes.

C. The lockout devices shall indicate the identity of the employee applying the devices.

D. All machines/equipment shall be locked out to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Lockout will also apply when working on or near exposed de-energized electrical circuits/parts.

E. No employee shall attempt to operate any switch, valve, or other energy isolating device which is locked out.

F. Each lockout device shall only be removed by the employee who applied the device.

6. Lockout Procedures & Techniques

A. Preparation for Shutdown:

1. In preparation for lockout, an initial survey must be made to locate and identify all energy isolating devices to be certain which switch, valve, or other energy isolating devices apply to the machine/equipment to be locked out. More than one energy source (electrical, hydraulic, pneumatic, chemical, thermal, etc.)may be involved.

2. Before an authorized or affected employee turns off a machine or piece of equipment, the authorized employee must have knowledge of the type/magnitude of the energy to be controlled and the method or means to control the energy.

B. Machine or Equipment Shutdown:

1. All affected employees shall be notified that a lockout system is going to be utilized and reason for it, before controls are applied.

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

C. Machine or Equipment Isolation:

Physically locate and operate the switch, valve, or other energy isolating devices so that the equipment is isolated from its energy sources and apply adequate hardware.

D. Lockout Device Application:

1. Authorized employees shall lockout the energy isolating devices with assigned individual locks.

2. Lockout devices shall be applied so that they will hold the energy isolating devices in a neutral or off position.

E. Stored Energy:

All stored energy or residual energy in rams, flywheels, springs, pneumatic, or hydraulic systems shall be blocked or dissipated. If there is a possibility of re-accumulation of stored energy, verification of isolation must be continued until servicing or maintenance is completed.

F. Verification of Isolation:

Prior to starting work on machines or equipment that have been locked and after ensuring that no personnel are exposed, the authorized employee shall operate the push button or normal operating control to verify that the appropriate equipment or machine has been de-energized and make certain it will not operate.

CAUTION: Return operating controls to the neutral or off position after the test.

The machine/equipment is now locked out. Servicing or maintenance may now occur.

7. Removal of Locks & Restoring Power Source

A. Power may be turned on when it is required to perform tests or adjustments. All of the rules pertaining to removing locks and restoring power shall be followed. The equipment or process shall be locked out again if it is necessary to continue work after completing the test or adjustment.

B. Upon completion of the work, each employee will remove his/her lock, rendering the machine operable when the last lock is removed.

C. Before removing the final lock, the employee responsible for doing so shall assure that all guards have been replaced; that the equipment/machine/process is cleared for operation; that the appropriate personnel have been notified that power is being restored. This employee is also responsible for removing the "equipment" lock and returning it to the supervisor's office.

7.1 Emergency Safety Lock Removal

A. Management will be authorized to remove an employee's lock under the following conditions:

1. Receipt of a written request signed by the appropriate supervisor which shall state the reason the employee is unable to remove the lock.
2. The Supervisor is responsible for making certain all the requirements for safely restoring power are followed.
3. All attempts to locate and advise employees when their locks have been removed without their approval must be documented by both Supervisor and Management.

8. Additional Requirements

A. In the preceding steps, if more than one individual is required to lockout machines/equipment (group lockout), the following procedures shall be implemented to provide protection to all employees.

1. A primary authorized employee will be designated and responsible for the number of people working under the protection of the group lockout device. The primary authorized employee will ascertain the exposure status of the individual member(s) participating in the group lockout to ensure continuity of protection for each individual. In addition, this primary authorized employee will be responsible for notifying affected employees before and after the lockout procedures are performed.
2. Each authorized employee will place his/her own personal lockout device on the energy isolating device(s).
3. When an energy isolating device cannot accept multiple locks, a multiple lockout adapter must be used.

B. If a lockout procedure will extend into the following shift, the authorized employee who originally placed the lock will remove it. It will be immediately replaced with the lock of the authorized employee who is to continue the repair or maintenance on that equipment or machine for the following shift.

C. If servicing/maintenance is performed on a cord and plug connected equipment (more than one cord and plug) the following procedures shall be performed to protect employees:

1. Unplug equipment from its electrical sockets.
2. Place lockable covers over the plugs and lock on the plug covers during machine/equipment servicing/maintenance.

D. If servicing or maintenance is performed on cord or plug connected equipment (only one cord and plug), the following procedures shall be performed to protect employees:

1. Unplug equipment from its electrical socket.
2. Maintain exclusive control of cord and plug.

9. Training

A. Authorized employees shall receive training covering:

1. Recognition of hazardous energy sources.
2. Types and magnitude of hazardous energy in the workplace.

3. Methods, devices, and procedures used to lockout, verify lockout, and otherwise control hazardous energy on all pieces or types of equipment (including cord and plug connected equipment).
4. Procedures for removing locks and returning a machine or piece of equipment to operation.
5. Transfer of lockout responsibilities.
6. Group lockout procedures.

B. Affected and all "other" employees shall receive training s o that they are able to:

1. Recognize when energy control procedures are being implemented.
2. Understand the purpose of the procedures and the importance of not attempting to start up or use the machine/equipment that has been locked out.
3. All training will be documented.

10. Retraining

Authorized and affected employees shall receive retraining in proper application of lockout procedures when there is a change in the following:

- Job assignments that expose an authorized employee to new hazards or lockout procedures.
- Machines, equipment, or processes that present a new hazard or require modified lockout procedures.
- Energy control procedures for a pieces or type of equipment.
- When it becomes known that an employee incorrectly performs lockout procedures.

11. Program Review/Auditing

The effectiveness of this program will be evaluated annually by management audits. These audits must include at least 3 ongoing lockout/tagout operations.

12. Standard forms to be used and kept at the main office

- Appendix 1: List of authorized employees
- Appendix 2: List of affected employees
- Appendix 3: List of other employees
- Appendix 4: Energy source evaluation
- Appendix 5, 6, & 7: Specific Equipment Procedure
- Appendix 8 & 9: Lockout Knowledge Test

APPENDIX 1 – LIST OF AUTHORIZED LOCKOUT EMPLOYEES

NAME	JOB TITLE	MEANS USED TO ID LOCKS

MAGNUM CONSTRUCTION COMPANY INC.

APPENDIX 2 – LIST OF AFFECTED EMPLOYEES BY JOB SITES

JOB TITLE	MACHINERY, EQUIPMENT, OR PROCESS

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APPENDIX 3 – LIST OF "OTHER" EMPLOYEES BY JOB TITLES

JOB TITLE	MACHINERY, EQUIPMENT, OR PROCESS

MAGNUM CONSTRUCTION COMPANY INC.

APPENDIX 4 – ENERGY SOURCE EVALUATION

DATE: _____ CONDUCTED BY: _____

In order to determine all energy sources for each piece or type of machine or equipment, fill in the following table.

LOCATION:

EQUIPMENT NAME:

MODEL:

SERIAL #:

LOCKOUT PROCEDURE #:

ENERGY SOURCE *MAGNITUDE	LOCATION OF ISOLATING DEVICE	MEANS OF ISOLATION
ELECTRICAL		
ENGINE		
SPRING		
COUNTER WEIGHT		
FLYWHEEL		
HYDRAULIC		
PNEUMATIC		
CHEMICAL		
THERMAL		
OTHER		
OTHER		

*MAGNITUDE EXAMPLE – ELECTRICAL = 480V Three Phase PNEUMATIC = 125 psi

APPENDIX 5 – *SPECIFIC ENERGY CONTROL PROCEDURES FOR EQUIPMENT*

Procedure #:

Date: Completed by:

MACHINES OR EQUIPMENT UTILIZING THIS PROCEDURE

_____ _____

_____ _____

PROCEDURE FOR CONTROLLING HAZARDOUS ENERGY

1. Be familiar with the sources of hazardous energy for the machine or equipment that will be serviced. **See Energy Source Evaluation.**

_____Electrical _____Engine _____Spring

_____Counter Weight _____Flywheel _____Hydraulic

_____Pneumatic _____Chemical _____Thermal

_____Other_____

2. Notify affected employees that the machine is about to be shut down and locked out.

Specific Instructions:

_____
_____
_____
_____
_____

3. Shut down the machine using normal stopping procedures.

Specific Instructions:

_____
_____
_____
_____
_____

4. Isolate all energy sources listed above.

Specific Instructions:

_____
_____
_____
_____

5-A. Apply locks to all isolation devices operated in step four.

Specific Instructions:

_____
_____
_____
_____

5-B. If a tag is used in lieu of a lock when the energy isolating device is incapable of lockout, the following additional safety precaution(s) shall be taken:

_____
_____
_____
_____

6. Block or dissipate all stored energy in rams, flywheels, springs, pneumatic, or hydraulic systems, etc.

Specific Instructions:

_____
_____
_____
_____

7. Verify that the machine is locked out by testing the machine operating controls. RETURN ALL CONTROLS TO THE "NEUTRAL" OR "OFF" POSITION AFTER TESTING.

Specific Instructions:

_____
_____
_____
_____

APPENDIX 6 – PROCEDURE FOR REMOVING LOCKS/TAGS

1. Check the machine to be sure it is operationally intact, tools have been removed, and guards have been replaced.

Specific Instructions:

_____
_____
_____
_____

2. Check to be sure all employees are safely positioned.

Specific Instructions:

_____
_____
_____
_____

3. Notify all affected employees that locks/tags are going to be removed and the machine is ready for operation.

Specific Instructions:

_____
_____
_____
_____

4. Remove all locks, blocks, or other energy restraints.

Specific Instructions:

_____
_____
_____
_____

5. Restore all energy to the machine.

Specific Instructions:

_____
_____
_____
_____

Other comments:

_____
_____
_____

APPENDIX 7 - Testing

LOCKOUT TAGOUT KNOWLEDGE TEST

NAME:

COMPANY:

DATE:

1. Which of the following classifications of employees may place or remove locks and tags?

   A. Affected

   B. Authorized

   C. Other

2. Which of the following are examples of energy?

   A. Electrical D. Mechanical G. All of them

   B. Gravity E. Pneumatic

   C. Thermal F. Hydraulic

3. Who may remove a lock under normal circumstances?

   A. Only the employee who placed it

   B. Affected employees if it's in the way

   C. Supervisors if it is important

4. Who may remove a lock under emergency situations?

   A. Only the employee that placed it

   B. A manager and supervisor using documented procedures

   C. The first rescue person showing up

5. Reviewing the scope of work and identifying all isolating devices must be done prior to starting work under lock and tag protection.

   _____True _____False

6. After identifying and locking out all sources of energy, the authorized employee must then _____ and verifies that the equipment/machine has been de-energized.

7. When locks and tags are to be removed and the machine/equipment placed back in service, the authorized employee must first:

   A. Make sure all tools are clear
   B. Make sure guards are in place
   C. Make sure employees are clear
   D. Notify affected employees
   E. All of the above

8. Non-reusable self-locking hand-attached locking devices with a minimum of 50 lbs. breaking strength must be used to place tags.

   _____True _____False

9. If tags are used without locks, the system must be:

   A. Unlockable
   B. Protected by one plus
   C. Covered by an exception to the written policy
   D. All of the above

10. Any and all questions regarding lockout/tagout must be asked before continuing work.

    _____True _____False

LOCKOUT TAGOUT KNOWLEDGE TEST

ANSWER SHEET

1. B
2. G
3. A
4. B
5. TRUE
6. TEST
7. E
8. TRUE
9. D
10. TRUE

MAGNUM CONSTRUCTION COMPANY INC.

NEW HIRE ORIENTATION

New hire orientation for all employees shall be conducted by the supervisor on the date of hire. For purposes of this training, any employee rehired after an absence of 6 months shall be considered a newly hired employee.

The new hire orientation in order to comply with the company safety policy covers the following topics:

1. Tour of Department or Areas
2. Proper Lifting Procedures
3. Personal Protective Equipment Issued
4. Procedure for Obtaining, Repairing, and Cleaning of Protective Equipment
5. What to do in the Event of Injury
6. What to do in the Event of an Accident
7. Fire Safety/Emergency Planning Rules
8. Special Clean-up Rules
9. How to Report Unsafe Conditions
10. Company Safety Manual
11. Right to Know Manual
12. Lockout/Tagout
13. Applicable MIOSHA Standard
14. Fall Protection

Documentation of New Hire Orientation will be by use of the Foreman's New Employee Check Sheet. A copy of the completed check sheet will be maintained in the employee's file.

FOREMAN'S NEW EMPLOYEE CHECKLIST

JOB: _____ DATE: _____

To be completed by Foreman for all new crew members.

Introduction: Take employee on tour of work areas and familiarize them with departments and facilities.

Explain: Go through details on safety requirements.

Demonstrate: Explain the job with detailed demonstrations that specify safety practices.

Test: Have employee do the job while you watch. Correct any unsafe acts.

Double Check: During the first few weeks, observe and evaluate.

	Circle One		
Tour of Dept. or Area	YES	NO	N/A
Proper Lifting Procedures	YES	NO	N/A
PPE Issued	YES	NO	N/A
Cleaning PPE	YES	NO	N/A
What to do in event of injury	YES	NO	N/A
What to do in event of accident	YES	NO	N/A
Fire Safety/Emergency Planning	YES	NO	N/A
Special Clean-up Rules	YES	NO	N/A
Reporting Unsafe Conditions	YES	NO	N/A
Company Safety Manual	YES	NO	N/A
Right to Know Manual	YES	NO	N/A
Lockout/Tagout	YES	NO	N/A
Applicable MIOSHA Standard	YES	NO	N/A
Fall Protection	YES	NO	N/A

FOREMAN: _____

EMPLOYEE: _____ SS #: _____

PERSONAL PROTECTIVE EQUIPMENT POLICY

Because construction sites pose a wide variety of hazards, the foreman must complete a documented hazard review prior to beginning the job. Tasks will be reviewed to identify possible hazards. Proper personal protective equipment (PPE) shall be provided and fitted to each employee and training prior to the commencement of work on their use shall be completed. It shall be the job site foreman and superintendent's responsibility to insure that the PPE is used properly.

PPE that will be required on all job sites are a hard hat, safety glasses, and over the ankle work boots. Additional PPE will be noted in the Superintendent's log as well as documentation of training on its use. Information regarding PPE including how to adjust/wear, fitting, limitations of, care and maintenance shall be documented and kept on site or at the main office.

Other PPE shall be arranged for as needed by the site foreman. Defective equipment shall not be used.

The assigned supervisor shall insure all employees are trained in the selection, use, care, and replacement of personal protective equipment needed for the work they are doing. This must include cleaning and replacement procedures.

Minimum protective equipment training will include the use and limitations of:

1. Face and eye protection per ANSI Standards, z87.1.
2. Head protection per ANSI Standards, z89.1.
3. Glove type and limitations.
4. Full body protection from chemicals and heat.
5. Protective foot wear such as steel toed shoes and metatarsal guards as per ANSI Standards z41.
6. Minimum clothing will be a shirt that covers the shoulders, long pants, and good sturdy work shoes.
7. Retraining on the above will be required if and when the employee's performance shows they no longer retain the level of knowledge they were trained to or if there is a change in company policy, equipment, or OSHA Standards.

Any exceptions to the above must have written approval from the assigned supervisor. Use of employee owned personal protective equipment must also be approved by the site foreman.

FOOTWEAR:

Shoes that are acceptable include a hard sole, leather upper work boot or shoe, fit properly, and will be in good repair. The use of tennis shoes or "street" shoes is not permitted.

When the activity involves a high risk for foot injury (jack hammering, tampers, etc.), the individual is required to wear approved safety toe shoes or company issued slip-over guards.

On projects where the owner has made safety toe shoes mandatory, the employee will be responsible to comply with this requirement. Safety toe tennis shoes will not be permitted.

HAND PROTECTION:

Gloves will be required and worn when the employee is to handle any chemicals or other material or equipment that could cut or puncture the hands.

WORK CLOTHING – FIRE RETARDANT WHERE REQUIRED:

Each employee shall be dressed in a minimum of long pants, socks, and shirt that covers the shoulders. Clothing that is loose-fitting, torn, or frayed is not to be worn if it creates a hazard.

WORKING OVER OR NEAR WATER:

When work is performed over or near water where the danger of drowning exists, each employee will be provided a U.S. Coast Guard approved life jacket or buoyant work vest.

Ring buoys with a minimum 90 feet of line shall be made available at intervals of every 200 feet. A life-saving motor driven boat with oars is to be made available at the job location.

WORKING AROUND VEHICULAR TRAFFIC:

Employees will be provided orange or red traffic safety vests when exposed to vehicular traffic (public streets, roads and highways). Each employee engaged in directing traffic is to be equipped with orange flags and trained by a competent person. Night work requires the use of reflective vests and flags.

SAFETY HARNESSES AND LANYARDS:

A safety harness is to be provided and properly utilized when the employee is exposed to falls exceeding 6 feet. Lanyards are to be connected to minimize the drop as much as possible and be equipped with a double-locking (two-action) snap. Any harness or lanyard subjected to loading is to be removed from service. There devices are to be used as indicated by the manufacturer. Any other uses such as hoisting material is strictly forbidden. Specific requirements are contained in the Fall Protection Program and Scaffold Program contained in this safety manual.

EMPLOYEE-OWNED SAFETY EQUIPMENT:

Any safety equipment that is owned by the employee shall be approved by the site supervisor and meet the following:

1. All equipment must be inspected as listed in the policy by someone on site other than the owner.
2. All equipment must be something that is not currently owned by Magnum.
3. All employee-owned safety equipment shall be the responsibility of Magnum while in use for our work.

EYE PROTECTION

Always use approved eye protection of the proper type whenever you are doing or are around the following:

1. Chipping, grinding, or hammering on metal, stone, or concrete.
2. Using manual pneumatic, and power impact tools.
3. Cutting, drilling, scraping, or brushing metals.
4. Soldering, brazing, and welding.
5. Handling hot liquids.
6. Handling acids or caustic materials.
7. Working around blowing or drifting particles.
8. Anytime you realize your eyes are subject to injury.

REMEMBER:

A. Minimum eye protection is minimum eye protection. Use goggles or face shield when safety glasses are not enough to protect you.

B. Small objects like glass, dirt and metal dust can be sharp or contaminated. Don't cause them to become embedded in your eye by rubbing them.

C. Each year, a lot of people can't see reporting and getting treatment for small objects in their eye, now they just can't see.

FALL PROTECTION AND PREVENTION

This policy applies to all work areas with a fall exposure of 6’ or more above the floor, ground, or other surface.

This policy also applies to all work areas regardless of height when over or near hazardous equipment, operations, or materials.

Training:

All employees assigned to elevated work operations will be trained in the following:

1. Nature of hazard of the work area.
2. Selection, use, inspection, and limitations of fall protection equipment.
3. Procedures for reporting unprotected work areas.
4. The contents of this policy and the OSHA regulations pertaining to fall protection. All training documentation will include: the date of training, the name of the instructor, and the subject of the training. All training records will be kept at the main office and made available as required by OSHA.

DEFINITIONS:

Competent Person – One who is experienced and capable of identifying an existing or potential hazard and has the knowledge, training, and authority to take prompt corrective action to eliminate the hazard.

Anchorage – A secure point of attachment for lifelines or lanyards that is capable of supporting 5400 pounds.

Harness – Straps that when secured around the employee distributes the fall arrest forces over at least the thighs, pelvis, waist, chest, and shoulders.

Lanyard – A flexible line of rope, wire, or strap with a connector that connects to a harness and anchorage. Lanyards must be capable of supporting over 5000 pounds and have a shock absorber attached to limit the fall arresting forces.

Infeasible – When it is impossible to perform the work using conventional fall protection such as guardrails, harness/lanyard, safety nets, catch platforms or other fall prevention or protection devices.

Controlled Access Zone – An area where work must be done without the use of guardrails, fall arrest systems or safety nets which has access to the zone being controlled.

Warning Line System – A barrier erected on a roof to warn employees that they are approaching an unprotected roof, side, or edge.

Safety Monitoring System – A safety system which allows a competent person to be assigned to warn employees of fall hazards. Note: For use during roofing work only on low sloped roofs. Competent person must be determined and assigned by site Foreman.

GENERAL RULES

Controlled access zones, warning lines, and safety monitoring systems may only be used when both a competent person and a supervisor have examined the work operation and documented with a written fall protection plan that a conventional fall protection is infeasible.

For purposes of this policy, all field foremen are certified by training and/or experiences to be competent persons in the area of elevated work safety.

Any fall protection equipment once used in a fall must be removed from service.

Any incident involving a fall shall be treated and investigated as a serious incident.

Management and Supervision are committed to fall protection for all employees as well as any sub-contractor employees they may use.

Employees working from open sided floors, platforms, or other work areas, regardless of height that are above and/or next to hazardous equipment, tanks, or operations will be protected by a standard guardrail system, perimeter cable, or fall protection harness and lanyard.

Fall protection to be used when standard guardrails or perimeter cables are not practical or available will consist of the following as a minimum:

Full body harness meeting ANSI standards.

½" synthetic fiber rope or strap lanyards with double locking devices and shock absorbing feature meeting ANSI standards.

Point of tie off should be above the work area but in no case will the lanyards allow for a drop of more than 6 feet.

Fall protection rules listed below will also be read and followed by all employees.

All fall protection equipment will be inspected prior to each use and meet OSHA Standards as a minimum.

Fall protection lanyards and body harnesses will be protected from sparks and slag resulting from welding or cutting operations.

Weekly Tool Box Safety Meetings will be used as fall protection reminders.

All fall protection equipment found to be damaged shall be removed from the job site immediately.

Minimum fall protection training will include:

Selection of anchor points.

Selection, use, care, and limitation of fall protection equipment such as lanyards, lifelines, harnesses, and catch platforms.

Inspection of fall protection equipment before each use.

Note: Safety observers and warning lines will not be allowed in place of fall prevention or protection without a site detailed written fall protection plan approved by supervision. This plan must be available at the work site and reviewed by all affected employees.

Rescue Planning

GENERAL:

A rescue plan will be developed for each site or location where fall protection could result in an employee being suspended by safety equipment. The rescue plan shall detail the retrieval of an employee and returning them to a safe location. All employees that have been rescued shall be seen by medical personnel before returning to work. All equipment used in a fall arrest shall be tagged and removed from service. Once the investigation is complete, this equipment shall be destroyed.

RESCUE PLAN:

A rescue plan shall include the following elements:

1. Determine if 911 works and the response time.
2. Understand the customer's planning and equipment.
3. Determine if training is necessary for rescue crew.
4. Determine if the rescue personnel will be on site or standby.
5. Understand the type of rescue that could be required.
6. Perform a Job Safety Analysis of any rescue operation.
7. Make sure all equipment needed for a rescue is available.
8. How is first aid going to be available?
9. Who is to be notified of a rescue?

PROCESS SAFETY MANAGEMENT

OF HIGHLY HAZARDOUS CHEMICALS

Our company is committed to safety. We therefore realize and understand that every one of our employees must know how to carry out all phases of their job description safely. We further acknowledge that this is an ongoing challenge to our organization. The purpose of process safety management is to prevent or minimize the consequences of catastrophic releases of toxic, reactive, flammable, or explosive materials. It shall be the responsibility for our company to cooperate fully with our employees to meet or exceed the requirements of 29 CFR 1910.119(h), the Process Safety Standard.

We accept the following items to be part of our obligation and the responsibility of our site foreman.

1. Assure that each of our employees is trained in the work practices necessary to his job duties.
2. Assure that each of our employees is instructed in the known potential fire, explosion, or toxic release hazards associated with his job duties and the process of the job area. Each of our employees must also be instructed in the applicable portions of the emergency action plan for the affected work area(s). Material Safety Data Sheets and owner representatives shall be utilized for control of hazards and procedures.
3. Assure that the training required by the Process Safety Standard is given to and received and understood by each employee and documented. These records will contain at least the following information:

    A. Identity of employee and trainer

    B. Date of training

C. Means used to verify that the employee understood this training.

4. Assure that each of our employees obeys the safety rules and regulations of the facility where we are working. Examples are accident reports, investigations, corrections, following lockout procedures, confined space entry procedures, hot work procedures, and general safety rules.

5. Assure that our foremen advise the facility of any unique hazards presented by our work or of any hazards found by our work in the associated work area.

6. Our foremen will assist in all incident investigations.

Once our company's bid is approved, we will meet with the safety representative(s) of the employer to fully comply with our obligations to the Process Safety Standard whenever our work area is associated with the employer's highly hazardous chemicals. This we will do by following the above listed six step program. All trade secret information will be kept confidential.

MAGNUM CONSTRUCTION COMPANY INC.

RECORDKEEPING/INCIDENT REPORTING

RECORD KEEPING MIOSHA 300

Form 300 "Log Work Related Injuries and Illnesses" will be filled out by the Safety Director.

This form will be kept up to date within 6 days of the most recent injury or illness.

This form will be used to determine the company recordable injury rate by use of the following formula – Number of injuries multiplied by 200,000 divided by the actual hours worked. Example: A company works 251,000 hours with 2 recordable injuries. 2 multiplied by 200,000 = 400,000 divided by 251,000 = the recordable rate of 1.5.

The recordable rate is the number of employees injured per 100 workers. This is based on the number of hours 100 full-time employees work in a year.

The right half of the Form 300 must be posted from February 1 until May 1, each year. The forms will be maintained for a 5 year period of time.

MAGNUM CONSTRUCTION COMPANY INC.

INCIDENT INVESTIGATION/REPORTING

1. Accident and incident investigations shall be fact finding and confined to analysis of the occurrence and development of preventative measures.
2. In the event of any occurrences involving injury or major property damage, Management and the Safety Director are to be notified immediately.
3. No equipment, apparatus, appliances, or material involved in a serious accident shall be moved until a proper investigation can be conducted. (Except to the extent that such movement is necessary for rescue or other prompt remedial action and to prevent further injury and/or property damage.
4. The Supervisor shall investigate all incidents and accidents. They will be assisted in their investigation by the Company Safety Director.
5. The Safety Director shall have the sole responsibility for distribution if Incident Reports.
6. Serious incidents may at the judgement of the Safety Director require and in-depth investigation (Root Cause). In such cases, the Safety Director will assemble an investigation team that includes Management.

RESPIRATOR PROTECTION POLICY

OBJECTIVE: Reduce the probability of an employee suffering from ill health while working in a contaminated or oxygen deficient atmosphere and/or when engineering controls cannot remove the hazard. Respirator use shall not be used in place of controls.

ADMINISTRATION: The jobsite foreman shall have the responsibility to make sure the respirator program is enforced at the jobsite. The foreman shall monitor the effect use of this policy and report problems to the Safety Director.

RESPIRATOR SELECTION

The following will be considered when selecting respirator:

1. Nature of hazard.
2. Characteristic of the hazardous operation or process.
3. Location of hazardous area.
4. Use time-continuous, intermittent, emergency, or rescue use.
5. Wearer activity.
6. Respirator characteristics, capabilities, and limitations.
7. Respirator protection factor and fitting test – qualitative and quantitative fit test will be used to determine the fit.

APPROVED RESPIRATORS

The only respirators that are to be used in this program shall be respirators that are approved by NIOSH, MSHA, or U.S. BUREAU OF MINES.

MEDICAL EVALUATIONS

Using guidelines established by a physician, the management will determine whether or not a worker shall be assigned a task requiring the use of a respirator. This determination will be reviewed annually.

A physician shall determine what physiological limitations are pertinent for a worker to wear various types of respirators. The limitations which the physician will consider are: emphysema, chronic obstructive pulmonary function, coronary artery disease, cerebral blood vessel disease, severe hypertension, epilepsy, pernicious

anemia, diabetes, punctured eardrum, breathing difficulty/claustrophobia/anxiety when wearing a respirator, missing limbs, physical strength, etc.

Some factors which prevent a seal of the respirator to the wearer and prohibit the use of a respirator are:

1. Beard, mustache, sideburns, low hairline, and bangs can affect the seal.
2. Hair (mustache/beard) which interferes with the function of respirator valves.
3. Eyeglass temple bars or straps which affect the seal.
4. Wearing of eyeglasses, goggles, face shield, welding helmet, or other eye and face protective device which interferes with the respirator fit.
5. Facial configurations (scars, creases, hollow temples, protruding cheekbones, absence of teeth/dentures) which can affect the respirator fit.

WEARER TRAINING & FITTING TESTS

To ensure the proper and safe use of respirator, the training of the respirator wearer shall include the following:

1. Reasons for the need of respirator protection.
2. Nature, extent, effects of the respiratory hazards if the protection is not worn.
3. Explanation of why engineering controls are not being applied or not adequate.
4. Reasons for selecting the particular type of respirator.
5. Explanation of the function, capability, and limitation of the selected respirator.
6. Instructions for inspecting, donning, and checking the fit of the respirator.
7. Allow the wearer to handle the respirator, wear it, check the seals, and use of the respirator.
8. Explanation of maintenance and storage of the respirator.
9. Instructions for recognizing and coping with emergency situations.

10. Regulations regarding respirator use.

11. Retraining will be provided annually or when employee performance shows they no longer retain the required knowledge.

The wearer shall be provided a properly fitted respirator. Respirator fitting tests shall be carried out for each wearer of a respirator. These tests shall consist of qualitative and quantitative tests. Records of respirator fitting tests shall be kept at least for the duration of wearer employment. Fit Testing shall be updated annually. Records available from the Safety Director.

The wearer is required to check the face seal of the respirator prior to each use.

All respirators and training will be provided at the company's expense with no cost to the employee.

EXCLUSIVE WEARER USE

When practical, a respirator should be assigned to a single worker's exclusive use. The person issuing the respirator shall have training to assure the proper respirator is issued.

RESPIRATORS CLEANING/SANITIZING: DISPOSABLE RESPIRATORS ARE NOT SUBJECT TO THIS

Each respirator shall be cleaned and sanitized. This must be done on a daily basis for each respirator that is assigned to an individual worker. This must be done after each use for those respirators that are not assigned to a specific worker.

The recommended procedures for cleaning and sanitizing are:

1. Disassemble all component parts of the respirator, separate the more delicate valve assemblies and speaker diaphragms from the face piece components. Test each group separately.
2. Wash in a warm (120F max temperature) cleaner-sanitizer solution.
3. Thoroughly rinse with warm water (120F max temperature).
4. Drain and hand wipe all face piece components with a damp lint-free cloth and allow to air dry. Drain the valve assemblies and speaker diaphragms and allow to air dry.
5. Inspect parts and replace those that are defective.
6. Reassemble parts on the face piece assembly.

7. Attach new filters, cartridges, or canisters.
8. Visually inspect and where possible test parts and assemblies for proper function.
9. Place assembled respirator in appropriate containers for storage.

If the respirator was contaminated with toxic materials, a decontamination step should be completed prior to the above cleaning and sanitizing procedures.

RESPIRATOR INSPECTION/MAINTENANCE

Each respirator shall consist of: tight connections, head harness, connecting tubes, harness assembly, filters, cartridges, canisters, service life indicators, shelf life dates, sand the proper functioning of the regulators, alarms, and warning systems. Each rubber or elastomeric part shall be inspected for pliability and signs of deterioration. Air and oxygen cylinders shall be checked to ensure that it is fully charged according to the manufacturer's instructions.

Part replacement and repair: The replacement of parts or repairs shall be done only by persons trained in proper respirator repair.

Regulators, pressure reducing valves, and alarms shall be returned to the manufacturer or to a trained technician for repairs or adjustments.

A record of inspection dates, findings, and remedial action shall be kept for each emergency or rescue-use respirator.

RESPIRATOR STORAGE

The respirator shall be stored in a manner that will protect them against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. The respirator shall also be stored in a manner which prevents distortion of the rubber or other parts.

Emergency and rescue-use respirators that are placed in the work area shall be properly stored in a cabinet or container that is clearly marked. These respirators shall be inspected at least once a month.

WORK AREA SURVEILLANCE

The work area of the respirator wearer shall be monitored periodically for respiratory hazards. Both time-waited average

exposure concentrations and peak exposure concentration of air contaminates and oxygen shall be monitored.

The use of respirators shall be monitored to ensure that the correct respirators are being used, the respirators are properly worn, and the respirators are in good working order.

Any work area found to contain an atmosphere that may be immediately dangerous to life and health is not to be entered at any time, regardless of respirator use.

Any work area or task found to require supplied air respirators or self-contained breathing tank, must have a written Standard Operating Procedure (SOP) approved by the Safety Director.

SARS and SCBA type respirators are not normally used and will only be approved for special tasks. When approved, only Grade D or better quality air shall be allowed.

MAGNUM CONSTRUCTION COMPANY INC.

Roles and Responsibilities

MANAGEMENT RESPONSIBILITIES

Company Management as the Employer is responsible for all aspects of this program and through the Supervision and Safety Director will meet this responsibility by:

1. The coordination of this program will all employees.
2. Designating a trained, qualified Safety Director to administer the program.
3. Weekly reviewing results of the Safety Director's activities.
4. Supporting and funding safety training and equipment purchases.
5. Reviewing all employee incident/injury reports.
6. Recognizing positive employee involvement and program success.
7. Promoting safety awareness throughout the organization by setting a good example.
8. Actively participating in and with local safety organizations.
9. Ensuring all employees' rights to a work place free of recognizable hazards.

MAGNUM CONSTRUCTION COMPANY INC.

SUPERVISOR RESPONSIBILITIES

Supervisors are responsible for the safety of their crew and day to day compliance with company and customer safety rules. As front line supervision, Supervisors are considered to be the Safety Representatives of their crew and are charged with the following:

1. Referring all safety related questions they are unable to answer to the Safety Director.
2. Daily observing each member of their crew to ensure they are physically capable of performing the task assigned to them.
3. Daily checking all work areas, tools, and equipment to ensure unsafe conditions are eliminated or guarded against.
4. Ensuring all crew members are aware of procedures to follow in the event of an accident or other emergency.
5. Giving instructions to all crew members on the avoidance of job or site related hazards.
6. Conducting a weekly Tool Box Safety Meeting (10-15 min.) using company format and encourage employee input and suggestions.
7. Conducting a documented weekly Safety Audit of the work area.
8. Using the new employee orientation check sheet for all new hires, rehires, or transfers to their crew. Route the completed and signed check sheet to the Safety Director.
9. Reporting all incidents and near miss incidents to the Safety Director and assist as requested in the investigation and corrective action.
10. Instructing or arranging training for each crew member regarding the operation procedures, hazards, and safe guards of tools and equipment necessary to perform job.

SAFETY DIRECTOR RESPONSIBILITY

The Safety Director is responsible for assisting Company Management with the direction and success of the safety process.

1. Conduct a full investigation of all incidents, ensuring the supervisor and/or the involved employee take an active part.
2. Develop and recommend corrective action and learning value from all incidents to all employees.
3. Prepare weekly topics for use at company-wide Safety Meetings held by the supervisor.
4. Conduct regular documented Safety Audits of jobsites and compare results with those of the site supervisor.
5. Maintain contact with clients and field supervision to assure maximum safety efforts are being used to prevent incidents.
6. Track company safety process and progress using field data from all supervisors and clients.
7. Develop and provide in-house training to supervisors and employees.
8. Maintain an active role in all job site safety teams and committees.
9. Remain knowledgeable and abreast of Federal, State, Local, and client safety regulations. Update to company Safety Manual and Program as needed.
10. Prepare and present a weekly Safety Activities Report to key management.

EMPLOYEE RESPONSIBILITIES

Employees are the source for any Safety Program and must, as a minimum, do the following to fulfill their role in safety.

1. Immediately report hazardous conditions or equipment to the supervisor.
2. Not operate a machine, tool, or equipment until trained in the operation procedures, hazards, and safeguards.
3. Use all required personal protective equipment and devices required for the operation you are assigned.
4. Never remove a guard or other safety device except for authorized servicing purposes. The guard or safety device must be replaced before the machine or equipment is returned to service.
5. Never knowingly operate any equipment or use a tool that is in an unsafe condition.
6. Respect all lockout/tagout programs (our and others'). NEVER remove or tamper with any Red Tag or red tagged energy source.
7. Make safety your personal goal and take an active part in your crew's weekly safety meetings.
8. Maintain the work area in a clean and safe manner. Housekeeping is a daily, ongoing responsibility of everyone.
9. Report any and all injuries to your supervisor immediately.
10. Never engage in any action that would endanger another employee.

WRITTEN HAZARDOUS COMMUNICATION PROGRAM
(RIGHT TO KNOW)

GENERAL

The following hazard communication (HAZCOM) program has been established. This program will be available for review by all employees.

I. HAZARD DETERMINATION

The foreman will be relying on Safety Data Sheets (SDS) from suppliers to meet determination requirements.

II. LABELING

A. The foreman will be responsible for seeing that all containers coming in are properly labeled and that SDS are available at the work site.

B. All labels shall be checked for:

1. Product identifier
2. Signal word
3. Hazard statement(s)
4. Pictogram(s)
5. Precautionary statement(s); and,
6. Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party.

C. Each foreman shall be responsible for seeing that all portable containers used in their work areas are labeled with identity and hazard warning.

D. A copy of the written program will be maintained by the foreman at the job site.

III. SAFETY DATA SHEETS (SDS)

B. As you are probably aware, the OSHA Hazard Communications Rule and the Workers Right-to-Know Laws are requiring that information on toxic and/or hazardous substances be made known to those who may have potential exposure to such substances. One means of communicating this information is the Safety Data Sheets (SDS).

OSHA uses the term SDS to denote any form of data sheet containing information on the physical properties and toxicity of a material.

An SDS consists of:

Section 1	Identification
Section 2	Hazard(s) Identification
Section 3	Composition-Information on Ingredients
Section 4	First-Aid Measures
Section 5	Fire-fighting Measures
Section 6	Accidental Release Measures
Section 7	Handling and Storage
Section 8	Exposure Controls/Personal Protection
Section 9	Physical and Chemical Properties
Section 10	Stability and Reactivity
Section 11	Toxicological Information
Section 12	Ecological Information
Section 13	Disposal Considerations
Section 14	Transport Information
Section 15	Regulatory Information
Section 16	Other Information including date of preparation or last revision

B. Management will be responsible for compiling the master SDS file. It will be kept at the main office.

C. Copies of SDSs for all hazardous chemicals to which employees may be exposed will be kept in a file at the main office.

D. SDSs will be available for review to all employees during each work shift. Copies will be available upon request to management.

E. The foreman will be provided with the required OSHA Right-to-Know posters and postings notifying employees of new or revised SDSs within 5 days of receipt of new or revised SDSs.

F. Magnum Construction Company must keep updated MSDS on all chemicals in the workplace. Any new or revised MSDS will be posted in the lunch room for a period of ten (10) days. MSDS are filed in a black binder in alphabetical order in the shop office and mail field trailer.

G. If an SDS is not available or a hazardous chemical/substance is received without a proper SDS, the Safety Director must be immediately notified. If, for some reason, the manufacturer or distributor is unable to produce a SDS upon request materials received without an SDS are to be returned to the sender.

H. Materials which can be purchased by the ordinary household consumer, and which are used for the intended purpose and amount as by the ordinary household consumer, do not require on site SDS.

IV. EMPLOYEE INFORMATION TRAINING

A. The foreman shall coordinate and maintain records of training conducted for their crews.

B. Before starting work or as soon as possible thereafter, each new employee will attend a safety class. In that class, each employee will be given information on:

1. Chemicals and their hazards in the workplace.
2. How to lessen or prevent exposure to these chemicals.
3. What the company has done to lessen or prevent worker's exposure to these chemicals.
4. Procedures to follow if they are exposed.
5. How to read and interpret labels and SDSs.
6. Where to locate SDSs and from whom they obtain copies.
7. This training must be documented using the trainer guide in Section 29 and the new hire check sheet in Section 23.

C. The employee will be informed that:

1. The employer is prohibited from discharging or discriminating against and employee who exercised their rights regarding information about hazardous chemicals in the workplace.
2. As an alternative to requesting a SDS from the employer, the employee may obtain a copy from the Department of Public Health.

D. Before any new hazardous chemical is introduced into the workplace, each employee will be given information in the same manner during the safety class.

E. Employees that do not read or understand English will receive individual training as needed to insure understanding.

V. HAZARDOUS NON-ROUTINE TASKS

A. On occasion, employees are required to do work in hazardous areas (e.g. confined spaces). Prior to starting work in such areas, each employee will be given information about the hazards involved in these areas by the crew foreman. This information will include:

1. Specific chemical hazards
2. Protection/safety measures the employee is required to take to lessen risks.
3. Measures the company has taken to lessen the hazards including ventilation, respirators, the presence of another employee, and emergency procedures.

B. No employee will begin work in a confined space (or any non-routine task) without first receiving a safety briefing.

VI. INFORMING CONTRACTORS

A. It is the responsibility of the Project Manager to provide any other contractors with employees exposed to our chemicals with the following information:

5. Hazardous chemicals with which they may come in contact.
6. Measures the employee should take to lessen the risks.
7. Where to get SDSs for all hazardous chemicals.

B. It is the responsibility of the Project Manager to obtain chemical information from contractors when they will expose our employees to hazardous chemicals which they may bring into our workplace.

VII. PIPE AND PIPING SYSTEMS

Information in the hazardous contents of pipe and piping shall be readily available by contacting the main office.

VIII. LIST OF HAZARDOUS CHEMICALS

A full list of the chemicals can be obtained by reviewing SDSs at the main office.

RIGHT TO KNOW TRAINING GUIDE

Section 1 – Introduction

The Occupational Safety and Health Act (OSHA) was amended to include requirements for the communication of information regarding the safe handling of hazardous chemicals in the work place. These amendments are known as the "Right to Know" Law.

The law requires a communication program designed to safeguard the handling of hazardous chemicals through labeling of chemical containers, development and availability of SDSs, the training of employees working with these chemicals, and a written hazardous communication program developed by the employer.

The law also provides for specific employee rights. They include:

1. The right to be notified by the employer of the locations of SDSs.
2. The right to be notified by employer posting of now or revised SDSs no later than 5 working days after receipt.
3. The right to request SDSs from their employers.
4. The right to protection from discrimination or discharge resulting from the request for information regarding hazardous chemicals under the "Right to Know" law.

Section 2 – Definitions

Before we get into the actual written program, you should become better informed regarding the terms of this standard.

* Instructor's Note: At this point pass out and review the Pertinent Definitions Sheet.

Section 3 – Written Program

A copy of the Federal and State Standard as well as this company's written program are available in the office for your review during working hours.

We will also go over it at this time. To start with, the program has 3 separate parts. First, an inventory of all known hazardous chemicals in our workplace. Second, a file of SDSs for the chemicals on the inventory. Third, the written program itself.

* Instructor's Note: Have a copy of the written program and review the following:

1. The location employees may find the program, inventory, and SDSs.
2. How the data sheets are filed for easy access?
3. Who is included? (all divisions and sections)
4. Who is responsible for insuring containers are labeled when they are received?
5. Who is responsible for insuring secondary containers are labeled when material is transferred?
6. Who is responsible for maintaining and upgrading the program and SDSs?

Section 4 – Routine and Non-Routine Tasks

* Instructor's Note: This will vary from location to location. Therefore, it is suggested you discuss the common chemicals and hazards found or likely to be encountered by the class you are instructing. Encourage input from those in attendance. Points to cover will include:

1. Physical and health effects.
2. Methods and techniques used to determine spills leaks, and releases.
3. How to lessen exposure by use of protective equipment or work practices.
4. Steps the company has taken to reduce exposure.
5. Emergency procedures to follow if an employee is exposed.

Non-routine work involving hazardous materials will only be conducted after a special safety meeting with involved employees to alert them of the hazards and protective equipment they will need.

Section 5 – Labels

Labeling of hazardous material containers may be by sign, placecard, process sheets, batch tickets, operating procedures, or other written means. Non-English labels will be provided as needed for Non-English speaking employees.

Labels must contain the following information:

1. Contents of the container
2. Hazard Warning
3. Who to contact for more information

* Instructor's Note: Pass out labeling handouts and review with the class. (Sample Label Information, Sample Container Label)

Section 6 – Material Safety Data Sheets

All SDSs must contain 13 points of information and no space can be left blank. Of a section does not apply, it must be so marked.

MAGNUM CONSTRUCTION COMPANY INC.

PERTINENT DEFINITIONS

Article: A manufactured item

- formed to a specific shape or design
- has end use functions dependent on whole or in part upon its shape or design during end use
- which does not release or otherwise result in exposure to a hazardous chemical under normal conditions of use
- examples of non-articles are: grinding wheels and welding rods

Chemical: Any element, chemical compound, or mixture of elements and/or compounds.

Hazardous Chemical: Any chemical which is a physical hazard or health hazard.

Health Hazard: A chemical for which there is statistically significant evidence, based on at least one study conducted in accordance with established scientific principles, that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic systems, and agents which damage the lungs, skin, eyes, or mucous membranes.

Physical Hazard: A chemical for which there is scientifically valid evidence that it is a: combustible liquid, compressed gas, explosive, flammable, organic peroxide, oxidizer, pyrophoric, unstable, or water reactive.

Container: Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical.

Exposure: An employee is subjected to a hazardous chemical in the course of employment through any route of entry (inhalation, ingestion, skin contact, absorption, etc.) and includes potential (accidental or possible) exposure.

Foreseeable Emergency: Any potential occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control of equipment which could result in the uncontrolled release of a hazardous chemical into the work place.

SCAFFOLDING

GENERAL SCAFFOLDING RULES

1. No scaffolding may be erected, altered, moved, or dismantled except under the direct supervision of the competent person. The competent person must remain at the work location anytime the scaffold is in use.
2. Scaffolds and components shall be capable of supporting not less than four times the maximum intended load.
3. Any scaffold or scaffold component that is damaged or weakened shall be immediately replaced or repaired.
4. Poles, legs, or uprights of scaffolds must be plumb and securely braced to prevent swaying and displacement.
5. Scaffold supports must be sound, rigid, and capable of carrying the maximum intended load without settling or displacement.
6. You may use the horizontal members of the scaffold frame as an access ladder if:
    1. the components are compatible in design
    2. they are at least 11 ½ inches in length
    3. they are not more than 18 inches apart vertically
    4. they must be capable of supporting 300 pounds
7. Toe boards must be not less than 4 inches in height and used if there is a hazard to employees below the scaffold.
8. A rolling scaffold shall not exceed four times the smallest base dimension in height unless outriggers are in place.
9. Scaffold platforms are to be secured and cover the working surface's full width.
10. Guardrails or fall protection should be used anytime a fall hazard exists and must be used on scaffolding at ten feet or more in working height.
11. Rolling scaffolds must have 2 diagonal cross bracings located at intervals of not more than 4 times the least base dimension, with one being as close to the castors as possible.
12. Anytime standard guard rails cannot be provided, fall protection must be used.

SCAFFOLDING

1. Competent persons for scaffold operations must have no less than 1 year experience working with the type of scaffold being used. A list of competent persons is maintained at the office of the Safety Director for review. These competent persons will function as in-house trainers.

2. In addition to the 1 year experience, the competent person must have passed a written scaffold knowledge test with a score of not less than 90%. Questions on the test must reflect the contents of OSHA Scaffold Regulations.

3. No employee may work on or with any scaffold component until they have completed documented training on scaffold hazards such as falls, electrical hazards, overhead and falling hazards, and the limitations of the scaffolding they are employed to use. Employees will complete refresher training annually, following any serious accident they are involved in, and anytime their performance shows they do not retain the level of training they were given.

4. If a change in site or other working conditions results in hazards not previously present, all affected employees will be trained in the newly developed hazard.

5. Anytime a scaffold component is found to be unsafe by the competent person or any other trained employee, the component shall be tagged as "Danger: Do Not Use" and removed from the work area.

6. Before the start of any shift and/or after job site conditions change that may affect the safety of the scaffold, it shall be inspected by the designated competent person. The inspection shall use, as a minimum, the following scaffold safety checklist:

SCAFFOLD INSPECTION CHECKLIST

Type of Scaffold_____ Location_____

Are all scaffold components compatible?

Yes____ No____ N/A____

Are all scaffold supports straight, plumb, and not subject to swaying or displacement?

Yes____ No____ N/A____

If leveling screw jacks are used are they extended less than 18 inches?

Yes____ No____ N/A____

If scaffolding planks are used are they in good condition, scaffold grade, and cleated or secured against displacement?

Yes____ No____ N/A____

Will scaffold support 4 times the maximum intended load?

Yes____ No____ N/A____

If a rolling scaffold with a height exceeding 4 times the minimum base dimension, are outriggers in place?

Yes____ No____ N/A____

Have guardrails been installed on open sides and ends?

Yes____ No____ N/A____

If guardrails are not possible is scaffold marked "Scaffold does not meet MIOSHA Standards, fall protection required"?

Yes____ No____ N/A____

Is scaffold at least 10 feet from energized power lines?

Yes____ No____ N/A____

Has a safe access been provided to the work platform?

Yes____ No____ N/A____

Does this scaffold meet or exceed MIOSHA Part 12, Scaffold Requirements?

Yes____ No____ N/A____

Erected and/or inspected by _____Date_____

FOREMAN'S WEEKLY SAFETY MEETING PROCEDURES

1. Daily check the work area for unsafe conditions or acts. Correct the ones under your control and report the rest to the Safety Director.
2. At the end of each week, fill out a Safety Audit. Any acts or conditions corrected during the week should be marked on the audit.
3. Each week conduct the weekly tool box safety meeting by:
   A. Discussing the pre-written topic or using your own if more relevant to your site.
   B. Reviewing the audit results with your crew
   C. Discussing quality concerns with the crew and allowing for feedback.
   D. Having crew sign in.
   E. Dating the sheet at the bottom using the date of the meeting.
   F. Returning the sign-in sheet to the Project Manager or Safety Director based on comments.

USE OF TOOL BOX MEETINGS

Proper use of weekly tool box topics is a major part of our overall quality and safety program. Tool box meetings provide us with:

1. A means of keeping all field personnel up to date on safety issues.
2. A means for all field personnel to get feedback on safety issues to the supervisor.
3. A documented record of problems found and solved by use of the audit.
4. A record of employee involvement and commitment.
5. A chance for a supervisor and crew to discuss as a group both the positive and negative issues of a job.

In order for this program to work, the supervisor must use and discuss both the audit and the topic with the crew as a group. The sign-in sheet must be filled out, dated, and returned to the Safety Director each week.

WELDING AND CUTTING PROCEDURES

Our company is committed to keeping losses due to fire to a minimum. Therefore, please read the following information before operating any heat source. "Hot Work" occurs whenever work, or use of equipment can generate enough heat to cause ignition of flammable gases or combustible materials. Some examples would include: welding, burning, cutting, grinding, concrete chipping, chain saws or cut-off saws, electric tools, lighting, open flames, and the sparks given off from welding machines, and other internal combustible engine-driven machines. In other words, before you start hot work, you must review the following:

1. Do you need a written permit?
2. Do you know where the fire extinguishers are located?
3. Do you need a designated fire-watch person?
4. Do you know how and where to evacuate?
5. Does your work area need to be tested for combustible/flammable vapors, liquids, gases, or dust?

IF YOU AREN'T SURE OF THE CORRECT ANSWERS TO THESE QUESTIONS, CONTACT YOUR SUPERVISOR.

- Before lighting a cutting torch, or starting a welding arc, check the work area for the presence of any flammable or combustible material. If you can remove these materials, do so. Complete a hot work permit before beginning hot work.
- If these materials cannot be removed, a designated fire-watch must be employed to guard against sparks or open flames from igniting these materials. Before leaving the work area, you must check for burning or smoldering materials. The designated fire-watch person must remain in the work area 30 minutes after work has ended.
- Fire extinguishers of the proper type and capacity must be in an obvious visible location within easy reach of the workers. If a fire hose is needed, it must be in good working order.
- Communicate to all concerned parties in the work area that you are welding, cutting, and/or burning. Make sure you include the employer's person in charge of that area or building also.

ALWAYS CHECK WITH YOUR FOREMAN AND THE EMPLOYER'S SAFETY REPRESENTATIVE IF YOU ARE UNCERTAIN OF THE PROPER FIRE SAFETY PROCEDURES.

Any time all recognized hazards cannot be controlled or eliminated, the work may not proceed without a written Standard Operating Procedure (SOP) signed by the foreman and the project superintendent. The written SOP must be reviewed by the workers and posted at the jobsite.

HOT WORK PERMIT

Date:_____ Time:_____

Work Description: _____

Location of Work: _____

1. Display this permit on the job site, if required. Yes ☐ No ☐

2. Is the fire extinguisher in good working order? Yes ☐ No ☐

3. If the fire extinguisher in an easily visible area? Yes ☐ No ☐

4. Is a designated fire-watch person required? Yes ☐ No ☐

5. Is the area free of combustible material? If possible, cover combustibles with non-combustible blankets or similar devices. Contact employer safety representative for assistance.

Yes ☐ No ☐

6. Are manholes, sumps, pits, sewers covered? Yes ☐ No ☐

7. Does the area need to be "sniffed" for presence of explosive vapors? Yes ☐ No ☐

If so, who is required to perform the test?

You or the employer? _____

Explosimeter test

Time of test _____ Test Reading _____%LEL

8. Do other tests need to be performed? Yes ☐ No ☐

9. Were they done? Yes ☐ No ☐

10. Are wall and floor openings, doors, windows covered?

Yes ☐ No ☐

11. Have you told employees working in close location that are doing hot work?

Yes ☐ No ☐

Location of nearest fire alarm:

_____

Location of nearest telephone:

_____

Authorized by: _____

WELDING AND CUTTING SAFETY

GENERAL RULES

1. Only trained and competent persons shall be employed in welding, cutting, or brazing operations. Journeymen and apprentices under journeyman supervision shall be deemed competent.
2. All employees involved in welding, cutting, brazing, or other hot work shall be trained in proper fire extinguisher use.
3. Assigned fire watch employees shall be trained in fire extinguisher use and shall be familiar with the facilities and procedures.
4. Fire extinguishers shall be immediately available.
5. Defective equipment shall be removed from service and repaired only by qualified personnel.
6. A fire watch is required if a fire could develop, combustibles are closer than 35 feet or less if easily ignitable, a wall or floor opening is within 35 feet and expose combustibles, or combustible materials immediately adjacent to the opposite side of walls or ceilings.

GAS WELDING AND CUTTING

1. When hoisting or transporting cylinders, they shall be secured on a cradle, sling board, or pallet. Choker slings or electric magnets shall not be used for this purpose.
2. Valve protection caps shall be in place and secured when transporting or storing cylinders.
3. Cylinders being transported by powered vehicles must be secured in a vertical position with the valve protective caps in place.
4. Unless cylinders are firmly secured on a special carrier (oxygen-acetylene cart) intended for this purpose, regulators shall be removed and valve protection caps put in place before cylinders are moved.
5. A suitable cylinder truck, chain, or other steadying device shall be used to keep cylinders from being knocked over while in use or storage.
6. The cylinder valve shall be opened only when work is being performed.

7. Gas cylinders shall be secured in an upright position at all times except for short periods of time when they are actually hoisted or carried.
8. Cylinders, whether full or empty shall not be used as rollers or supports.
9. Leaking cylinders shall be moved outside if the leak cannot be stopped by shutting off the valve. They shall be tagged and safely bled empty if they present a hazard.
10. Compressed gas cylinders shall be legibly marked with either the chemical or trade name of the gas.
11. Oxygen cylinders shall be stored upright, secured, and separated from flammable liquids and gases a minimum of 20 feet or have a 4 hour fire wall 5 feet high separating them.
12. Employees shall be instructed in the safe used of fuel gas, particularly in the cracking of the valve.
13. Fuel gas hose and oxygen hose shall be easily distinguishable from each other.
14. When parallel sections of oxygen and fuel gas hose are taped together, not more than 4 inches out of the 12 inches shall be covered by tape.
15. Torches in use shall be inspected each day for leaking shut-off valves, hose couplings, and tip connections.
16. Torches shall be lighted by friction lighters and not by matches for from hot work.
17. Oxygen cylinders and fittings shall be kept away from oil or grease.

ARC WELDING AND CUTTING

1. Only manual electrode holders, which are specifically designed for arc welding and cutting shall be used.
2. Any current-carrying parts shall be fully insulated against the maximum voltage encountered to ground.
3. All arc welding and cutting cables shall be capable of handling the maximum current requirements of the work in progress.
4. Only cables with standard insulated connectors of a capacity at least equivalent to that of the cable shall be used.

5. Cables needing repair shall not be used and splices shall not be allowed within 12 feet of the electrode holder.
6. A ground return cable shall have a safe current carrying capacity equal to or exceeding the specified maximum output capacity or the arc welding units which it services
7. 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.
8. All ground connections shall be inspected to ensure that they are mechanically strong and electrically adequate for the required current.

FIRE PREVENTION

1. When practical, objects to be welded, cut, or heated shall be moved to a designated safe location. If the objects to be welded, cut, or heated cannot be readily moved, all movable fire hazards in the vicinity must be taken to a safe place or otherwise protected. If combustibles cannot be removed or protected, welding and/or cutting shall not take place.
2. Suitable fire extinguishing equipment shall be made available when welding, cutting, or heating is being performed.
3. For the elimination of possible fire hazards in enclosed spaces as a result of gas escaping through leaking or improperly closed torch valves, the gas supply to the torch shall be positively shut off at some point outside the enclosed space whenever the torch is not to be used. Overnight, the torch and hose shall be removed from the confined space.
4. Before heat is applied to a drum, container, or hollow structure, a vent or opening shall be provided for the release of any built-up pressure during the application of heat. The drum, container, or hollow structure shall also be tested for explosive hazards as needed.

VENTILATION

1. General mechanical ventilation shall be of sufficient capacity and arranged in a manner to maintain welding fumes and smoke within safe limits.

2. Welding, cutting, or heating of the following metals of toxic significance shall be performed with either general, mechanical, or local exhaust ventilation, airline respirator, or filter type respirators as appropriate:

    A. Zinc-bearing base of filler metals

    B. Lead base metals or coatings

    C. Chromium-bearing metals

    D. Mercury-bearing metals

    E. Beryllium-containing base or filler metal

3. Oxygen shall not be used for ventilation purposes.

COMBUSTIBLE MATERIALS

1. Where floor openings or cracks in the flooring cannot be closed, precautions shall be taken so that combustible materials on the floor below will not be exposed to sparks that may drop through the floor.
2. Where cutting or welding is done near combustible construction, fire resistant shields or guards shall be provided to prevent ignition.

PROTECTION OF PERSONNEL

1. Helmets and hand shields shall be used in a manner that protects the face, neck, and ears from direct radiant energy.
2. Filter plate shade numbers for helmets and hand shields shall be selected according to the type of welding operation. Refer to the table on page 9 for recommended shade numbers.
3. Personnel adjacent to welding areas shall be protected from radiant energy by non-combustible screens or required to wear appropriate goggles.

WELDING OPERATIONS EYE PROTECTION

	SHADE NO
Shielded metal arc welding 1/16, 3/32, 1/8, 5/32 inch electrodes	10
Gas-shielded arc welding (non-ferrous) 1/16, 3/32, 1/8, 5/32 inch electrodes	11
Gas-shielded arc welding (ferrous) 1/16, 3/32, 1/8, 5/32 inch electrodes	12
Shielded metal-arc welding:	
3/16, 7/32, 1/4 inch electrodes	12
5/16, 3/8 inch electrodes	14
Atomic hydrogen welding	10-14
Carbon arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 to 6 inches	4 or 5
Heavy cutting, 6 inches and over	5 or 6
Gas welding (light) up to 1/8 inch	4 or 5
Gas welding (medium) 1/8 inch to 1/2 inch	5 or 6
Gas welding (heavy) 1/2 inch and over	6 or 8

Cutting and Welding Equipment:

All equipment that is not found in proper working conditions must be tagged and removed from service.

VEHICLE SAFETY

GENERAL

1. All employees driving a company vehicle must have a valid driver's license.
2. Drivers of company vehicles are responsible for the occupants of the vehicle.
3. The use of seat belts in company vehicles is mandatory any time the vehicle is in motion.
4. All posted traffic control signs are to be obeyed.

IN CASE OF ACCIDENT

1. Stop and take all safety precautions to prevent further accidents or damage at the scene.
2. Ask someone to notify police, fire, emergency medical help or security. Do not leave the scene yourself, if possible.
3. Do not move an injured person unless they are in danger of more serious injury or death.
4. Make no statement of responsibility except to management or our insurance carrier.
5. Obtain the name, address, insurance company, vehicle type, and license plate number of other driver.

SUBCONTRACTOR SAFETY

GENERAL

1. All employees are required to treat all subcontractors with respect and avoid confrontations.
2. Any disagreements with subcontractors shall be handled by management level employees or directors.
3. In the event of a safety discrepancy on site, all work will stop until the safety item is addressed by management with the subcontractor's management.
4. Subcontractors will be invited to all pre-job and post-job safety meetings.
5. Subcontractors will be required to attend all tailgate safety meetings, site audits, and incident investigations when they are working on site.

MANAGEMENT RESPONSIBILITIES

1. All subcontractors will be screened and prequalified by management.
2. All subcontractors will meet the qualification to be a prime contractor in the local chemical plants including PSM and EMR.
3. If the subcontractor is not on the prime list, then a complete review of their OSHA 300 log, EMR, and Safety Program will be reviewed to meet the minimum requirements of our customer.
4. All subcontractors not on the prime contractor list for the chemical plants will be reviewed for post job safety performance by Magnum prior to being awarded future contracts.

POWER TOOLS

GENERAL

1. Power tools shall be defined as air tools, electrical tools, hydraulic tools, and tools powered by human power (hand tools).
2. All power tools shall be maintained in a safe working condition. Any tool found to be defective shall be tagged and removed from use.
3. No modifications shall be made to any tools.
4. All guards and safety equipment shall be used and remain in place. At no time shall a guard or safety feature be made inoperable for any reason.
5. The use of proper PPE shall be mandatory as per the PPE grid based on the tools being used.

MANAGEMENT RESPONSIBILITIES

1. Management shall review this policy periodically.
2. Management shall address tools and equipment at the monthly foreman's meeting.
3. Management shall address tools and equipment at the monthly general employee's meeting.
4. Management shall keep abreast of new tools and equipment to provide the best and safest tools available.

HYDROGEN SULFIDE EXPOSURE

Hydrogen Sulfide (H2S) Exposure

Employees shall be trained to understand hydrogen sulfide exposure and the risks associated with it.

The training shall cover the following:

1. Characteristics of hydrogen sulfide – toxic, colorless, rotten egg smell at low concentrations, flammable, soluble in water.
2. Examples of where H2S can be encountered: confined spaces, windless or low-lying areas, marshy landscapes, or in extremely hot weather.
3. Health effects of H2S exposure includes: eye irritation, headaches, dizziness, coughing, nerve control center of brain – effects breathing, and can easily lead to death.
4. Detecting high levels of H2S: fixed or portable monitors that alarm when high concentrations (20 PPM or 1910 or 10 PPM for 1926)are present. If this happens evacuation is necessary or a self-contained breathing apparatus shall be used.
5. Employees must be aware of the customer's or site specific contingency/emergency plan provisions.

PROCESS SAFETY MANAGEMENT CLARIFICATIONS

The purpose of Process Safety Management is to prevent or minimize consequences of catastrophic releases of toxic, reactive, flammable, and/or explosive chemicals.

1. It is Magnum Construction Company's responsibility to train all employees to perform their jobs safely and correctly. This manual serves as a guide for this purpose.

2. Employees will be trained in the potential hazards of their positions including, but not limited to, fire, explosives, or toxic release.

3. All training shall be documented.

4. All aforementioned safe-work practices are to be followed at all times, especially during operations that include lockout/tagout, confined space entry, opening process equipment or piping, and control over entrance to facilities.

5. Magnum Construction Company shall always inform the host company of any hazards found or unique hazards presented by Magnum's work.

6. Hot work permits (addressed completely in Section 22) will be obtained from the host company prior to any hot work beginning.

7. Any incidents or near misses will be reported to the host company immediately.

8. Magnum Construction Company understands and adheres to trade secret information confidentiality at all times.

9. Magnum Construction Company will follow and abide by the customer's Management of Change Program.

BENZENE EXPOSURE

Benzene Exposure

Employees shall be trained to understand benzene exposure and the risks associated with it.

The training shall cover the following:

1. Characteristics of benzene – clear, colorless, highly flammable, highly volatile, aromatic hydrocarbon, gasoline-like odor.

2. Examples of where benzene can be encountered: processing of petroleum, coking of coal, production of toluene and other aromatic compounds, and automobile exhaust.

3. Health effects of benzene exposure includes: eye irritation, skin irritation, headaches, dizziness, drowsiness, confusion, tremors, and loss of consciousness.

4. Benzene exposure can be measured through urine and blood tests.

5. Employees must be aware of the customer's or site specific contingency/emergency plan provisions.

MAGNUM CONSTRUCTION COMPANY INC.

HOT & COLD STRESS

Extreme heat or cold is a potentially dangerous hazard when working. Whether inside or outside, hot and cold extremes can play a major role in working conditions. The following are examples of what extreme hot and cold can lead to and will be included in the safety training:

Heat:

Heat stroke, heat exhaustion, heat cramps, heat rash, dehydration

How to Avoid/Reduce Severity:

Acclimation, temperature adjustment (indoors), regularly scheduled breaks, water consumption, monitor heat index, schedule most strenuous work during coolest times of the day.

Cold:

Hypothermia, frostbite, trench foot, dehydration

How to Avoid/Reduce Severity:

Acclimation, regularly scheduled breaks, water consumption, PPE, temperature adjustment (if indoors), schedule most strenuous work for warmest times of the day.

Emergency Action Planning

It shall be the foreman's job to plan and convey an Emergency Action Plan at each individual site. It will be addressed at the start of the job and will include evacuations, muster points, rescue plans, etc. Any new workers will be made aware of these plans.

MAGNUM CONSTRUCTION COMPANY INC.

Document Revisions and Approvals

Related Documents Magnum Construction Employee Handbook

Approvals This policy was approved by:

Jamie Kaufman/Magnum President — 11/12/12
(Name/Job Title) (Date)

Kevin Rozek/Magnum Safety Director — March 28, 2016
(Name/Job Title) (Date)

Document history The following information documents changes to this document.

Date	Revision By	Changes
2015-2016	Jaime Kaufman	Sections 39, 40, 41 added. Non-Entry Rescue Procedure added to Confined Space Entry Procedure. Rule 22 added to General Safety / Health Rules. Item #14 added to Mobile Lifting Equipment. Item #9 added to Process Safety Management Clarifications
Feb 2016	Kevin Rozek	Section 29 updated to comply with GHS Harmonization, "Right to know" material from Employee handbook consolidated with safety manual section
03/28/16	Kevin Rozek	Updated formatting, Added Navigation, added auto formatting for sections, added History Page, added self-updating save/print dates, Added "Magnum Construction" Water Mark