o

SAFETY MANUAL

January 2020

TABLE OF CONTENTS

Bloodborne Pathogens Policy

PURPOSE

In response to the hazards associated with workplace exposure to pathogens from blood and other bodily fluids, BIG Construction has set these guidelines to protect our workers in the course of first aid treatment, healthcare and occupied space construction, etc. It is BIG Construction's policy to treat any and all possible exposures to blood and bodily fluids as a serious threat to health.

RESPONSIBILITIES

PROJECT TEAM

- Provide all BIG Construction employees with bloodborne pathogen training and information via healthcare and/or site orientation, pre-construction meetings, etc.
- Coordinate with applicable staff to ensure that existing areas under construction have been thoroughly cleaned (e.g. Certificates of Clean).
- Report any bloodborne related incidents to BIG Construction's Insurance Department as soon as reasonably possible. The Project Team should also complete the required incident reporting documentation and forward this information to the Insurance Department.
- Coordinate post-exposure procedures with the affected parties, relevant staff, and/or BIG Construction Safety Department.
- Direct any blood-borne-pathogen-related questions or concerns to the BIG Construction Safety Department.

GENERAL REQUIREMENTS

DEFINITIONS

- Blood – human blood, blood components, and any products made from human blood.

- Bloodborne Pathogens – pathogenic microorganisms that are present in human blood and can cause disease in humans. These include but are not limited to the hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

- Contaminated – the presence or reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

- Contaminated Laundry – laundry which has been soiled with blood or other potentially infectious materials, or may contain sharps.

- Contaminated Sharps – any potentially contaminated object which could penetrate the skin, including but not limited to needles, scalpels, broken glass, broken capillary tubes, and exposed dental wires.

- Decontamination – the use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles, and the item is rendered safe for handling, use, or disposal.

- Engineering Controls – controls (e.g. self-sheathing needles, sharps disposal containers, etc.) that isolate or remove the bloodborne pathogens hazard from the workplace.

- Exposure Incident – a specific mucous membrane (such as eye or mouth), non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

- Other Potentially Infectious Materials –
  1. Any unfixed tissue or organ (other than intact skin) from a human (living or dead).
  2. Pathogen-containing cell or tissue cultures, organ cultures, or any other solutions in the use of experiments (this includes humans and animals).

- Parenteral – piercing mucous membranes or the skin barrier through such events as needle sticks, human bites, cuts, and abrasions.

- Personal Protective Equipment (PPE) – is specialized clothing or equipment worn by an employee for protection against a hazard.

- Regulated Wastes - liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

- Sterilize - the use of a physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores.

- Universal Precaution - an approach to infection control that assumes all human blood and certain bodily fluids are treated as if known to be infectious.

- Work Practice Controls - controls that reduce the likelihood of exposure by altering the manner in which a task is performed.

EXPOSUREDETERMINATION

The following employees/duties at risk of exposure to bloodborne pathogens will be required to follow all procedures set forth in this policy:

A. Designated First Aid Employees – all BIG Construction employees who have received formal first aid and/or bloodborne pathogen training, and who have been designated to render first aid treatment to injured employees at their particular location.

   The tasks or duties of these employees, which could result in direct exposure, include:
   - Treatment of an open or bleeding wound;
   - Retrieval, handling, and transport of detached limbs or tissue to a medical facility during an emergency;
   - Interim first aid treatment of employees who are vomiting, coughing mucous, or discharging other bodily fluids;
   - Administering artificial respiration to a victim;
   - Any other first aid treatment, which presents any exposure from possible contact with bodily fluids.

B. Healthcare and Occupied Space Construction – all construction employees whose job duties involve any construction work in a healthcare facility or occupied space. The tasks or duties of these employees, which could result in direct exposure include:

- Contact with a contaminated object as a result of construction work such as demolition, wiring, etc. that results in an exposure incident;
- Contact with blood or bodily fluid from an infected healthcare patient.

C. All construction employees in the workplace could have occasional exposure to blood or other body fluids resulting from medical emergencies involving fellow workers, whether through assisting the injured employee or from blood or body fluids which are released onto items or surfaces in their respective work areas. These will be treated as exposure incidents.

EXPOSURE SOLUTION METHODS

It is the intent of this policy to prevent the exposure to, and transmission of, bloodborne pathogens during the course of employment. All controls and precautions set forth below will be followed at all times to prevent possible transmission and infection from accidental contact with blood and other body fluids. The controls and precautions are as follows:

- Universal Precaution Method
- Engineering Controls
- Work Practices Controls
- Personal Protective Equipment
- Housekeeping Procedures

A. Universal Precaution Method – all construction employees, at all times, will treat blood and any other body fluids as if they are known to be infectious, regardless of the source. In instances where it is difficult to determine the source of fluid, assume it to be infectious. Secure the area so that no one else comes near it and report the issue to your supervisor immediately.

B. Engineering Controls – the facility (e.g. hospital) is responsible for sanitizing all areas prior to commencing construction. They must provide a reasonable Certification of Clean before construction can begin. All biological hazards must be removed from the area by the facility, including but not limited to sheets, needles, sharps, etc. All suction lines must be cleaned and sterilized. Dialysis sinks and drains must be sanitized. Ductwork from isolation units must be terminally cleaned and certified by the facility. Nuclear medicine must be terminally cleaned, including wipe down of all walls, equipment, etc. remaining in the area.

C. Work Practices Controls – the following work procedures will be followed in healthcare facilities at all times:

- Any bodily contact with blood or bodily fluids will require the exposed construction employee(s) to wash immediately with a germicidal soap and water. Contact with mucous membranes will require flushing with water immediately for no less than 30 seconds.
- All construction employees should wash/disinfect their hands immediately following removal of any PPE, as well as before eating, drinking, cosmetic application, lip balm application, handling of contact lenses, smoking or any other contact with the eyes or mouth.
- At no time will any construction employee attempt to handle any sharps or biohazard containers. If these are discovered in a work area, immediately stop the work, secure the area, and report the item to a supervisor immediately.
- No one is allowed into an area that is known to be contaminated until disinfection procedures have taken place.
- Construction employees are never to touch any area that cannot be seen without the proper protection.

- If an injury involving blood or other potentially infectious materials occurs, the injured employee should clean the area (when able). If this is not possible, contact the BIG Construction Safety Department to develop a plan for cleaning the area.
- All glass piping must be labeled and should not be handled by construction employees.

D. Personal Protective Equipment – BIG Construction will provide its respective employees with the appropriate PPE to perform their tasks both safely and correctly. An evaluation of the work area will be performed, the protective measures identified, and employees trained on those hazards and procedures.
   - All PPE must be properly cleaned, stored, and disposed of, including gloves, aprons, face shields/masks, etc.
   - Any clothing and garments which are penetrated by blood or other bodily fluids must be removed immediately.
   - Gloves must be worn when touching an area that cannot be seen (e.g. under and behind shelves, counters, and backsplashes), as well as when touching potentially contaminated surfaces or items.
   - Gloves must be properly disposed of and replaced if they become punctured, torn, or contaminated. Discuss applicable disposal procedures with the facility's infection control representative (when applicable).

E. Housekeeping Procedures
   - Any broken glass, scrap materials, and other small objects or items during the course of demolition work should be picked up using gloves, a shovel, etc. Avoid using unprotected hands.
   - The cleanup of any exposure incident must be coordinated through the staff (when applicable) and BIG Construction's Superintendent.

<u>RECORDKEEPING</u>

The following records will be maintained at each job site, with duplicates being sent to the main office as needed.

- Training – when applicable, the corresponding facility may require training for all construction employees on bloodborne pathogens and infection control.
- Incident Reporting – any discovery of contaminated materials, exposure incidents, etc. will be documented using the BIG Construction Incident Reporting Policy.
- Medical Records – if an exposure incident were to occur, the Insurance and Safety Departments will coordinate any necessary medical evaluations and treatments and keep these records in a confidential file at the main office.

<u>POST EXPOSURE PROCEDURES</u>

The following procedures must be followed at the time of an exposure incident:

- Call the Insurance Department (or Safety Department if they cannot be reached).
- The Insurance / Safety Representative should suggest (but not demand) that the exposed individual see a physician immediately for blood tests.
- Results of any corresponding blood work will be made available to the exposed employee when they are received.
- The treating physician must provide a written opinion of the evaluation within 15 days, including an opinion on whether HBV vaccination or other treatment is recommended.
    - If a vaccination or other treatment is recommended, the exposed employee will be offered the vaccination / treatment at no cost to himself/herself.

Concrete and Masonry

PURPOSE

The purpose of this policy is to provide guidance to BIG Construction project teams on addressing the hazards associated with concrete and masonry work. This policy takes into consideration the requirements as set forth in 29 CFR 1926.700 and other applicable requirements.

RESPONSIBILITIES

PROJECT TEAM

- Provide BIG Construction employees with concrete and masonry information via site orientation, pre-construction meetings, toolbox talks, etc.
- Direct any concrete or masonry related questions or concerns to the Superintendent.

GENERAL REQUIREMENTS

GENERAL ENVIRONMENT

- Prior to the work, each site shall develop and designate truck routes, storage areas, staging areas, and wash areas as needed.
- A protective system must be in place when concrete or masonry material and/or debris can create a potential struck-by hazard.
    - This can include, but is not limited to, signs and barriers, protective formwork, limited access zones, etc.
- Exposed rebar that creates a potential tripping or impalement hazard must be adequately protected (methods include OSHA compliant caps, bending techniques, and guarded surfaces).
- All concrete, masonry or other silica-generating cutting processes must be done with wet methods. Grinding silica will be conducted as to not expose surrounding employees/public to elevated levels of silica and/or dust.
    - Grinding operations should be reviewed to determine if engineering controls can be employed to control the silica hazard.
    - Operations that have the potential of generating large amounts of dust must be reviewed with the Safety Department prior to the start of that work.
- All associated cutting and grinding equipment must have the corresponding guard properly attached. The equipment shall be secured as necessary at the end of the shift.
- Changes or modifications to anchor bolts and any issues related to concrete strength or performance must be reviewed with the BIG Construction Project Team and structural engineer.

CONCRETE

Employees involved in concrete operations will wear all applicable personal protective equipment associated with their work.

Concrete Burn Prevention

- The most effective way to prevent concrete-related skin issues is to avoid direct skin contact with wet concrete. Concrete burn prevention techniques can also include:
    - Appropriate personal protective equipment such as proper-fitting gloves, long sleeves, long pants and boots.
    - Skin hygiene and work practices to prevent wet concrete from irritating the skin (such as taping transitions between sleeves and gloves or utilizing barrier creams).

- First aid supplies / wash stations to help remove wet concrete.

Cast-in-Place Concrete

- The placement of loads on any concrete structure and removal of forms/shores shall comply with all applicable design parameters and corresponding testing.
- All associated shoring shall have solid sills and provide firm contact with the form/slab and the foundation.
- Vertical slip forms can only be climbed if they have been designed for that purpose.
- Conduit stubs and cut-offs that create a potential tripping hazard will be protected as soon as reasonably possible.
- Holes 2" or greater in diameter in the deck for various building systems must have covers that meet the following requirements:
  - Capable of supporting, without failure, at least twice the intended load of workers, equipment, and materials that may be imposed on the cover at any one time.
  - All covers must be secured.
  - All covers shall be color-coded and/or marked as "HOLE" or "COVER."
- Job-made ladders will be constructed and used to meet applicable ANSI standards (refer to Ladders and Stairways Policy for additional information).
- Bull floats must be of a non-conductive type near electrical sources (e.g. overhead powerlines).
- All concrete related tools should be cleaned after use. This will avoid the need to grind concrete and generate a silica exposure.

Post-Tensioning

- Employees involved in post-tensioning operations must be trained in the hazards and protective measures associated with said operations.
- Signs, barriers and/or spotters shall be used to limit employee access to the area and provide the necessary protection during post-tensioning operations.
- No employees are allowed behind the post-tensioning jack unless they are essential to the operation.

Buckets

- Employees are not permitted to ride concrete buckets.
- Concrete buckets should be routed so as to minimize overhead exposure to employees.
- Concrete buckets should be cleaned and maintained in order to operate efficiently and to avoid risk of injury to individuals operating the bucket.

MASONRY

Limited Access Zone

- Limited Access Zones are required for any unsupported masonry wall prior to the start of that work. The limited access zone must be in place until the wall is supported.
- Limited Access Zones must span the entire length of the wall and have a working length equal to the height of the wall plus 4'. Limited Access Zones will be set up on the side opposite the scaffold system.
- Only authorized employees are permitted in the Limited Access Zones.

Bracing

- Walls that are greater than 8' tall must be braced/supported by a system designed for that applicable wall size, wind load, etc.

Concrete and Masonry

- Braces must remain in place until the permanent support is in place.

Scaffolds

- Scaffolds must be erected, used, and dismantled according to the applicable OSHA standards (CFR 1926.450 – Subpart L). See Scaffold and Aerial Lift Policy for more information.
- Material loads shall not exceed the permissible loads for that scaffold system.

Confined Space Policy

PURPOSE

This policy establishes guidelines to protect BIG Construction employees from the potential hazards associated with confined space entry. This policy has been designed to provide guidance and conform to the applicable OSHA standard 29 CFR 1910.146.

RESPONSIBILITIES

PROJECT TEAM

- Provide BIG Construction employees with confined space information via site orientation, on-site training, toolbox talks, etc.
- Obtain and file all pertinent confined space documentation.
- Direct any confined space related questions or concerns to the Superintendent.

GENERAL REQUIREMENTS

DEFINITIONS

- Confined Space (CS) – see "Workplace Analysis" below
- Permit-Required Confined Space (PRCS) – see "Workplace Analysis" below
    - Non-Permit-Required Confined Space – see "Workplace Analysis" below
- Hazardous Atmosphere – an atmosphere containing one or more of the following:
    - Oxygen deficient or enriched atmospheres
    - Flammable, toxic, corrosive or asphyxiating atmospheres
    - IDLH Atmospheres
    - Exposure to a substance with a Permissible Exposure Limit (PEL) defined by OSHA where the exposure could exceed the dose or PEL
- Immediately Dangerous to Life and Health (IDLH) – any condition that poses an immediate or delayed threat of life, would cause irreversible adverse health effects or would interfere with an individual's ability to escape unaided from a confined space.

WORKPLACE ANALYSIS

- The BIG Construction Project Team will perform workplace analyses as needed to determine if any current or upcoming work fits the criteria of a CS and inform the applicable subcontractor(s). (See Appendix
  1) In order to be considered a "Confined Space," a work area must meet all of the following criteria:
    1. Limited or restricted means of entry or exit
    2. Large enough for an employee to enter and perform assigned work
    3. Not designed for continuous occupancy by the employee
- Employees entering a confined space must complete the JHA report to ensure that all hazards are recognized and addressed by the parties involved.
- If the confined space contains one or more of the following hazards, the work area in question will be treated as a "Permit-Required Confined Space" (PRCS):
    1. Contains or has the potential to contain a hazardous atmosphere
    2. Contains a material that has the potential to engulf an entrant
    3. Has an internal configuration that may cause the entrant to be trapped or asphyxiated
    4. Contains any other recognized, serious safety or health hazards

  NOTE: An area cannot be a PRCS unless it first meets the criteria of a CS.

- Employees entering a PRCS must follow the procedures set forth in the "Permit-Required Confined Spaces" section below.
- If there is sampling data/analysis that proves all existing and potential hazards have been eliminated from a PRCS, that area becomes a Non-Permit-Required Confined Space:
    - Documentation of this sampling data/analysis must be made available to the applicable employees
    - Any hazard(s) that arises during a non-permit entry terminates the entry and the space becomes a PRCS until the hazard(s) are eliminated
- The area may also be considered a Non-permit
- Required Confined Space if all hazards have been eliminated and not merely controlled.

PRCS – STANDARD OPERATING PROCEDURES

Subcontractor Entry Responsibilities

- Entry Supervisor
    - Entry Supervisors are responsible for the overall PRCS entry and must coordinate all entry procedures, tests, permits, equipment, etc.
    - Know the applicable hazards and controls
    - Conduct a pre-entry briefing at the beginning of each shift and/or upon the introduction of new workers to the space
    - Ensure that permits are complete and removed when work is finished
    - Ensure that personnel are evacuated when necessary
    - Ensure that all necessary equipment is returned to its proper location
- Entry Attendants
    - At least one attendant is required outside the PRCS into which entry is authorized for the entire duration of the entry operation. Responsibilities include:
    - Ensure the safety and well-being of the entrants and those working in proximity to the PRCS
    - Attend the pre-entry briefing
    - Know the applicable hazards and controls
    - Control access to the space
    - Maintain communication with entrants
    - Order a space evacuation when conditions warrant
    - Maintain an accurate count of the number of entrants
    - Perform non-entry rescue (when the situation applies) or summon emergency services
    - Assist rescue efforts outside the space
- Entrants
    - All entrants must be authorized by the Entry Supervisor to enter the applicable PRCS
    - Attend the pre-entry briefing
    - Know the applicable hazards and controls
    - Use equipment properly
    - Exit the space if an alarm is activated, communication is lost, unknown exposures are encountered or if ordered to do so by an Entry Supervisor, Attendant and/or Supervisor.

Subcontractor Pre-Entry Briefing

- The Entry Supervisor will review the following with all employees involved in the entrance of a PRCS:
    - Hazards and controls for the specific space
    - Entry and permit procedures
        - Acceptable entry conditions
        - Means of entry

Concrete and Masonry Policy

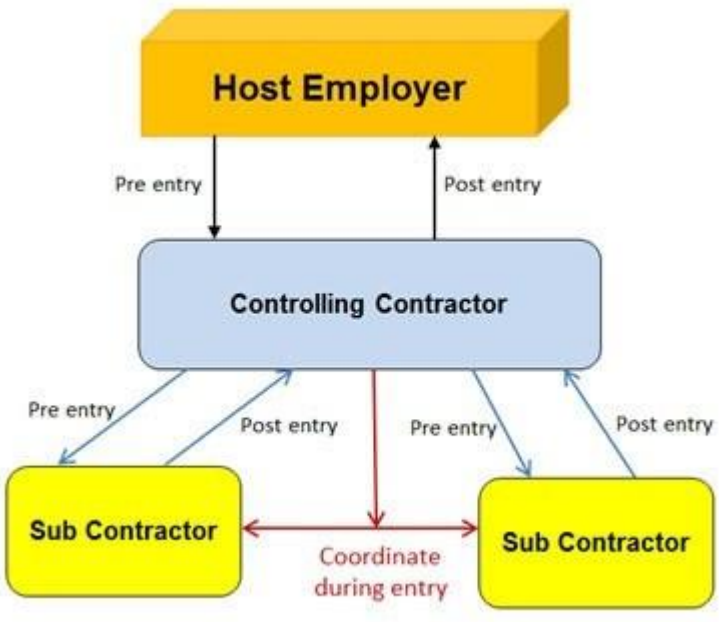
- Proper use of any equipment involved (e.g. entry, rescue, etc.)
- Communication methods
- Emergency and rescue procedures
- Completion of work/Closing out

Completion of Work

- Upon completion of work, members of the entry group will:
  1. Exit and remove equipment
  2. Remove temporary isolation devices
  3. Remove temporary warning signs and barriers
  4. When applicable, replace any permanent barriers (e.g. cover plates)
  5. Notify the BIG Construction Project Team of work completion

Additional Provisions

- Constant communication will be maintained between the Attendant and the Entrants while in a confined space
  - Communication methods must be intrinsically safe to prevent electrical explosion
- All openings to confined spaces will be protected by the applicable barricades, signs, etc. to prevent unintended entry
- When applicable, atmospheric testing will be performed before the entry of employees
- Adequate (non-explosive) lighting will be provided at the entry and in the PRCS



Appendix 1

Crane Policy

PURPOSE

The purpose of this policy is to provide guidance and procedures to address the precautions necessary when performing any work involving cranes. This policy has been designed to provide information and conform to the applicable OSHA standards, including 29 CFR 1926 Subpart N and Subpart CC. This policy defines BIG Construction's procedures when performing work related to erecting, jumping and dismantling tower cranes, including the involvement of assist cranes; the use of mobile cranes, utilizing helicopters for hoisting and BIG Construction's Critical Lift Procedures. This policy does not replace or intend to accept the responsibilities of other entities involved with cranes and other hoisting equipment.

RESPONSIBILITIES

PROJECT TEAM

The Project Team in this policy may include the following: BIG Construction Project Team, Crane Supplier, Manufacturer, Engineer of Record, Project Owner, Subcontractor, Erection/Dismantling contractor, Inspectors, Operator and Oiler and any Authority Having Jurisdiction (AHJ). The Project Team will ensure the following are complete as it relates to this procedure.

- Participate in a pre-construction meeting to discuss the necessary precautions to be followed during the erection, use, jumping and dismantling process for cranes.
- Ensure that lifts are planned accordingly. Subcontractor should provide a lift plan.
- Subcontractor to provide crane safety checklist prior to lift.
- Direct any crane-related questions or concerns to the applicable party.

CRANE LESSEE/USER

- Provide required documentation required by BIG Construction and other entities
- Inspect and accept ground conditions
- Ensure all required safety devices are installed and functioning
- Plan lifts
- Comply with all applicable standards and requirements, including crane set-up, use, inspection and maintenance

SAFETY DEPARTMENT

- Provide BIG Construction projects with the guidance necessary to comply with these parameters and those set forth in OSHA standard 29 CFR 1926 Subpart N and Subpart CC.
- Assist in the resolution of any crane-related questions or concerns that may arise on BIG Construction jobsites.
- Review this policy for effectiveness and relevant updates.

GENERAL REQUIREMENTS

- Before any crane is put in use, the responsible party must provide a current annual inspection of the crane conducted by an independent third party. If a current inspection is not available or the inspection is out of date, that crane shall not be used until a current inspection is conducted.
- The operator and/or crane lessee is responsible to complete (including documentation) all required inspections of the crane. The crane lessee must notify BIG Construction, in writing, of any conditions that would require action from BIG Construction.
- Crane usage should be coordinated with the Project Team prior to the crane arriving on site. Regardless of the lift, BIG Construction supervision must always be notified in advance when a crane will be used.
- Depending on the situation, personnel may be required to participate in Pre-Lift and/or Pre-construction meetings at which time full cooperation is expected. The applicable personnel must be prepared to discuss lifting procedures, crane details, capacities, rigging, load weights configuration, etc.
- Prior to using a crane on site, the Mobile Crane Checklist will be completed by a competent person from the subcontractor utilizing the crane. A copy of this completed document will be kept on file at the project.
- The operator must be trained and certified in accordance with applicable standard or ordinance. A copy of the operator's certification should be submitted to BIG Construction prior to operating the crane.

CRANE SET-UP

- Outriggers must be fully extended; unless the crane is designed to operate with outriggers in another position [See manufacturer's load charts]. Cranes may only be used in accordance with manufacturer requirements.
- The party in charge of the crane shall ensure that the capacity, ground conditions, and all other conditions are acceptable. If the conditions do not meet the applicable requirements, the contractor shall notify BIG Construction supervision in writing their proposal to implement any corrections or modifications necessary. Ground conditions must be adequate, based on the crane with the appropriate cribbing being utilized.
- The location on which the crane will be set up must be evaluated. The responsible party shall survey the area for underground pits, tanks, vaults, basements, sewer lines, overhead powerlines and any other underground and overhead obstacles, and plan accordingly.
- The swing radius and pinch points created by the crane and counterweight shall be protected. Only those individuals germane to the crane operation should be inside the protected swing radius path.
- If utilizing a crane in the street, in a high traffic area, in a pedestrian walkway or other high-risk area, a plan must be developed prior to the lift by the responsible party to address the risk control procedures. A meeting should be conducted prior to hoisting activities to develop the lift plan and it should be communicated to all applicable parties; contact the Project Safety Supervisor to schedule the meeting and review proposed plans.

CRANE SIGNALING METHODS

- Only one person is to signal the crane at a time. When hand signals are used, signals should be in accordance with the standard method (Appendix A). A copy of the crane signals must be posted at the project.

- Hard line communication, hand signals, or two-way radio communication are preferred methods. This issue should be discussed during the pre-lift/pre-construction meeting. Cell phones are not permitted as the method of communication.
- The operator and individuals responsible for signaling the crane must be trained on the agreed upon signal method. Signals should be reviewed prior to start of the operation by the individuals involved.
- Signals are to be given from the operator's vantage point.

CRANE USE

- Cranes must be used in accordance with all manufacturer requirements and applicable standards. It is the crane lessee's responsibility to procure and make available these requirements including, but not limited to, load charts, operator's manuals, referenced standards (i.e. ASME/ANSI standards) and local ordinances.
- When overhead utilities are present, sufficient clearance distances must be maintained in accordance with OSHA Subpart CC.

Voltage	Minimum Clearance
0-50 kV	10 ft.
Over 50-200 kV	15 ft.
200-350 kV	20 ft.
350-500 kV	25 ft.
500-750 kV	35 ft.
750-1000 kV	45 ft.

- Refer to Utility Locate and Overhead Powerlines Policy to determine applicable controls. Other overhead obstructions should be identified as necessary.
- Spotters will be used in accordance with ASME B30.5 (Appendix B) and Subpart CC.
- No additions or modifications can be made to the crane which affects its capacity or safe operation.
- The crane's capacity, based on load chart, cannot be exceeded. If the crane is not rated to hoist the load, the operation will stop until a plan can be developed that will allow the load to be safely hoisted. Under no circumstances can the crane be utilized beyond its capacity.
- The crane operator must notify his/her supervisor if there is a concern with the load being hoisted, crane conditions, ground conditions, weather conditions or any other potential issues. The crane lessee must work to resolve these issues and use the crane in accordance with the applicable requirements.
- Cell phone use is prohibited by the operator while the crane is in operation.
- At a minimum, a workplan from the subcontractor and meeting shall be completed and submitted any time:
  - 2 cranes are used to make a lift,
  - When a lift exceeds 75% of the load chart (at the specific boom angle and radius),
  - High risk activities (i.e. hoisting over occupied space).

  Additional information may be required based on the lift and the associated risk.
- Taglines (non-conductive) shall be used to control loads, unless the use of the tagline would pose a greater hazard.
- Riding loads, the headache ball or any other part of the hoisting mechanism is prohibited.

- The manufacturer's requirements shall take precedence as it relates to the safe operation of the crane including, but not limited to, weather and use, transiting, set-up, permitted use, etc.
- Each crane will be equipped with a minimum of one 10BC fire extinguisher.
- Suspended loads must not be left unattended. Hoisting and swing patterns must be planned to avoid exposing individuals to the hazards of suspended loads.
- Suspended personnel platforms may only be used when all other methods have been proven infeasible. The contractor utilizing said equipment is solely responsible for proving the infeasibility and for compliance with all applicable requirements.

TOWER CRANE CONSIDERATIONS

- Tower cranes will be erected, dismantled, jumped and used in accordance with all manufacturer's guidelines, as well as applicable engineering data and industry standards.
- A tower crane checklist will be provided by the subcontractor prior to erecting, jumping, or dismantling. This process must be initiated in advance in order to complete all tasks associated with the checklist.
- Pictures of existing conditions have been taken and verification of required elements completed.
- Hard line communication will be used during normal operation of a tower crane.

FAA OBSTRUCTION EVALUATION

When to file with the FAA

- Important Note: BIG Construction typically should NOT file for the building structure. This should be completed by the owner or design team. BIG Construction's FAA filings should deal with cranes only. Contact your Safety Manager for assistance as needed.
- The FAA requires notification for any of the following circumstances:
    - Any construction or alteration exceeding 200 feet above ground level (including cranes);
    - Any construction or alteration:
        - Within 20,000 ft of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with its longest runway more than 3,200 ft;
        - Within 10,000 ft of a public use or military airport which exceeds a 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 ft;
        - Within 5,000 ft of a public use heliport which exceeds a 25:1 surface.
    - When requested by the FAA; and/or
    - Any construction or alteration on an airport, regardless of height.
- Consult the Obstruction Evaluation / Airport Airspace Analysis (OE/AAA) website for additional information:
    - https://oeaaa.faa.gov/oeaaa/external/portal.jsp

Procedures for determining notice to file

- Consult the FAA Notice Criterion Tool:
    - https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp?action=showNoNoticeRequiredToolForm

- Provide the Latitude and Longitude of the corner of the project that is closest to the airport.
  - Google Earth can assist with determining coordinates (use the IT Tool Shed or contact the IT Helpdesk for assistance).

- If the Notice Criterion Tool provides a determination of not exceeding notice to file:
  - Print the results page and file with the project permits.
- If the Notice Criterion Tool provides a determination of exceeding notice to file, there are three options:
  - Utilize FAA consultants
    - Federal Airways & Airspace, Inc. 321-777-1266, airspace@airspaceuse.com
    - Important Note: This process can become quite involved and time-consuming. Project teams should strongly consider budgeting for this option.
  - Contact the Chicago Department of Aviation (DOA)
    - adam.rod@cityofchicago.org, 773-894-6907
    - Be prepared to provide the DOA with a pdf that includes:
      - Overhead view of the project with the four corners of the building / crane locations (can be obtained via Google Maps/Earth);
        - Latitude & longitude for each corner;
        - Site elevation;
        - Crane elevation;
        - Project crane start and end dates (approximate);
        - Project work hours.
      - The DOA will inform you if they can file the FAA Form 7460 with the information provided.
  - Create an online account and self-file FAA Form 7460:
    - Consult the OE/AAA New User Registration Page:
      - https://oeaaa.faa.gov/oeaaa/external/userMgmt/permissionAction.jsp?action=showRegistrationForm
    - Submit four locations:
      - One for each corner of the project / crane locations
  - The FAA will generate Aeronautical Study Numbers for each location submitted; log these for your records as they will be used to determine filing status.
  - Important Note: FAA Hazard Determinations can take up to 3 months, so it is extremely important to start this process as soon as possible.
    - The FAA will provide contact emails for each Aeronautical Study Number.

FAA Determination Letters

- Determination of No Hazard
  - This letter essentially provides permission to erect the crane(s) as noted in the letter.
  - Be prepared to follow all instructions provided in the letter, which can include specific notification procedures, crane lighting, etc.

- Determination of Hazard
    - This letter explains that the current crane(s) configuration is in conflict with the FAA.
    - Follow the instructions on the letter to resolve the dispute:
        - This may involve an alteration to the crane heights and/or locations;
        - Coordinate with the applicable subcontractors and be prepared to re-file.

    - Additional information regarding FAA airspace requirements can be found at the following link: http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=c89d37f1615e1cea0e51b80139740992&rgn=div5&view=text&node=14:2.0.1.2.9&idno=14

Notification of Project Completion

- Once the project is completed (i.e. a crane will no longer be necessary to complete the work), notify the FAA by following the instructions on the Determination Letter.

NOTAMs

- Based on hazard determinations, the FAA issues Notices to Airmen (NOTAMs) regarding potential obstructions such as cranes. To determine if the NOTAM dates match the dates in the FAA Determination Letters, use the Pilot Web link:
    - https://pilotweb.nas.faa.gov/PilotWeb/
    - NOTAMs and dates can be searched by reference number or Latitude and Longitude.
    - If the NOTAM dates do not match the FAA Determination Letter dates, contact the FAA resource identified on the FAA determination letters as soon as possible.

AIRCRAFT (HELICOPTER) PICKS

- Prior to any aircraft pick on a project, the Aircraft Pick Insurance Requirements form (Appendix C) must be completed by the applicable subcontractors and submitted to the Insurance Director and applicable BIG Construction Project Team Member(s).
    - The requirements include the aircraft company's certificate of insurance and a copy of the subcontract agreement with the aircraft company.
    - Direct any aircraft insurance questions to the Insurance Director.
- A Critical Lift Planning Worksheet is to be used to plan any aircraft picks.

APPENDICES & REFERENCES

- Appendix A – Crane Signals
- Appendix B – Overhead Powerlines and Spotter

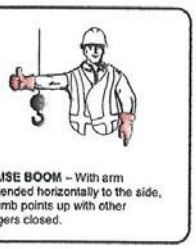
STOP – With arm extended horizontally to the side, palm down, arm is swung back and forth.

EMERGENCY STOP – With both arms extended horizontally to the side, palms down, arms are swung back and forth.

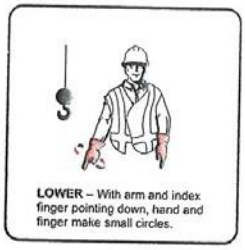
RAISE THE BOOM AND LOWER THE LOAD – With arm extended horizontally to the side and thumb pointing up, fingers open and close while load movement is desired.

DOG EVERYTHING – Hands held together at waist level.

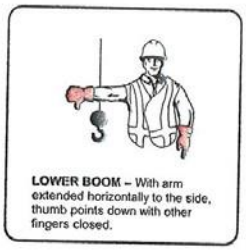
HOIST – With upper arm extended to the side, forearm and index finger pointing straight up, hand and finger make small circles.



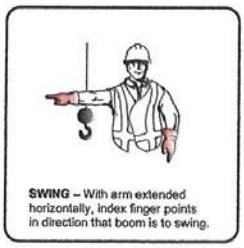
RAISE BOOM – With arm extended horizontally to the side, thumb points up with other fingers closed.



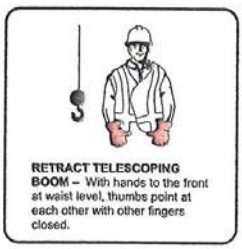
LOWER – With arm and index finger pointing down, hand and finger make small circles.



LOWER BOOM – With arm extended horizontally to the side, thumb points down with other fingers closed.

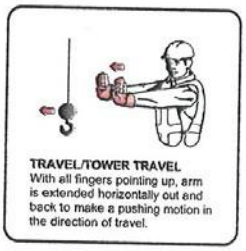


SWING – With arm extended horizontally, index finger points in direction that boom is to swing.

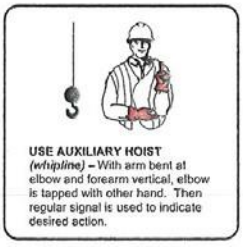


RETRACT TELESCOPING BOOM – With hands to the front at waist level, thumbs point at each other with other fingers closed.

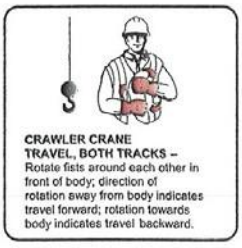
EXTEND TELESCOPING BOOM – With hands to the front at waist level, thumbs point outward with other fingers closed.



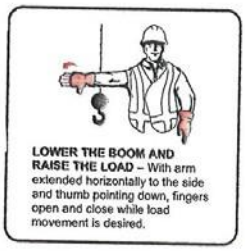
TRAVEL/TOWER TRAVEL With all fingers pointing up, arm is extended horizontally out and back to make a pushing motion in the direction of travel.



USE AUXILIARY HOIST *(whipline)* – With arm bent at elbow and forearm vertical, elbow is tapped with other hand. Then regular signal is used to indicate desired action.



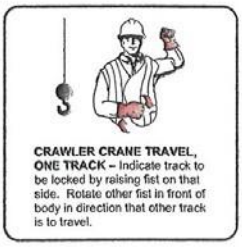
CRAWLER CRANE TRAVEL, BOTH TRACKS – Rotate fists around each other in front of body; direction of rotation away from body indicates travel forward; rotation towards body indicates travel backward.



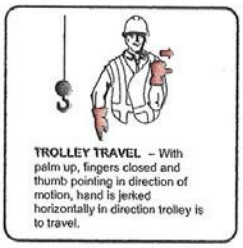
LOWER THE BOOM AND RAISE THE LOAD – With arm extended horizontally to the side and thumb pointing down, fingers open and close while load movement is desired.

MOVE SLOWLY – A hand is placed in front of the hand that is giving the action signal.

USE MAIN HOIST – A hand taps on top of the head. Then regular signal is given to indicate desired action.



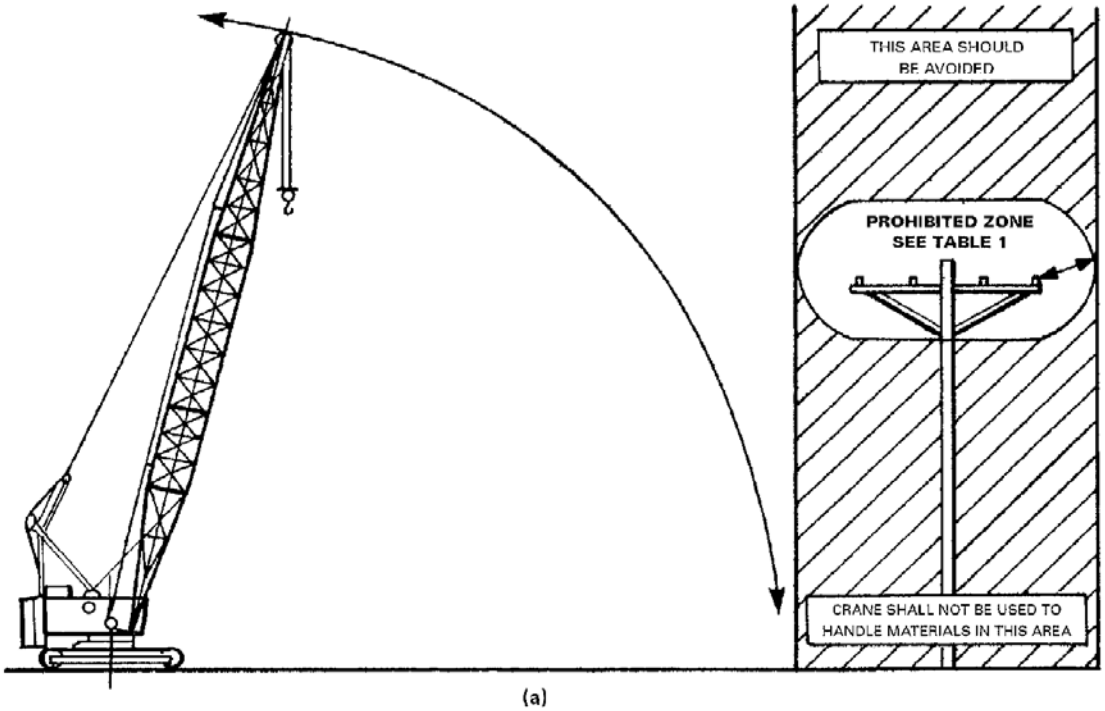
CRAWLER CRANE TRAVEL, ONE TRACK – Indicate track to be locked by raising fist on that side. Rotate other fist in front of body in direction that other track is to travel.



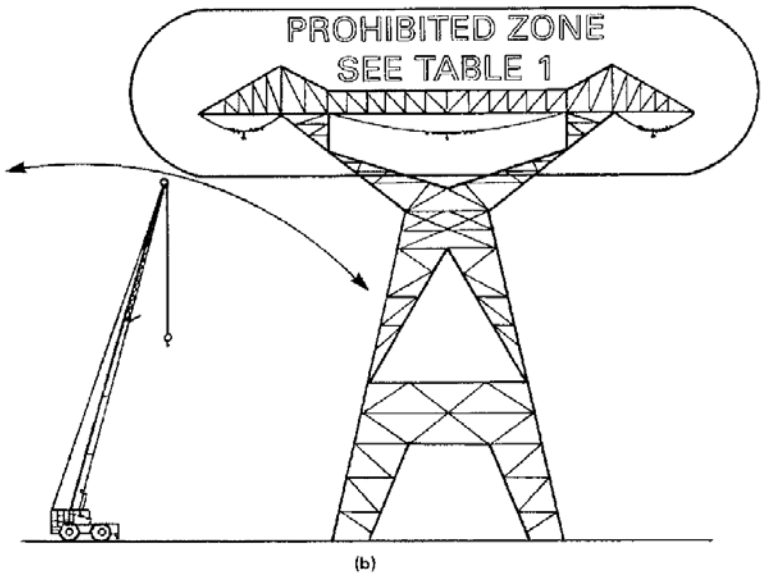
TROLLEY TRAVEL – With palm up, fingers closed and thumb pointing in direction of motion, hand is jerked horizontally in direction trolley is to travel.

APPENDIX B: Overhead Powerlines and Spotter Use

Fig. 18 Danger Zone for Cranes and Lifted Loads Operating Near Electrical Transmission Lines



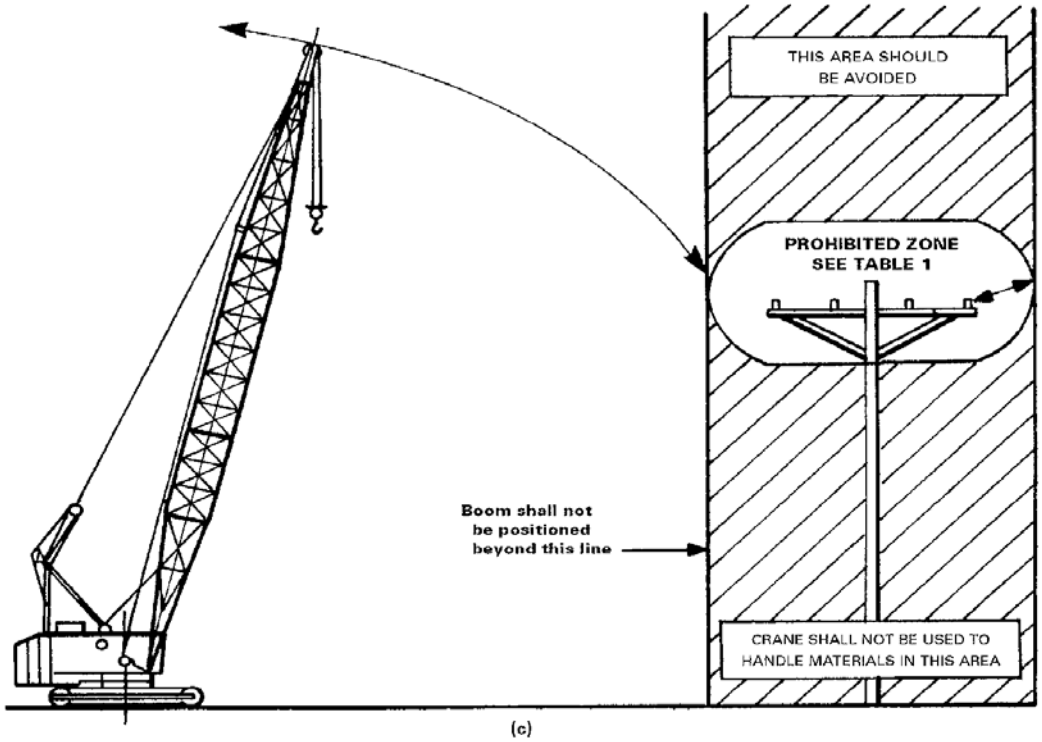
(a)



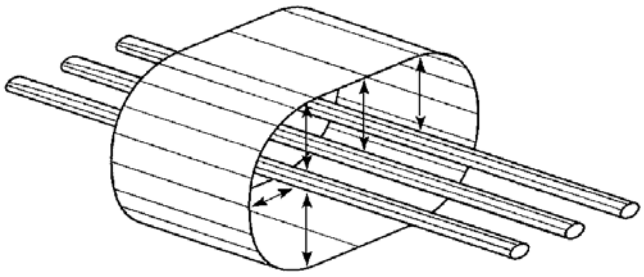
(b)

APPENDIX B: Overhead Powerlines and Spotter Use

Fig. 18 Danger Zone for Cranes and Lifted Loads Operating Near Electrical Transmission Lines (Cont'd)



(c)



(d)

GENERAL NOTE: See Table 1 for minimum radial distance of prohibited zone.

Crisis Management Policy

PURPOSE

BIG Construction believes that each jobsite must prepare for emergencies and crises to protect its employees, visitors, contractors, community, pedestrians, environment and facilities. The words crisis and emergency will be used interchangeably.

An emergency is an urgent state of events that requires sudden attention and relief. A crisis is a condition of instability or danger that can lead to a decisive (usually negative) change. Examples of an emergency or crisis can include fire, building collapse, terrorist threats, workplace fatality, etc. (these will be addressed individually in the Procedures section). The purpose of this plan is to provide guidance on handling a crisis and minimizing the impact of any BIG Construction -related emergency and/or crisis.

RESPONSIBILITIES

PROJECT TEAM

- Contact your Superintendent as well as your direct report as necessary to assist in emergency management.

GENERAL REQUIREMENTS

PROCEDURES

NOTE: Directives from local authorities will overrule the following procedures. Any crisis/emergency must be reported to the Insurance Department as soon as reasonably possible.

Overview

- First Aid Emergency
- Major Injuries/Fatalities
- Infection Response
- Fire
- Explosion
- Flood/Extensive Leak
- Chemical Spill/Toxic Fumes
- Severe Weather
- Earthquake
- Tornado
- Labor Strikes/Disputes
- Armed Intruder
- Gang-Related Activity
- Bomb Threat
- Terrorist Threat
- Disruption Avoidance
- Utility Strike
- Overhead Powerlines Contact
- Computer Failure

Crisis Management Policy

First Aid Emergency

1. When a first aid emergency is observed, the observer should notify the Site-Specific Emergency Coordinator immediately so that the proper actions may be taken.
2. If the injury is serious, call 911 immediately.
3. First Aid trained employees may respond to the situation voluntarily.
    - Do NOT move the person unless instructed by emergency responders to do so.
    - Instruct someone to greet the emergency personnel at the entrance to show them where to go.
4. A First Aid Kit must be available at the jobsite.
5. Report the incident to the Insurance Department as soon as reasonably possible.

Major Injuries/Fatalities

1. In the event that a major injury or fatality is observed, survey your surroundings to determine if it is safe to approach the person(s) in question, and if there is the need for an evacuation.
2. Check the person involved to determine their status.
3. Call 911 immediately to report the incident, or assign a nearby person to do so.
4. Provide care if trained in First Aid/CPR and only if it is safe to do so in the given surroundings.
5. Inform the Superintendent as well as your direct report and Project Manager.
6. Secure the scene to ensure that no one else can become injured.
7. Call the Superintendent to report the incident.
8. Assign an employee to guard the site entrance/gate to only allow authorized, emergency vehicles. Members of the media are not allowed on site without the express consent of CEO, Tony Iannessa.
9. Complete an incident/Accident Report within 24 hours
    - Fatalities must be reported to OSHA within 8-hours of the occurrence.
    - If the accident/Incident involves a BIG Construction Employee

Infection Response

1. If there is a perceived infection or blood-borne pathogen situation at hand, such as the discharge of hospital waste or a perceived potential for pathogen transmission among employees, approach the situation as follows:
2. Universal Precaution Method – all construction employees, at all times, will treat blood and any other body fluids as if they are known to be infectious, regardless of the source. In instances where it is difficult to determine the source of fluid – assume it to be infectious. Secure the area so that no one else comes near it and report the issue to your supervisor immediately.
3. Any bodily contact with blood or bodily fluids will require the exposed construction employee(s) to wash immediately with a germicidal soap and water (if available). Contact with mucous membranes (such as the eyes) will require flushing with water immediately for no less than 30 seconds.
4. Refer to the Bloodborne Pathogens Policy. (Section 1)

Crisis Management Policy

Fire

1. When an uncontrolled fire is observed, the observer should immediately shout "FIRE" to notify employees in the immediate vicinity. Only trained employees may voluntarily attempt to extinguish the fire at the incipient (early, small) stage with fire extinguishers located throughout the facilities.
2. For any fires that are in more than the incipient stage, 911 should be contacted immediately and the building should be evacuated at once through the nearest *safe exit*.
    - A safe exit is any exit that is unobstructed by the hazard(s) at hand.
3. The observer should make every reasonable effort to notify the Superintendent and direct report.
4. The Superintendent shall call 911 and give the following information:
    - "This is *your name* with BIG Construction at *address*. We have a fire and need assistance. Send the equipment and personnel to the facility and enter through *best access point*. I can be reached at: *your cell phone number*. Our meeting point is *here*."

Personnel will only be permitted back into the area once the Fire Dept. deems it is safe to re-enter.

Explosion

1. Internal Explosion
    - Employees should follow the same evacuation procedures as in the case of a Fire.
2. External Explosion
    - Superintendent will contact local emergency officials for instruction.
    - If instructed to stay inside, employees will gather in the BIG Construction site office/trailer or area designated by local emergency officials.
3. Report the incident to the Superintendent and Project Manager as soon as reasonably possible.

Flood/Extensive Leaks

1. If possible, determine the source of the flood/leak and eliminate said source (e.g. shutoff valves).
2. If eliminating the flood or leak is not a possibility, contain the damage as much as possible.
    - E.g. water pumps, gondolas, etc.
    - Remove all materials that could be damaged by the water.
3. Report the incident to the Superintendent for assistance in remediation.

Chemical Spill or Toxic Fumes

1. On-site Spill
    - Refer to the corresponding SDS to determine the proper dike and disposal procedures.
    - If there is no SDS, you can call Chemtrec (800-424-9300) – a 24-hour hazardous materials communications center.
    - In the event of unsafe exposure (i.e. excessive contact, inhalation or swallowing), contact the Poison Control Center (800-222-1222).
    - If the SDS sheet requires an evacuation in the event of a spill, employees should follow the same evacuation procedures as in the case of a Fire. Notify all adjacent homes, schools, businesses, etc. of the incident.
    - Report the incident to the Insurance Department as soon as reasonably possible.
2. External Spill
    - The Superintendent will contact local emergency officials for instruction.
    - Employees will gather at the assigned meeting point.
    - The Superintendent will take a headcount.
    - HVAC systems should be shut down and all vents in the meeting point should be covered.

- Evacuation areas should always be to the upwind side of the spill.
- Report the incident to the Superintendent and Project Manager as soon as reasonably possible.

Severe Weather Emergency

3. If any BIG Construction employee becomes aware of a severe weather condition, he or she must notify the Superintendent immediately.
4. If a state of emergency is declared by state or local officials, the Superintendent should follow the directions given by the authorities.
5. More information can be obtained through: National Weather Service – IL Branch
   333 W. University Drive
   Romeoville, IL 60446
   815-834-0675
   815-834-1435 from 8am-8pm

Earthquake

1. In the event of an earthquake, all employees will get under cover
   - e.g. under desks, doorways, tables
   - stay away from windows and overhead objects such as lighting
2. The Superintendent will contact the local authorities to determine the proper course of action.
3. Complete an accident/incident report as soon as reasonably possible.

Tornado

1. In the event of a tornado, employees will proceed to the lowest possible level.
   Employees will seek shelter in a basement or interior hallway
2. Employees will crouch down facing the walls and cover their heads with their hands.
3. Evacuate only if and when instructed to do so.
4. Complete an accident/incident as soon as reasonably possible.

Labor Strikes/Disputes

1. Call your Superintendent
2. Report any related incidents/ accidents per BIG Construction protocol as soon as reasonably possible.

Armed Intruder

1. All employees are to evacuate immediately towards the nearest exit that is away from the intruder. Call 911 immediately.
2. If the intruder(s) is blocking means of escape, employees should hide in an area with:
   - no interior windows
   - door locks
   - concealment areas (e.g. under a desk)
3. Complete an accident/incident report as soon as reasonably possible.

Gang-Related Activity

1. Gang-related violence that is perceived as life-threatening to any person on the jobsite should be reported to the police immediately (DIAL 911).
   - Report the incident to the Superintendent as soon as reasonably possible.
2. Any signs of gang-related activity among employees should be reported to Human Resources immediately.

3. Gang-related activity that is not immediately threatening (such as graffiti) should be reported to the local police via a non-emergency number. The incident should then be documented by completing an accident/incident report.

Bomb Threat

1. If a bomb threat is received by phone, the following steps are to be taken. Note the following information carefully:
    - Exact time of call.
    - Background noise such as vehicles, bar room sounds, etc.
    - Voice characteristics, male, female, accent, etc.
2. Without overtly interrupting, attempt to gain the following information from the caller:
    - When will the bomb go off?
    - Where is it located?
    - What kind of bomb is it?
    - How large is it?
    - How can we identify it?
    - What kind of container is it enclosed in?
3. After receiving the call, immediately notify the Superintendent and contact 911.
    - Employees should follow the same evacuation procedures as in the case of a Fire unless instructed otherwise by the Emergency Coordinator and/or local authorities (e.g. if an evacuation were to trigger a detonation).
4. Employees will NOT touch or inspect suspicious objects.

Terrorist Threat

1. Any terrorist threat via phone, mail, email, etc. should be treated seriously. In the event of a terrorist threat, the Superintendent will dial 911 immediately to report the threat.
    - Provide the local authorities with as many details as possible regarding the threat (e.g. when it was received, details of the threat, etc.)
2. Depending on the nature of the threat, refer to the applicable Procedure (e.g. Chemical Spill, Bomb Threat, etc.).
3. Complete an accident/incident report as soon as reasonably possible.

Disruption Avoidance

1. The following is a list of "typical" operations with disruption potential:

Systems:

Domestic Hot Water	Computers	Ventilation
Domestic Cold Water	Telephones	Temperature Controls
Waste/Vent	Paging/Intercoms	Steam/Heat Piping
Medical Gas	Security	Chilled Water
Elevators	Facility Codes (e.g. Code Blue)	Power
Corridors	Smoke and Heat Alarms	Sprinklers
Partitions (Smoke/Fire)	Lighting	

Energy Sources:

Electrical	Chemical
Mechanical	Thermal
Hydraulic	Gravitational/Magnetic
Pneumatic	

2. Prior to any work that could adversely affect the above-referenced systems/energy sources with disruption potential, the applicable facilities managers (e.g. Facilities Director, Engineering, etc.) must be made aware of the situation and provide interim measures (if applicable).
3. In the event of a disruption incident, immediately STOP the work and secure the scene.
    a. For utility strikes, refer to your Utility Locate Policy and see Utility Strike below.
    b. For interior systems/energy sources:
        i. Contact the applicable facilities manager and enact the interim measures.
        ii. Do not make repairs unless authorized by the utility owner. Keep unauthorized personnel away from the area.
        iii. Contact the Superintendent as soon as possible.

Utility Strike

1. When a utility is contacted, immediately STOP the work and contact JULIE/Digger and the corresponding utility owner. Do not attempt to repair the utility until authorized by the utility owner. Keep unauthorized personnel away from the area.
2. If a gas line is contacted, call 911 and notify surrounding pedestrians (schools, businesses, etc.) of the hazard.
3. Shut down all equipment and evacuate the area.
4. The Superintendent will document all details of the incident (i.e. which party is responsible, when was the line severed, when was it repaired).
5. Complete an accident/incident report as soon as reasonably possible.

Overhead Powerlines Contact

1. If mobile equipment ever comes into contact with an energized line, the operator should usually not move: Notify the proper authorities immediately so that they may initiate a safe shutdown of the equipment.
    - If, however, that piece of equipment is on fire or in imminent danger, the operator should perform a controlled jump far from the crane so that no part of his or her body is touching the crane as his or her feet land on the ground. The operator should then shuffle his or her feet slowly away from the mobile equipment and power line until at least 100 feet away.
2. If an energized line is ever downed, do not rush into the area as there may be a voltage gradient capable of administering a lethal shock. Notify the proper authorities immediately so that they may initiate a safe shutdown of the equipment. If you are near the downed line, do not touch anything! To evacuate the area, shuffle your feet slowly away from the downed line until you are at least 100 feet away.
3. Report the incident to the Insurance Department as soon as reasonably possible.

Computer Failure - (Contact IT Department)

Demolition Policy

PURPOSE

This policy will define the procedures and precautions necessary when performing demolition work. This policy has been designed to provide information and conform to the applicable OSHA standard 29 CFR 1926.650 (Subpart T – Demolition).

RESPONSIBILITIES

PROJECT TEAM

- Provide BIG Construction employees with demolition information via site orientation, pre- construction meetings, etc.
- Coordinate with all applicable parties to ensure site conditions are in suitable condition to begin the demolition process.
- Conduct investigative work to identify potential risks associated with the demolition work.
- Request information related to the demolition project from the appropriate parties, including Phase I and II assessments, asbestos surveys, abatement reports, environmental studies, engineering surveys [from subcontractor for total building demolition – see attached sample], etc.
- Communicate the appropriate information to affected parties during the bidding, pre-construction and construction phases.

GENERAL REQUIREMENTS

Before the demolition process can begin, regardless if it is selective or total building demolition, sufficient exploratory work has to be performed as each project has unique situations that warrant different preventative measures. Contact the Project Safety Supervisor, demolition subcontractor(s) and other affected parties (as required) before the project start to set up a demolition review.

BIG Construction does not perform asbestos abatement; this work is conducted under the direction of the owner of the facility. Abatement contractors do not work for BIG Construction; abatement contracts will be directly with the facility owners. BIG Construction does not contract directly for any asbestos abatement work, nor direct or oversee those operations.

Review the Utility Locate and Overhead Powerlines Policy prior to any excavation and/or slab demolition.

INTERIOR / SELECTIVE DEMOLITION

- Prior to demolition in areas with a potential exposure to Bloodborne Pathogens, a Certificate of Clean is to be provided by the owner.
- Coordinate for the following operations (as applicable):
    - Documenting existing conditions;
    - Engineering calculations and support / protection methods (e.g. shores);
    - Demolition procedures (e.g. no blind cuts into walls with reciprocating saws);
    - Water management;
    - Temporary weather protection;
    - Interim life safety measures;
    - Dust and infection control;

- Separation (e.g. temporary walls and signage);
- Surrounding operations and facility restrictions (e.g. noise, times, etc.);
- Debris removal;
- Ceiling / overhead demolition;
- Hot Work;
- Maintaining fire ratings;
- Utilities
    - Identify shut off valve locations. [water, sprinklers, gas, oxygen, etc.]
    - Can the valves be reached? How will they be reached during an emergency?
    - Does a ladder have to be at each location?
    - If a system does not have a shut/isolation valve, investigate the possibility of installing one for the project.
    - Mark up a drawing and identify where the valve locations are and place it next to the doors leaving the space.
    - Sprinkler systems – can the systems be turned off or do they have to stay live? If the sprinkler system cannot be shut down or disconnected, develop a procedure for protecting the sprinkler system.
        - Cages over sprinkler heads, caution tape on heads to make visible, install sleeves over heads, etc.
    - Routinely revisit the location of the valves with the all personnel involved in order to increase response time in case of an emergency.
- All floor penetrations have to be sealed down to the floor with non-water soluble chalk by the end of the shift.

- Refer to the Personal Protective Equipment Policy section of this manual for protecting employees involved in demolition activities.

BUILDING DEMOLITION

- An engineering survey shall be completed by the responsible party prior to the start of demolition. A copy of the survey should be given to BIG Construction. The demolition methods, shoring requirements and demolition procedure should be outlined by the demolition contractor based on the engineering survey.
- Environmental hazards must be addressed prior to the start of demolition activities.
- Utilities shall be cut and capped, or otherwise guarded before activities start. Contact appropriate utility owners and personnel to coordinate.
- Entrances to a multistory structure shall be protected by a suitable canopy-type structure. Prior to the start of work, determine if there are specific requirements for the township in which the work is being performed.
- Chutes, slides, etc. shall be used in disposing of material. Prior to the start of work, develop procedures to safely operate and maintain (especially unclogging) chutes. Refer to BIG Construction's Rigging and Material Handling section of this manual for more information.
- The area at the base of the chute and/or the area around the dumpster into which the chutes are emptying, are to be barricaded. Depending on the location of the exit point of the chute, different control measures may be implemented (e.g. fence and signage).
- Structures (or portions of), shall not be left in an unstable condition before break or at the end of the day. Any standing portions of a wall or structure that are structurally unstable shall be demolished or supported.

Electrical Safety Policy

PURPOSE

This policy applies to electrical systems used on BIG Construction projects, including, but not limited to, electrical cords, temporary power, permanent power, overhead and underground electrical utilities and work on energized equipment. This policy has been designed to provide guidance and conform to the applicable OSHA standard 29 CFR 1926.400 (Subpart K – Electrical).

RESPONSIBILITIES

PROJECT TEAM

- Provide BIG Construction employees with electrical information via site orientation, pre-construction meetings, etc.
- Direct BIG Construction project-specific electrical related questions or concerns to the applicable party and BIG Construction Safety Department.

GENERAL REQUIREMENTS

CORDS (TOOLS AND EXTENSION)

- All applicable equipment (i.e. tools and wiring) must be insulated, mechanically strong and durable.
- Cords must be marked for "Hard" or "Extra Hard" usage (usually represented by any of these symbols: SJ, SJO, SJT, S, SO, ST and STO) and provide double insulation.
- Flexible cords can be used for pendant/fixture wiring, portable lamps/tools/appliances and stationary equipment that facilitate an interchange.
- Flexible cords will be suspended according to the proper attachment points and methods.
- Flexible cords cannot be used in place of fixed wiring (do not run flexible cord through walls, ceilings, floors or conduit).
- Inspect all cords and tools before working with them to ensure there are no cracks, frays, etc.
- Cords with a detached/damaged ground prong must be removed from service immediately.
- Cords that have been tapped or spliced must be removed from service.
- Cords that have been damaged must be repaired to their original condition by a qualified person or, labeled as out of service.
- Protect flexible cords from damage at pinch points (such as doorways).

TEMPORARY POWER AND LIGHTING

- Installation of temporary electric power and lighting must comply with 29 CFR 1926.400.

Guarding

- Open conductors/fixed wires must be protected in conduit or equivalent when within 8' of a walking surface (this can include a locked, secluded room, OSHA compliant panels and elevating the conductors at least 8' above the walking surface).
- Junction boxes and breakers with live wires must remain covered by an OSHA compliant cover or panel.
- Any unused knockouts in a live electrical box must be covered by an OSHA compliant cover.
- The walking path to a live circuit breaker must always remain unimpeded by equipment, storage materials, etc.

Ground Fault Circuit Interrupters (GFCI)

- Temporary power must be protected by GFCI. Protection methods include GFCI-equipped generators, GFCI breakers/panel mounts, GFCI outlets and/or in-line GFCI cord sets.
- GFCI protectors will be tested periodically by the responsible party and a record of the tests kept. The responsible party will maintain the record of the tests and provide to the BIG Construction Project Team upon request.

Temporary Lighting

- Temporary lighting will be provided in accordance with OSHA and contract requirements. Any additional lighting required will be provided by each responsible party.
- Illumination lights must be protected by OSHA compliant cases.
- Temporary lighting will be suspended according to the proper attachment points and methods. Metallic materials should not be used as suspension or attachment points.
- Temporary lighting cables must be covered or elevated above the work area.
- Wire for lighting within stairwells will be protected by conduit or wiring design. Unprotected open conductors are not permitted.

PERMANENT POWER

- A GFCI must be used when using permanent power (see "Ground Fault Circuit Interrupters" above for further information).
- On a permanent outlet, a cover plate must be attached in order for the outlet to be utilized. Plugging into an outlet that does not have a cover plate is not permitted.
- All live circuit panels must have an OSHA compliant panel cover on them.
- Never leave an unattended live panel open; it must be protected.
- The walking path to a live circuit breaker must always remain unimpeded by equipment, storage materials, etc.

WORK PERFORMED IN PROXIMITY TO OVERHEAD UTILITIES

Any work that is to be performed near overhead utilities must adhere to the BIG Construction Utility Locate and Overhead Powerlines Policy, including, but not limited to, a preliminary meeting and required clearances. Refer to the procedure in its entirety before performing this scope of work.

- If mobile equipment ever comes into contact with an energized line, the operator should usually not move: Notify the proper authorities immediately so that they may initiate a safe shutdown of the equipment. If, however, that piece of equipment is on fire or in imminent danger, the operator should perform a controlled jump far from the equipment so that no part of his or her body is touching the equipment as his or her feet land on the ground. The operator should then shuffle his or her feet slowly away from the equipment and power line.

- If an energized line is ever downed, do not rush into the area as there may be a voltage gradient capable of administering a lethal shock. Notify the proper authorities immediately so that they may initiate a safe shutdown of the equipment. If you are near the downed line, do not touch anything! To evacuate the area, shuffle your feet slowly away from the downed line to safety.

WORK PERFORMED IN PROXIMITY TO UNDERGROUND ELECTRICAL EQUIPMENT

Projects involving underground electrical systems are subject to the BIG Construction Utility Locate and Overhead Powerlines Policy, which includes, but is not limited to, a preliminary walkthrough, secondary locates, emergency plans, etc. Please refer to the policy in its entirety before performing this scope of work.

WORKING ON ENERGIZED EQUIPMENT

- This procedure applies to any machine or equipment that can create a harmful release of energy during service or maintenance work. This procedure must be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any service or maintenance work.
- The following are generalized steps for the lockout/tagout procedure:
    1. Notify all affected workers that service or maintenance is required on specific machine/equipment and that the machine/equipment must be shut down and locked to perform this work
    2. If the machine/equipment is operating, shut it down using the appropriate button, switch, valve, etc.
    3. De-activate the energy-isolating device (e.g. unplug it, set the circuit breaker to "Off") to ensure that the machine/equipment is isolated from an energy source.
    4. Verify that the machine/equipment is off and has no stored energy (e.g. try to activate one of the controls and immediately return the switch/valve/button to the "Off" or "Neutral" position).
    5. If possible, lock the device or corresponding circuit breaker and place a notification tag on it. If locking the device is not a possibility, use a tag and at least one other safety measure, such as blocking the control switch, opening an extra disconnecting device, full-time spotter, etc. Contact GCS and/or the Safety Department for notification tags.

- Once the service or maintenance is complete and the machine/equipment is ready for use, the following steps will formally remove the lockout/tagout status:
    1. Check the area to ensure that all items and personnel have been safely moved from the affected area.
    2. Verify that all controls are in the "Off" or "Neutral" position.
    3. Remove the lockout/tagout devices and re-energize the equipment as needed.

- Lockout/tag-out devices must be removed only by the affected employee (i.e. the one performing the service or maintenance work). However, if that employee is not available and the machine or equipment must be activated, the following procedure must be used:
    1. A supervisor must verify that the affected employee has left the jobsite.
    2. Contact your Superintendent to describe the situation.
    3. The lockout/tagout device must be removed by the supervisor only.
    4. All reasonable efforts must be made to contact the affected employee and inform him or her that the lockout/tagout device has been removed. These efforts must be documented.
    5. The supervisor must ensure that the affected employee is aware of the lockout/tagout removal before he or she resumes work.

- To prevent accidental release of energy during maintenance, troubleshooting, etc. of tools/equipment that cannot be locked or tagged out, de-energizing principles should also be applied. Examples include, but are not limited to:
    1. Unplugging and testing a corded saw before changing the blade to prevent accidental activation.
    2. Turning off a piece of equipment and removing the keys prior to troubleshooting to prevent concurrent use.

BIG CONSTRUCTION CONTACTS:

SUPERINTENDENT	[NUMBER]
PROJECT MANAGER	[NUMBER]
ASSISTANT PROJECT MANAGER	[NUMBER]
PROJECT ENGINEER	[NUMBER]

EMERGENCY RESPONSE:

AFTER-HOURS EMERGENCY NUMBER –VITO/VP	586.201.9733
SUPERINTENDENT	
PROJECT MANAGER	
ASSISTANT PROJECT MANAGER	

OWNER CONTACTS:

[FIRST CONTACT POSITION] [NAME]	[NUMBER]
[SECOND CONTACT POSITION] [NAME]	[NUMBER]
[THIRD CONTACT POSITION] [NAME]	[NUMBER]

WEATHER / HAZARDOUS MATERIAL EMERGENCIES:

NATIONAL WEATHER SERVICE	815-834-0675, OR 815-834-1435 [8AM – 8PM]
POISON CONTROL CENTER	800-222-1222
CHEMTREC (MATERIAL COMMUNICATIONS)	800-424-9300

MUNICIPAL CONTACTS:

EMERGENCY	**911**
FIRE/POLICE [NON-EMERGENCY]	
STATE "THIS IS A CONSTRUCTION SITE" FOR ELEVATED RESPONSE	

UTILITY LOCATE CONTACTS:

NATIONAL LOCATING SERVICE	811
J.U.L.I.E.	800-892-0123
DIGGER	312-744-7000

SERVICE / UTILITY:	PHONE NUMBER:	SHUTOFF LOCATIONS / INSTRUCTIONS:
GAS PEOPLES: NICOR:	 866-566-6002 888-NICOR-4U	
ELECTRIC COMED	 800-EDISON-1	
PHONE		
CABLE		
FIBER		
WATER WATER MANAGEMENT		
WASTE DEPARTMENT OF BUILDINGS		
OTHER [NAME]	[NUMBER]	

When a utility is contacted, immediately STOP the work and contact JULIE/Digger and the utility owner. Do not attempt to repair the utility until authorized by the utility owner. Keep unauthorized personnel away from the area. If a gas or power line is contacted, call 911 and notify surrounding pedestrians (schools, businesses, etc.) of the hazard.

IN THE EVENT OF AN EMERGENCY:

1. Secure the scene and provide first aid and/or necessary attention to gain control.
2. Call your SUPERINTENDENT
3. Utilize the checklist below to respond accordingly (not all items may apply to the emergency at hand):

MAJOR INJURIES /FATALITIES

1. In the event that a major injury or fatality is observed, survey your surroundings to determine if it is safe to approach the person(s) in question, and if there is the need for an evacuation.
2. Check the person involved to determine their status.
3. Call 911 immediately to report the incident, or assign a nearby person to do so.
4. Secure the scene to ensure that no one else can become injured.
5. Provide care if trained in First Aid/CPR and only if it is safe to do so in the given surroundings.
6. Inform your Superintendent of the details.
7. Assign an employee to guard the site entrance/gate to only allow authorized, emergency vehicles. Members of the media are not allowed on site.
8. Work with the Superintendent to complete an incident investigation and provide necessary information to report any fatalities to OSHA.

EVACUATIONS

1) Once the Superintendent has signaled for an evacuation, all employees are to evacuate the building/project through the nearest, unobstructed exit as quickly and calmly as possible.
2) Under no circumstances is anyone allowed to stay in or re-enter the building/project once an evacuation emergency has been identified. Only after the Emergency Medical/Fire Responders have issued an "all-clear" are employees allowed back on the site.
3) The Superintendent is responsible for determining that all BIG Construction Employees are out of the building.
4) Subcontractors are responsible for headcounts of their own employees as well as reporting missing employees to authorities.

Environmental Health and Industrial Hygiene Policy

PURPOSE

The purpose of this policy is to provide guidance to project teams when dealing with environmental health & industrial hygiene concerns on a project. This policy does not cover all potential exposures possible. Always contact a member of the Safety Department when unknown hazardous chemicals, gases, or materials are identified or suspected on a jobsite.

RESPONSIBILITIES

PROJECT TEAM

- Thoroughly review all pre-construction site surveys to determine if there are any underground hazards that could potentially be contacted during excavation work.
- Review all owner provided information regarding materials scheduled for demolition inside of existing buildings.
    - Where necessary, conduct walkthrough to visually verify that the areas scheduled for demolition are free of hazardous materials.
- Review all chemicals to be used on site to understand if any special considerations need to be made for handling, and/or cleanup.
- Understand what to do in the event that hazardous materials, chemicals, or gases are discovered or released on site.

GENERAL REQUIREMENTS

DEMOLITION

- Prior to any demolition work beginning, a thorough building survey should be conducted, to ensure that the space is free of any hazardous chemicals or materials (refer to the Demolition Policy).
- If hazardous chemicals or materials are identified, or suspected, immediately contact the BIG Construction Safety Department to determine a course of action.
- Stay out of restricted areas set forth by remediation contractors for materials such as mold, lead, and asbestos.
    - Do not allow work to resume in those areas until a certified report has been received from the owner stating that the materials have been removed.
- Use wet methods whenever demolishing concrete structures to minimize silica exposure.
    - If wet methods are not feasible, or high levels of silica are suspected, contact the BIG Construction Safety Department for silica sampling to be conducted.

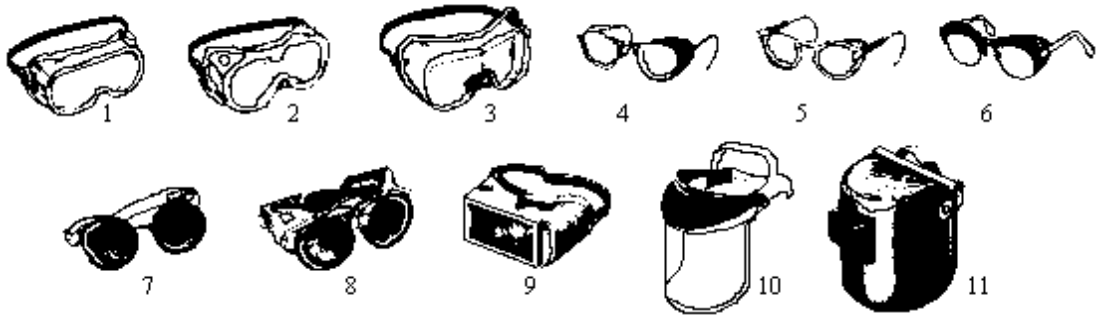
UNDERGROUND

- No excavation work can begin on a new site until a survey has been conducted by the owner to determine what, if any hazards are contained in the soil.
- If hazardous chemicals or materials are identified in the soil, remediation must be completed by the owner before work can begin.
    - Proof of remediation must be submitted to BIG Construction and reviewed by the Safety Department.

- If hazardous chemicals or materials are discovered in the soil during the course of excavation work, immediately contact the BIG Construction Safety Department to determine a course of action.
- Ensure adequate ventilation is provided for any underground work, especially when done in enclosed spaces of existing buildings.
- If there is a concern regarding potential exposure to, or release of hazardous chemicals as a result of underground construction, contact the BIG Construction Safety Department.
- Refer to the Trenching and Excavation Policy procedures and Utility Locate Policy for additional information.

Appendix A: Eye and Face Protector Selection Guide Table

E-1



1. GOGGLES, Flexible Fitting - Regular Ventilation
2. GOGGLES, Flexible Fitting - Hooded Ventilation
3. GOGGLES, Cushioned Fitting - Rigid Body
4. SPECTACLES, Metal Frame, with Sideshields (1)
5. SPECTACLES, Plastic Frame - with Sideshields (1)
6. SPECTACLES, Metal-Plastic Frame - with Sideshields (1)
7. WELDING GOGGLES, Eyecup Type - Tinted Lenses (2)

7A. CHIPPING GOGGLES, Eyecup Type - Clear Safety Lenses

8. WELDING GOGGLES, Coversepc Type - Tinted Lenses (2)

8A. CHIPPING GOGGLES, Coverspec Type - Clear Safety Lenses

9. WELDING GOGGLES, Coverspec Type - Tinted Plate Lens (2)
10. FACE SHIELD (Available with Plastic or Mesh Window)
11. WELDING HELMETS (2)

Operation	Hazards	Recommended Protectors
Acetylene – burning, cutting,	Sparks, harmful rays, molten metal, flying	7, 8, 9
Chemical handling	Splash, acid burns, fumes	2, 10 (Severe exposure: add 10 over 2)
Chipping	Flying particles	1, 3, 4, 5, 6, 7A, 8A
Electric (arc) welding	Sparks, intense rays, molten metal	9, 11 (11 in combination with 4, 5, 6 in tinted lenses advisable)
Furnace operations	Glare, heat, molten metal	7, 8, 9 (Severe exposure: add 10)
Grinding (light)	Flying particles	1, 3, 4, 5, 6, 10
Grinding (heavy)	Flying particles	1, 3, 7A, 8A (Severe exposure: add 10)
Laboratory	Chemical splash, glass breakage	2, (10 if combined with 4, 5, 6)
Machining	Flying particles	1, 3, 4, 5, 6, 10
Molten metals	Heat, glare, sparks, splash	7, 8 (10 if combined with 4, 5, 6 in tinted
Spot welding	Flying particles, sparks	1, 3, 4, 5, 6, 10

Fire Protection and Prevention Policy

Appendix B – Filter Lens Shade Numbers, Protection Against Radiant Energy Table E-2

Welding Operation	Shade Number
Shielded metal-arc welding 1/16" to 5/32" electrode diameter	10
Gas-shielded arc welding (non-ferrous) 1/16" to 5/32" electrode diameter	11
Gas-shielded arc welding (ferrous) 1/16" to 5/32" electrode diameter	12
Shielded metal-arc welding 3/16" to 1/4" electrode diameter	12
5/16" to 3/8" diameter electrodes	14
Atomic hydrogen welding	10-14
Carbon-arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1"	3 or 4
Medium cutting, 1" to 6"	4 or 5
Heavy cutting, over 6"	5 or 6
Gas welding (light), up to 1/8"	4 or 5
Gas welding (medium), 1/8" to 1/2"	5 or 6
Gas welding (heavy), over 1/2"	6 or 8

Fire Protection and Prevention Policy

PURPOSE

This section will define the necessary precautions and/or procedures to maintain adequate fire protection and to minimize the possibility of fire. The following also applies to welding, heating and cutting work operations performed on BIG Construction projects. This policy has been designed to provide safety guidance and conform to the applicable OSHA standards: 29 CFR 1926.150 (Subpart F – Fire Protection and Prevention), 29 CFR 1926.350 (Subpart J – Welding and Cutting), 29 CFR 1926.95 (Subpart E – Personal Protective and Life Saving Equipment) and BIG Construction policies.

RESPONSIBILITIES

Project Team

- Provide BIG Construction employees pre-construction meetings, to maintain adequate fire protection and prevention measures.
- Direct any fire protection and prevention related questions or concerns to your BIG Construction Superintendent.

REQUIREMENTS

Overview

- Definitions;
- General Requirements;
- Fire Prevention;
- Hot Work;
- Welding and Cutting;
    - General Considerations;
    - Compressed Gas Cylinders; o Gas Welding and Cutting; o Arc Welding and Cutting;
    - Personal Protective Equipment.

Definitions

- Approved - means equipment that has been listed or approved and labeled by a nationally recognized testing laboratory.
- Closed Container - means a container so sealed by means of a lid or other device that neither liquid nor vapor will escape from it at ordinary temperatures.
- Combustible Liquid - means any liquid having a flash point at or above 140º F. and below 200º F.
- Flammable Liquid - means any liquid having a flash point below 140º F. and having a vapor pressure not exceeding 40 psi at 100ºF.
- Safety Can - means approved closed container, of not more than 5 gallons capacity, having a flash-arresting screen, spring closing lid and spout cover, and so designed that it will safely relieve internal pressure when subjected to fire exposure.

Fire Protection and Prevention Policy

General Requirements

- Adequate access to all available firefighting equipment shall be maintained at all times.
- All firefighting equipment shall be conspicuously located.
- All firefighting equipment shall be periodically inspected and maintained in operating condition. Defective equipment shall be immediately replaced.
- As warranted by the project or task, BIG Construction may require a trained and equipped firefighting organization (Fire Brigade) or Fire Watch to assure adequate protection of life.
- During demolition or alteration, existing automatic sprinkler installations shall be retained in service as long as possible. The operation of sprinkler control valves shall be permitted only by authorized persons (identified during the planning stages). Modification of sprinkler systems to permit alterations or additional demolition should be expedited so that the protection system may be returned to service as quickly as possible. Sprinkler control valves shall be checked at the end of shift to ensure that the system is in service.
- In occupied spaces, BIG Construction will post a drawing identifying the location of sprinkler shut off valves (as applicable). This drawing should be posted near points of egress, when possible.
- Prior to the shutdown of any sprinkler or life safety systems, the applicable contractor or employee will notify BIG Construction Field Superintendent of the event so that the proper facilities representatives can be notified.
- When applicable, all affected sprinkler heads will be identified and protected prior to any demolition, Hot Work or other type of work which could adversely affect the system.
- Prior to any demolition, Hot Work or other type of work which could adversely affect life safety systems such as smoke or heat detectors, the applicable life safety systems shall be adequately covered and/or shut down (when applicable) to prevent damage or unwanted activation.
- Construction related penetrations should be water tight and fire-safe as required at the end of each shift.
- A fire extinguisher, rated at least 2A, shall be provided for each 3,000 square feet of the protected building area during the construction phase and the travel distance from any point of the protected area to the nearest fire extinguisher shall not exceed 100 feet.
- A minimum of 2 fire extinguishers will be maintained on each floor during the construction phase, located near the means of egress.
- Fire extinguishers must be inspected on an annual basis by an approved outside agency. Fire extinguishers should be checked on a monthly basis by each applicable contractor.
- Daily and continual clean-up is required in all work areas. Each contractor is responsible for keeping the site neat and clean. If clean-up is not managed, applicable provisions of the contract can and will be enforced.

Fire Prevention Policy

- In structures requiring standpipes or where standpipes exist in structures being altered, the standpipes shall be installed as soon as possible (in accordance with applicable requirements). These standpipes shall be maintained as construction progresses and be ready for use.
    - In the City of Chicago, current municipal requirements state that the standpipe must be functioning 2 floors above floors with combustibles (e.g. finishes installed such as cabinets).
- Portable fire extinguishing equipment, suitable for the fire hazard involved, shall be provided at convenient, conspicuously accessible locations in exterior storage yard areas.
- Material storage shall not obstruct, or adversely impact, means of exit or means of access to fire extinguishing equipment.
- A clearance of 30 inches will be maintained around the path of travel of fire doors and emergency exits. Material will not be stored within 36 inches of a fire door opening.

- Only approved containers may be used for storage and handling of flammable and combustible liquids.
- Flammable or combustible liquids will not be stored in areas used for exits, stairways, or normally used for the safe passage of people.
- Leakage or spillage of flammable or combustible liquids shall be disposed of promptly and safely.
- Flammable liquids may be used only where there are no open flames or other sources of ignition within 50 feet of the operation, unless conditions warrant greater clearance.

Welding and Cutting

General Considerations

- All welding and burning work shall be done in accordance with OSHA standards and industry best practices. The movement, storage and use of cylinders shall be done in accordance with OSHA standards.
- All personnel using welding and burning equipment will be fully trained in the use and maintenance of the equipment, including proper storage, transport, use and maintenance.

Ventilation

- General mechanical or natural ventilation shall be of sufficient capacity and so arranged as to produce the number of air changes necessary to maintain fumes and smoke within safe limits (i.e. OSHA standard 29 CFR Subpart D – Occupational Health and Environmental Controls). Ventilation requirements that result from any party's work are the responsibility of said party.
    - Welding, cutting or heating of any of the following "Metals of Toxic Significance" shall conform to OSHA standard 29 CFR Subpart D and E requirements:
        - Zinc-bearing materials and/or coatings;
        - Lead base metals;
        - Cadmium-bearing filler materials;
        - Chromium-bearing metals and/or coatings;
        - Mercury-bearing metals;
        - Beryllium-containing base or filler metals.
    - Other employees exposed to the same atmosphere as the welders or burners shall also be protected.
- Welding and cutting gas shall not be used for ventilation purposes, comfort cooling, blowing dust from clothing or for cleaning the work area.

Confined Spaces

- Ensuring that the affected employees receive adequate ventilation and training is the responsibility of the applicable welding/cutting party.
- Compressed gas cylinders shall not be taken into confined spaces.

Preservative Coatings

- Determination of the flammability of a preservative coating is the responsibility of the applicable party. Protection, removal, etc. are also the responsibility of the applicable party.
- Precautions shall be taken to prevent ignition of highly flammable hardened preservation coatings. When coatings are determined to be highly flammable, they shall be stripped from the area to be heated prior to the work.

Hot Work

- Welding and cutting operations must abide by the "Hot Work" procedures referenced above.

COMPRESSED GAS CYLINDERS

Transporting or Moving

- Valve protection caps shall be in place and secured when feasible. Valve protection caps shall not be used for lifting cylinders from one vertical position to another.
- Cylinder valves should be closed when work is finished, when cylinders are empty or when cylinders are moved.
- Cylinders shall not be hoisted by means of magnets or choker slings.
- Cylinders should be moved horizontally by means of controlled tilting and rolling. Cylinders shall not be intentionally dropped, struck or permitted to strike each other violently.
- Cylinders are to be secured vertically when transported by powered vehicles.
- Unless firmly secured on a carrier intended for this purpose, regulators shall be removed, and valve protection caps put in place before cylinders are moved.
- Cylinders need to be steadied properly (e.g. cart and chain) when in use to prevent the cylinders from being knocked over.
- Compressed gas cylinders shall be secured in an upright position at all times, except while being hoisted or carried.

Storage

- Inside of buildings, cylinders shall be stored in a well-protected, well-ventilated, dry location, at least 20 feet from highly combustible materials such as oil (when feasible).
- Cylinders should be stored away from elevators, stairs or gangways.
- Assigned storage places should be located where cylinders will not be knocked over or damaged by adjacent traffic/operations.
- Oxygen cylinders in storage shall be separated from fuel-gas cylinders (e.g. acetylene) or combustible materials a minimum distance of 20' or by a noncombustible barrier at least 5 feet high having a fire- resistance rating of at least one-half hour.

Placing Cylinders

- Cylinders shall be kept far enough away from the actual welding/cutting operation so that sparks/slag/flames do not reach the cylinders.
    - When this is impractical, fire resistant shields shall be used by the applicable personnel.
- Cylinders shall be placed where they cannot become part of an electric circuit. Electrodes shall not be struck against a cylinder to strike an arc.
- Fuel gas cylinders shall be placed with the valve end up whenever they are in use.

Treatment

- All cylinders used must meet the applicable requirements (e.g. Department of Transportation standard 49 CFR Part 178).
- Cylinders shall not be used as rollers or supports.
- No person, other than the gas supplier, shall attempt to mix gases in a cylinder.
- Damaged or defective cylinders shall not be used.
    - Damaged or defective cylinders should be reported to BIG Construction supervision and removed from the project by the applicable party as soon as reasonably possible

GAS WELDING AND CUTTING

Use of Fuel Gas

- Each party is responsible for providing the necessary equipment and training to facilitate safe gas welding and cutting, as it relates to their operations and employees.
- Before a regulator or cylinder valve is connected, the valve shall be opened slightly and closed immediately.
- Cylinder valves shall be opened slowly to prevent damage to equipment (e.g. regulators).
- Cylinder valves shall be opened to promote quick closing in the event of emergency (e.g. wrenches will remain on opened valve stems).
- In the event of leaks, the applicable valve shall be closed. If this does not stop the leak, the cylinder should be reported to BIG Construction supervision and removed from the project by the applicable personnel as soon as reasonably possible.

Fuel Gas and Oxygen Manifolds

- Manifolds shall bear the name of the substance they contain.
- Manifolds shall be placed in safe, well-ventilated and accessible locations.
- Manifolds and adapters shall not be used so as to permit the interchange of oxygen and fuel gas.
- When not in use, manifold and header hose connections shall be capped.

Hose

- All hose shall be inspected before each working shift in which the equipment will be used. Defective hose must be removed from service immediately by the applicable personnel.
- Fuel gas hose and oxygen hose shall be easily distinguishable from each other. Fuel gas and oxygen hoses shall not be interchangeable.
- Hoses, cables, etc. shall be kept clear of passageways, ladders and stairs, when feasible.

Torches

- Torches shall be inspected at the beginning of each working shift in which the equipment will be used.
- Torches shall be lighted by manufacturer-approved devices.

Regulators and Gauges

- Each applicable party is responsible for ensuring that all regulators and gauges are in proper working order during their use.

ARC WELDING AND CUTTING

- Each applicable party is responsible for ensuring that manual electrode holders and connections are capable of handling the maximum rated current required by the electrodes at hand.
- Any portion of the holder which the arc welder grips in their hand must be fully insulated against the maximum voltage encountered to ground.

Welding Cables and Connections

- Only cable free from repair or splices for a minimum distance of 10 feet from the cable end to which the electrode is connected shall be used, except that cables with standard insulated connectors or with splices whose insulating quality is equal to that of the cable are permitted.
    - When connecting cables or splice lengths, substantial insulated connectors of a capacity at least equivalent to that of the cable shall be used.
- Cables in need of repair shall not be used.

Grounding

- Ensuring safe grounding capacity is the responsibility of the applicable personnel, including the necessary inspections.
    - The generation of arc, sparks or heat at any point shall cause rejection of the chosen structure as a ground circuit.
- Pipelines containing gases or flammable liquids, or conduits with electrical circuits, shall not be used as a ground return.

Operations

- Each party is responsible for providing the necessary equipment and training to facilitate safe gas welding and cutting, as it relates to their operations and personnel.
- Electrodes that are left unattended must be protected so as to prevent electrical contact with other employees or conducting objects. The arc's power supply shall also be turned off prior to leaving the area unattended.
- Inspections and any resulting, perceived defects are the responsibility of the applicable party and should be repaired or removed as soon as possible.
- Whenever possible, all arc welding and cutting operations shall be shielded by noncombustible/flameproof screens designed to protect employees and other persons working in the vicinity from the direct rays of the arc.

Inert-Gas Metal-Arc Welding

- Prior to any inert-gas, metal-arc welding, the applicable party is responsible for the following:
    - Chlorinated solvents shall be kept at least 200 feet and/or shielded from the exposed arc.
    - Surfaces prepared with chlorinated solvents shall be thoroughly dried before welding.
    - Welders and other exposed employees shall be suitably protected so that their skin is covered completely to prevent damage by ultraviolet rays.

PERSONAL PROTECTIVE EQUIPMENT

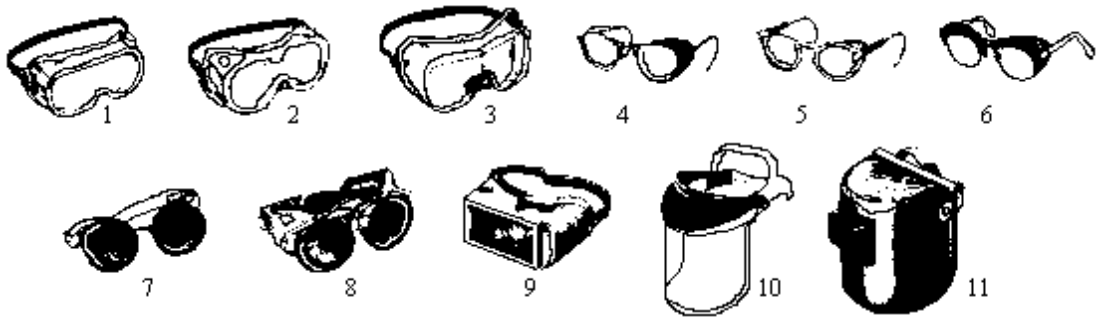
- OSHA Standard 29 CFR Subpart E Tables E-1 and E-2 and industry best practices shall be used as a guide in the selection of face and eye protection for the hazards and operations noted (see Appendices A and B).
    - Shades denser than those listed may be used to suit the individual's needs.
- When limitations or precautions are indicated by the manufacturer, it is the responsibility of the applicable employee to adhere to the applicable limitations or precautions.

APPENDICES AND REFERENCES

Appendix A – Eye and Face Protection Selection Guide
Appendix B – Filter Lens Shade Numbers – Protection against Radiant Energy

Appendix A: Eye and Face Protector Selection Guide

Table E-1



1. GOGGLES, Flexible Fitting - Regular Ventilation
2. GOGGLES, Flexible Fitting - Hooded Ventilation
3. GOGGLES, Cushioned Fitting - Rigid Body
4. SPECTACLES, Metal Frame, with Sideshields (1)
5. SPECTACLES, Plastic Frame - with Sideshields (1)
6. SPECTACLES, Metal-Plastic Frame - with Sideshields (1)
7. WELDING GOGGLES, Eyecup Type - Tinted Lenses (2)

7A. CHIPPING GOGGLES, Eyecup Type - Clear Safety Lenses

8. WELDING GOGGLES, Coversepc Type - Tinted Lenses (2)

8A. CHIPPING GOGGLES, Coverspec Type - Clear Safety Lenses

9. WELDING GOGGLES, Coverspec Type - Tinted Plate Lens (2)
10. FACE SHIELD (Available with Plastic or Mesh Window)
11. WELDING HELMETS (2)

Operation	Hazards	Recommended Protectors
Acetylene – burning, cutting,	Sparks, harmful rays, molten metal, flying	7, 8, 9
Chemical handling	Splash, acid burns, fumes	2, 10 (Severe exposure: add 10 over 2)
Chipping	Flying particles	1, 3, 4, 5, 6, 7A, 8A
Electric (arc) welding	Sparks, intense rays, molten metal	9, 11 (11 in combination with 4, 5, 6 in tinted lenses advisable)
Furnace operations	Glare, heat, molten metal	7, 8, 9 (Severe exposure: add 10)
Grinding (light)	Flying particles	1, 3, 4, 5, 6, 10
Grinding (heavy)	Flying particles	1, 3, 7A, 8A (Severe exposure: add 10)
Laboratory	Chemical splash, glass breakage	2, (10 if combined with 4, 5, 6)
Machining	Flying particles	1, 3, 4, 5, 6, 10
Molten metals	Heat, glare, sparks, splash	7, 8 (10 if combined with 4, 5, 6 in tinted
Spot welding	Flying particles, sparks	1, 3, 4, 5, 6, 10

Appendix B – Filter Lens Shade Numbers, Protection Against Radiant Energy

Table E-2

Welding Operation	Shade Number
Shielded metal-arc welding 1/16" to 5/32" electrode diameter	10
Gas-shielded arc welding (non-ferrous) 1/16" to 5/32" electrode diameter	11
Gas-shielded arc welding (ferrous) 1/16" to 5/32" electrode diameter	12
Shielded metal-arc welding 3/16" to 1/4" electrode diameter	12
5/16" to 3/8" diameter electrodes	14
Atomic hydrogen welding	10-14
Carbon-arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1"	3 or 4
Medium cutting, 1" to 6"	4 or 5
Heavy cutting, over 6"	5 or 6
Gas welding (light), up to 1/8"	4 or 5
Gas welding (medium), 1/8" to 1/2"	5 or 6
Gas welding (heavy), over 1/2"	6 or 8

Hand and Power Tools Policy

PURPOSE

This policy will define the procedures and precautions necessary when working with hand and power tools. This policy is designed to provide information and conform to the applicable OSHA standard 29 CFR Subpart I.

RESPONSIBILITIES

PROJECT TEAM

- Provide BIG Construction employees with information on tool safety via site orientation, toolbox talks, training sessions, etc.
- Direct tool safety related questions or concerns to the applicable party and BIG Construction Superintendent.

GENERAL REQUIREMENTS

Employees are responsible for:

- Inspecting the tool before each use,
- When applicable, following the tool manufacturer's instruction manual,
- If found to not to be in correct working condition or requiring maintenance (sharpening, etc.) the employee shall immediately stop using the tool and notify their supervisor,
- Using the tool in the correct manner and what it is intended for, wearing the correct and required personal protective equipment and notifying a supervisor when they are unfamiliar with a piece of equipment, or do not know how to safely operate it.

There must be a suitable storage area for tools on the project. Gang boxes, a conex box, or locked secured area shall be identified. At the end of shift, tools shall be returned to this location and locked up.

Only tools in safe working condition are to be used. Any damaged or worn tools should be promptly repaired or replaced. Power tools having damaged electrical cords or plugs shall be immediately removed from service and reported to a supervisor. Only employees authorized to repair tools may do so.

HAND TOOLS

- Only tools in safe working condition are to be used. Any damaged or worn tools should be promptly repaired or replaced. Temporary or makeshift repairs are prohibited.
- The correct tool for the job is to be used. Substituting pliers for a hammer, screwdriver for a pry bar, is not allowed.
- Tools are to be kept in good condition with guards and handles firmly intact. Cutting tools must be kept sharp for safety and efficiency.

Hand and Power Tools Policy

POWER TOOLS

- Electric power tools shall either be of the approved double-insulated type and/or possess a three-wire cord with a ground prong.
- A ground fault circuit interrupter [GFCI - breaker, receptacle, or pigtail type] is required when using a power tool.
- When a tool is equipped with a guard, it shall be used with such guard correctly in place.
- Powers tools shall be disconnected from their power source when changing attachments, making minor adjustments, or repairing.
- Hand-held power tools, such as circular saws, chain saws and percussion tools without positive accessory holding means shall be equipped with a constant pressure switch that will shut off power when released.
- Power tools shall not be raised, lowered or carried by their electric cords.

PNEUMATIC TOOLS

Hammers, drills, saws, tampers, paving-breakers and vibrators are examples of pneumatic tools, which are powered by compressed air. The same precautions for the use and care of pneumatic tools should be followed as for electric and gasoline powered equipment.

- Pneumatic power tools must be secured to the air hose by whip checks to prevent the tool from becoming accidentally disconnected.
- All air-supply lines should be protected from damage, inspected regularly and maintained in good condition.
- Compressed air tools shall not be carried, raised or lowered by their air hoses.
- Compressed air is not to be used to clean one off.

POWDER ACTUATED TOOLS [PAT]

Tools utilizing explosive charges to drive fasteners and perform similar functions are powder- actuated tools. The manufacturers of these devices provide detailed instructions regarding their use and care, which should be consulted as necessary.

- PAT shall only be used by individuals trained and authorized to operate such tool.
- Employees are to use only the PAT provided by their applicable employer.
- PAT shall be equipped to prevent firing during loading, unloading, dropping, or preparing to fire. Also, they have to be equipped with a mechanism to prevent firing unless the muzzle end is pressed against a surface.
- Tools not in proper working order, or that develop a defect during use, shall be immediately tagged and removed from service until repaired.
- Tools shall be loaded only immediately prior to the intended firing time. A loaded tool shall never be carried to or from a worksite. Shot cartridges should always be disposed of properly and according to manufacturer's specifications.
- Loaded tools shall not be left unattended.
- Eye protection must be worn by operator(s) and assistant(s). A face shield must be used where there is danger of spilling materials.
- Hearing protection must be worn when using powder-actuated devices.
- Warning signs and barriers should be posted in areas where powder actuated tools are being used.

- The tool's safety devices are to be inspected and tested prior to each use to assure they are in proper working condition. Testing shall be done in accordance with the manufacturer's recommended procedure.
- The tool shall never be pointed at anyone, whether loaded or unloaded, and hands should be kept clear of the open barrel end.
- Powder-actuated tools must not be stored or used in explosive atmospheres, in the vicinity of highly flammable materials, or where non-sparking tools are required.

Hazard Communication Policy

PURPOSE

The purpose of this policy is to ensure that all affected personnel are aware of the hazards created by materials/chemicals they are exposed to during the course of their work. This policy is designed to provide guidance for complying with the applicable OSHA standard 29 CFR 1926.590 / 1910.1200 (Subpart D – Occupational Health and Environmental Controls).

RESPONSIBILITIES

PROJECT TEAM

- Provide BIG Construction employees with hazard communication information via ongoing training, toolbox talks, etc.
- Direct any hazard communication related questions or concerns to the applicable party and/or the BIG Construction Superintendent.
- Provide direction to the onsite BIG Construction staff as to where the appropriate SDS information can be located.

GENERAL REQUIREMENTS

OVERVIEW

- Definitions
- Hazard Determination
- Containers & Labels
- Safety Data Sheets (SDS) Management
- Training
- Non-Routine Tasks
- Emergency Response

DEFINITIONS

The following definitions are intended to provide guidance when reviewing this policy, product labels or Safety Data Sheets.

- "Article" means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under paragraph (d) of this section) and does not pose a physical hazard or health risk to employees.
- "Chemical" means any element, chemical compound or mixture of elements and/or compounds.
- "Chemical manufacturer" means an employer with a workplace where chemical(s) are produced for use or distribution.
- "Chemical name" means the scientific designation of a chemical in accordance with the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS) rules of nomenclature, or a name which will clearly identify the chemical for the purpose of conducting a hazard evaluation.
- "Combustible liquid" means any liquid having a flashpoint at or above 100 deg. F (37.8 deg. C), but below 200 deg. F (93.3 deg. C), except any mixture having components with flashpoints of 200 deg. F (93.3 deg. C), or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

- "Common name" means any designation or identification such as code name, code number, trade name, brand name or generic name used to identify a chemical other than by its chemical name.
- "Compressed gas" means:
    1. A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70 deg. F (21.1 deg. C); or
    2. A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130 deg. F (54.4 deg. C) regardless of the pressure at 70 deg. F (21.1 deg. C); or
    3. A liquid having a vapor pressure exceeding 40 psi at 100 deg. F (37.8 deg. C) as determined by ASTM D-323-72.
- "Container" means any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank or the like that contains a hazardous chemical. For purposes of this section, pipes or piping systems and engines, fuel tanks or other operating systems in a vehicle, are not considered to be containers.
- "Distributor" means a business, other than a chemical manufacturer or importer, which supplies hazardous chemicals to other distributors or to employers.
- "Employee" means a worker who may be exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies. Workers such as office workers or bank tellers who encounter hazardous chemicals only in non-routine, isolated instances are not covered.
- "Employer" means a person engaged in a business where chemicals are either used, distributed or are produced for use or distribution, including a contractor or subcontractor.
- "Explosive" means a chemical that causes a sudden, almost instantaneous release of pressure, gas and heat when subjected to sudden shock, pressure or high temperature.
- "Exposure or exposed" means that an employee is subjected in the course of employment to a chemical that is a physical or health hazard and includes potential (e.g. accidental or possible) exposure. "Subjected" in terms of health hazards includes any route of entry (e.g. inhalation, ingestion, skin contact or absorption.)
- "Flammable" means a chemical that falls into one of the following categories:
    1. "Aerosol, flammable" means an aerosol that, when tested by the method described in 16 CFR 1500.45, yields a flame projection exceeding 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening;
    2. "Gas, flammable" means:
        a. A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of thirteen (13) percent by volume or less; or
        b. A gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than twelve (12) percent by volume, regardless of the lower limit;
    3. "Liquid, flammable" means any liquid having a flashpoint below 100 deg. F (37.8 deg. C), except any mixture having components with flashpoints of 100 deg. F (37.8 deg. C) or higher, the total of which make up 99 percent or more of the total volume of the mixture.
    4. "Solid, flammable" means a solid, other than a blasting agent or explosive as defined in 1910.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change or retained heat from manufacturing or processing or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A chemical shall be considered to be a flammable solid if, when tested by the method described in 16 CFR 1500.44, it ignites and burns with a self- sustained flame at a rate greater than one- tenth of an inch per second along its major axis.
- "Flashpoint" means the minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested.

- "Foreseeable emergency" means any potential occurrence such as, but not limited to, equipment failure, rupture of containers or failure of control equipment which could result in an uncontrolled release of a hazardous chemical into the workplace.
- "Hazardous chemical" means any chemical which is a physical hazard or a health hazard.
- "Hazard warning" means any words, pictures, symbols or combination thereof appearing on a label or other appropriate form of warning which convey the specific physical and health hazard(s), including target organ effects, of the chemical(s) in the container(s). (See the definitions for "physical hazard" and "health hazard" to determine the hazards which must be covered.)
- "Health hazard" means 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, and neurotoxins, agents which act on the hematopoietic system and agents which damage the lungs, skin, eyes or mucous membranes. Appendix A provides further definitions and explanations of the scope of health hazards covered by this section, and Appendix B describes the criteria to be used to determine whether or not a chemical is to be considered hazardous for purposes of this standard.
- "Identity" means any chemical or common name which is indicated on the Safety data sheet (SDS) for the chemical. The identity used shall permit cross-references to be made among the required list of hazardous chemicals, the label and the SDS.
- "Immediate use" means that the hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.
- "Label" means any written, printed or graphic material displayed on or affixed to containers of hazardous chemicals.
- "Safety data sheet (SDS)" means written or printed material concerning a hazardous chemical which is prepared in accordance with paragraph (g) of this section.
- "Mixture" means any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction.
- "Oxidizer" means a chemical other than a blasting agent or explosive as defined in 1910.109(a), that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.
- "Physical hazard" means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.
- "Produce" means to manufacture, process, formulate, blend, extract, generate, emit or repackage.
- "Pyrophoric" means a chemical that will ignite spontaneously in air at a temperature of 130 deg. F (54.4 deg. C) or below.
- "Specific chemical identity" means the chemical name, Chemical Abstracts Service (CAS) Registry Number or any other information that reveals the precise chemical designation of the substance.
- "Unstable (reactive)" means a chemical which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense or will become self-reactive under conditions of shocks, pressure or temperature.
- "Use" means to package, handle, react, emit, extract, generate as a byproduct or transfer.
- "Water-reactive" means a chemical that reacts with water to release a gas that is either flammable or presents a health hazard.
- "Work area" means a room or defined space in a workplace where hazardous chemicals are produced or used, and where employees are present.

- "Workplace" means an establishment, job site or project, at one geographical location containing one or more work areas.

CONTAINERS AND LABELS

- All containers of known or potentially hazardous materials must be labeled in accordance with all applicable standards (including but not limited to OSHA, NFPA, etc.).
- Each applicable party is responsible for the proper labeling of their materials and/or containers.
- All hazardous material labels must include the following information:
    - The chemical identity
    - The appropriate hazard warnings
    - The name and address of the manufacturer, importer or other responsible party
- Hazard labels that become illegible due to damage, removal, etc. should be replaced as soon as possible with the same label or an equivalent label that provides all of the relevant hazard information (i.e. identity, warnings, responsible party name & address).

Transfer Containers

- Transfer containers may not need to be labeled if the hazardous material at hand is transferred into said container and used immediately by the employee completing the transfer.
    - Any deviations from this transfer process will require a proper label on the transfer container as well as the supply container.
    - Questions regarding the labeling of transfer equipment should be directed to the Power Safety Department.

SDS MANAGEMENT

- All Subcontractors are responsible for providing SDS sheets upon request.
- SDS sheets can be found by entering the name of the product in your search engine as backup.
- All field staff must have internet access in order to be able to quickly look up required SDS information.
- If no reliable internet access is available, paper copies of the relevant SDS sheets must be kept on site.

TRAINING

General Hazard Communication

- All personnel are solely responsible for training their employees with respect to Hazard Communication.
- General Hazard Communication training will be provided to BIG Construction employees via "toolbox talks" and the Monthly Operations workshops (see "New Hire Orientation").
    - Discussion topics include labels, SDS and general Hazard Communication procedures.

NON-ROUTINE TASKS

- BIG Construction's project team must be notified when hazardous materials will be used and what methods will be put in place to protect employees, other personnel, general public and property.
- All personnel are required to comply with the applicable material's SDS information and applicable compliance codes (e.g. OSHA, municipal ordinances, etc.).

BIG Construction Employees

- Any BIG Construction employee that may be exposed to hazardous materials/chemicals when conducting non- routine tasks shall be informed of the risk, trained on the proper procedures and protected as the situation requires.
    - BIG Construction supervision and the Safety Department will rely on the SDS and/or known material data to provide necessary and compliant controls for the task at hand.

- Questions regarding whether or not a task is considered "non-routine" should be directed to the BIG Construction Superintendent prior to the start of that work.

EMERGENCY RESPONSE

- In the event of a chemical/material related emergency:
  1. Secure the scene as necessary
  2. Refer to the project's site-specific Emergency Action Plan (see Crisis Management Policy)
  3. Use the SDS sheet as a response reference

Hearing Protection and Conservation Policy

PURPOSE

The purpose of this policy is to provide guidance to BIG Construction employees with respect to hearing protection and conservation requirements as they relate to the applicable OSHA standard (29 CFR and 1926.52– Occupational Noise Exposure).

RESPONSIBILITIES

PROJECT TEAM

- Provide BIG Construction employees with Hearing Protection and Conservation information via site orientation, toolbox talks, etc.
- Direct any hearing-protection-and-conservation-related questions or concerns to the BIG Construction Safety Person.
- Consider noise exposures in planning operations, including but not limited to:
    - Ambient noise requirements in the municipality;
    - The need to notify involved or affected parties (e.g. building engineering);
    - Analyze the need for separation from neighbors and/or other workers during noise- or vibration-producing activities;
    - The use of signage to keep personnel from entering areas where noise levels may exceed OSHA safety standards;
    - All equipment that will be used and the combined effects with respect to noise levels;
    - Contact the BIG Construction Safety Committee to determine if sound monitoring and/or additional precautions will be necessary.

GENERAL REQUIREMENTS

OPERATIONAL CONSIDERATIONS

- BIG Construction employees who are concerned about any operation at hand with respect to noise levels should contact the Project Supervisor as soon as possible.
- If a tool / operation not referenced in the charts below will be utilized, Project Teams should contact the BIG Construction Safety Committee to determine if sound monitoring and/or additional controls are needed.
    - This is especially true for electric-, gasoline- or air-powered tools, and powder-actuated tools.
- When feasible, consider using equipment with lower noise exposure than the current or proposed equipment.
- When feasible, move loud operations (e.g. generators, compressors, etc.) as far away from worker and public exposure as possible.

APPLICABLE EXPOSURE LEVELS

- BIG Construction recognizes that certain activities during the construction process will generate different noise levels. To protect all affected employees, BIG Construction has adopted the following noise exposure levels based on OSHA safety standards:
- Permissible Noise Exposures: (Source: 29CFR1926.52, TableD-2 Permissible Noise Exposures)

Duration per day of the Noise-Producing Activity (Hours)	Permissible Noise Level Decibels (dBA) slow
8	90
4	95
2	100
1	105
½	110
¼ or less	115

- As such, employees could work no longer than 4 hours in an environment with noise levels at or above 95 dbas without hearing protection or other controls.
- Two or more periods of noise exposure at different levels requires that the combined effect be considered (see 1926.52(d)(2)(i))

HEARING PROTECTION EQUIPMENT

The following applies to hearing protection devices that include, but are not limited to, ear plugs, ear muffs, dual protection, noise cancellation devices, etc.:

- Employees are to follow manufacturers' recommendations for use of all PPE.

Ladders and Stairways Policy

PURPOSE

These parameters apply to stairways and ladders used in BIG Construction operations, including, but not limited to, new construction, alteration/renovation, repair and demolition. All parties involved will comply with OSHA standard 29 CFR 1926.1050 (Subpart X – Stairways and Ladders).

RESPONSIBILITIES

PROJECT TEAM

- Provide BIG Construction employees with ladder and stairway information via site orientation, toolbox talks, etc.
- Direct any ladder or stairway related questions or concerns to the BIG Construction Superintendent.

GENERAL REQUIREMENTS

Ladders, stairways or ramps are required at elevation changes of 19" or more. This includes, but is not limited to, access to the site office, equipment, material storage trailer, etc.

LADDERS

- Ladders are to be inspected before each use. Damaged ladders (e.g. broken connections, spreaders or footings) must be removed from service immediately and reported to the applicable supervisor (e.g. Foreman, BIG Construction Project Team, etc.).
- Ladders and their associated landings (top and bottom) must be kept free of debris/materials and used correctly (i.e. according to the manufacturer's specifications).
- Ladders can only be used on stable, level, and clean surfaces.
- Ladders shall not be placed on top of material to gain higher access (e.g. on drywall or plywood).
- Ladders must not be loaded beyond the manufacturer's rated capacity.
- Whenever possible, do not climb the ladder while transporting material. Find another method of transport that can withstand the material load.
- At least 3 points of contact are required when climbing a ladder. These can include 2 feet and 1 hand, 2 hands and 1 foot, etc.
- Face the ladder when going up or down.
- When ladders are the only means of egress for 25 or more employees, at least 2 ladders (or a double-cleat, job-made ladder) must be provided.
- Spiral stairs are not allowed unless they are a permanent part of the structure.
- Ladders should not be used at or near an active doorway without the assistance of a spotter.
- Fall protection must be provided when ladders are utilized near outside edges / exposed sides of a landing that is 6' above the surface below.

Step Ladders (A-Frame Ladders)

- Step ladders should be folded out fully, with spreaders locked, before use.
- Step ladders shall not be used while they are resting against the wall.
- As indicated by the manufacturers' warning labels, the top two rungs of a step ladder shall not be used.

    - Step ladder warning labels must remain attached and legible.
- Straddling of any kind is prohibited during the use of a step ladder.
- Climbing the ladder's cross-bracing is prohibited (unless the ladder has been specifically designed for that purpose, i.e. a double-rung step ladder).
- Tools, materials, and equipment shall not be left unattended on top of step ladders.

Extension Ladders

- Extension ladder rails must extend 3' above the landing, or the ladder must be secured and a grab rail must be provided.
- Extension ladders are to be used as designed (e.g. extension ladders are not to be used as scaffold planks, nor can they be split apart and used as two separate ladders).
- Extension ladders are to be leaned at a 4 to 1 ratio.
    - 1' out for each 4' of vertical height.
- Extension ladders should be secured according to best practices when there is a significant displacement hazard.
- Extension ladders may not be tied or otherwise rigged together to create a larger ladder (unless specifically designed for such use).

Fixed Ladders

- Fixed ladders must be free from obstructions within 30" on the climbing side, 7" behind the ladder. If a deflector is provided (e.g. a smooth wall), 24" or more clearance is required on the climbing side.
- Access areas (e.g. roof top access) need to be clear of ice, snow, and debris before applicable work.

Job-Made Ladders

- Job-made ladders are to be constructed and used to meet the ANSI standards (refer to Appendix A for the corresponding diagram).
- Allow for a 1 to 4 lean angle (that's 1' out for each 4' of vertical height)
    - Best practices involve securing the ladder to prevent any possibility of displacement.
- The maximum working length of any job made ladder is 24 feet.
- The rails must extend 36" to 42" above the point of bearing (the landing) to provide handholds.
- Fall protection must be provided on outside edges and exposed sides of a landing that is 6' above the surface below.
- The landing areas at the top and bottom must be free of debris and material to ensure safe mounting and dismounting.
- Job made ladders and their landings shall be inspected regularly for defects (e.g. loss/worn/broken cleats, split side rails). Any defects must be corrected immediately (or the entire ladder must be replaced).
- The spacing from the ground to the top of the first step must be 12" or less.
- The maximum space between the top of a cleat to the top of the cleat directly above it is 12" (for example, the top of the fourth step must be within 12" of the top of the fifth step).
- Cleats (rungs) shall be evenly spaced apart.
- For a single-cleat ladder, the spacing between rails is a minimum of 16" and a maximum of 20" (this is the interior dimension).

- For a double-cleat ladder, spacing between rails is a minimum of 18" and a maximum of 22" (this is the interior dimension).
- Job made ladders shall not be used for guys/braces, or as hoist supports.

STAIRWAYS

- Stairways and the associated landings must be a top priority with respect to housekeeping and snow / ice removal. They should be free of slippery conditions, hazardous projections (e.g. nails, screws), flammable materials, stored materials, debris, etc.
- Stairway landings must be at least 30" deep and 22" wide. Where a door or gate opens directly into a stairway, the landing must extend at least 20" beyond the swing of a door.
- Pan-type stairs must not be used until they have been properly filled to the top of the pan (i.e. wooden fill, poured concrete, etc.). Pan-type stairs that have not yet been filled must be barricaded from use on both the upper and lower landings (if access is possible).
- Skeleton stairs (e.g. metal, spiral staircases) may not be used unless they contain full treads and landings.
- Incomplete stairs will be closed by a physical barricade with signage posted prohibiting the use of the stairs (i.e. "Stair Closed").

Railing

- When the stairway has 4 or more risers, and/or when there is an elevation change greater than 30", a railing(s) is required along the unprotected side(s). This includes a top rail and midrail system.
- Midrail can be substituted with screens, mesh or intermediate vertical members, as long as they have been designed to withstand the associated forces.
- Handrails must be between 30" to 37" from the top of the tread, installed to withstand a force of 200lbs.
- Handrails must provide at least a 3" clearance from walls or other structures.

Trailer Stairs

- Trailer stair systems are to be secured properly and maintained as needed to provide a safe transition from the trailer.
- Trailer stairs should be given high priority with respect to snow and ice management.
- Trailer doors that do not have stairs must be physically blocked off using any/all of the following methods:
    - Keep the doors locked;
    - Install the burglar bars;
    - Post signage / barricades.
    - Important Note: This also applies while relocating trailers / stairs.
    - Refer to Appendix B for sample illustrations.

APPENDICES & REFERENCES

Appendix A – ANSI A14.4-2009 Safety Requirements for Job-Made Wooden Ladders (relevant excerpts)
Appendix B – Trailer Stair Illustrations

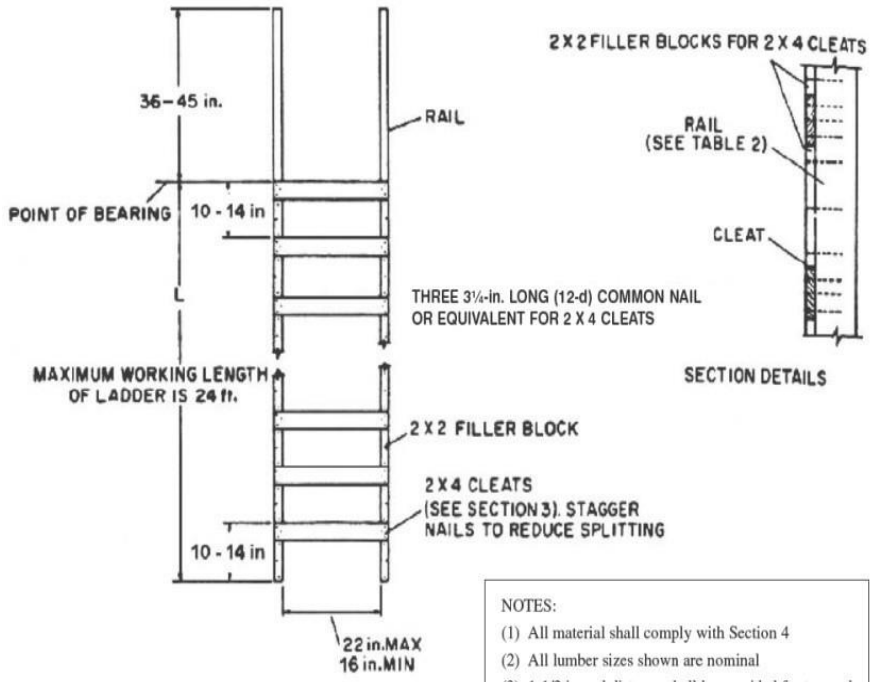
Table 2
Minimum Rail Size for Single-Cleat Ladders[3] (Nominal-Dimension Lumber)

Working Length (feet)	Pitch (H/L) (See Note 1)				
	Vertical	1/10	1/8	1/6[3]	1/4[3]
12 or less	2 x 4	2 x 4	2 x 4	2 x 4	2 x 4
14	2 x 4	2 x 4	2 x 4	2 x 4	2 x 4
16	2 x 4	2 x 4	2 x 4	2 x 4	2 x 6
18	2 x 4	2 x 4	2 x 4	2 x 6	2 x 6
20	2 x 4	2 x 4	2 x 6	2 x 6	2 x 6
22	2 x 4	2 x 6	2 x 6	2 x 6	2 x 6
24	2 x 4	2 x 6	2 x 6	2 x 6	2 x 6

Table 3
Minimum Rail Size for Double-Cleat Ladders[3] (Nominal-Dimension Lumber)

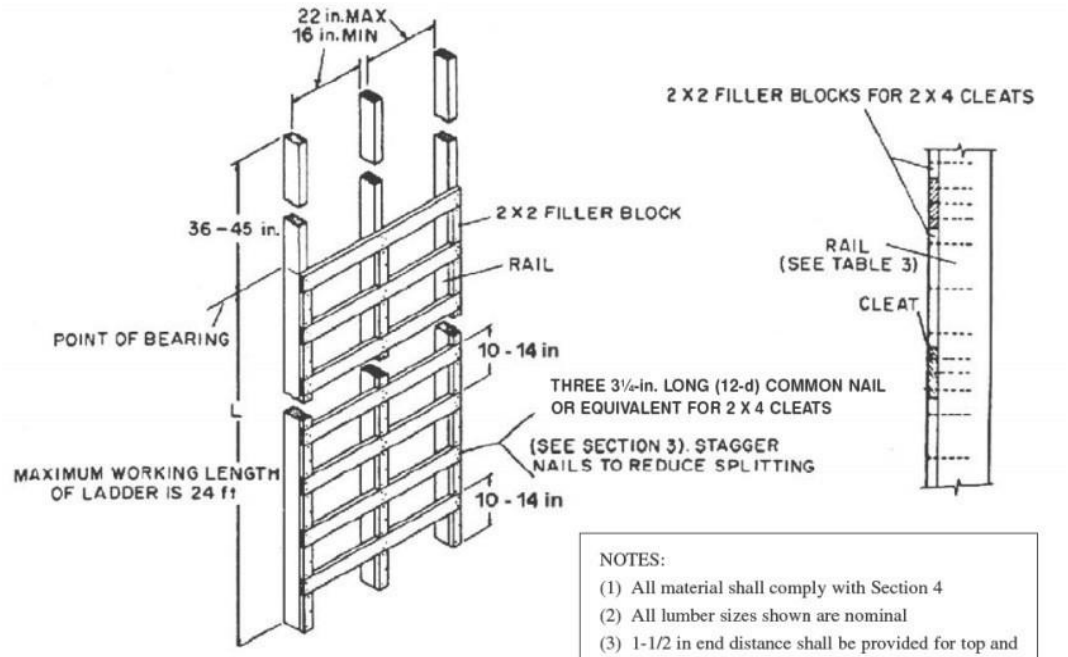
Working Length (feet)	Pitch (H/L)				
	Vertical	1/10	1/8	1/6[3]	1/4[3]
12 or less	2 x 4	2 x 4	2 x 4	2 x 4	2 x 4
14	2 x 4	2 x 4	2 x 4	2 x 4	2 x 6
16	2 x 4	2 x 4	2 x 6	2 x 6	2 x 6
18	2 x 4	2 x 6	2 x 6	2 x 6	2 x 6
20	2 x 4	2 x 6	2 x 6	2 x 6	Note 2
22	2 x 4	2 x 6	2 x 6	2 x 6	Note 2
24	2 x 4	2 x 6	2 x 6	2 x 6	Note 2

Figure 1
Cleat Attachment, Single Cleat Ladders



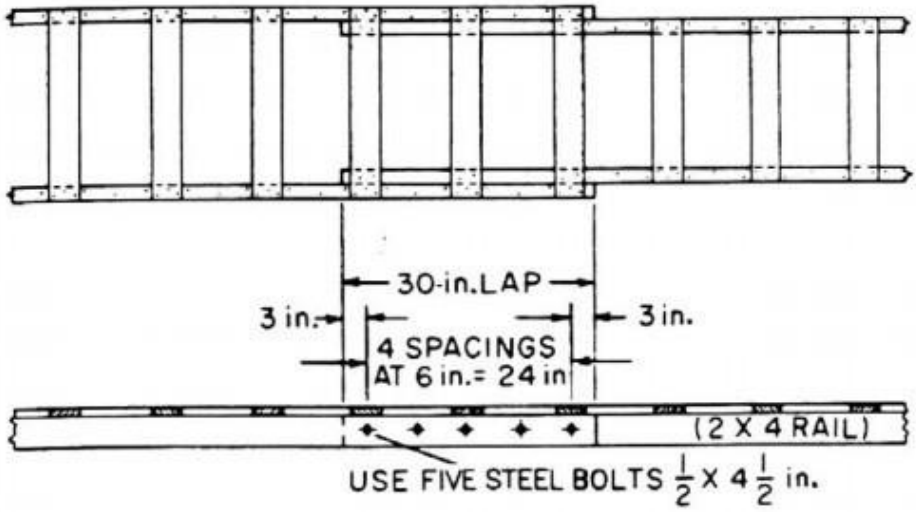
NOTES:
(1) All material shall comply with Section 4
(2) All lumber sizes shown are nominal
(3) 1-1/2 in end distance shall be provided for top and bottom nails on filler blocks
(4) For woods with high splitting tendency, see 5.5.3

Figure 2
Cleat Attachment, Double Cleat Ladders

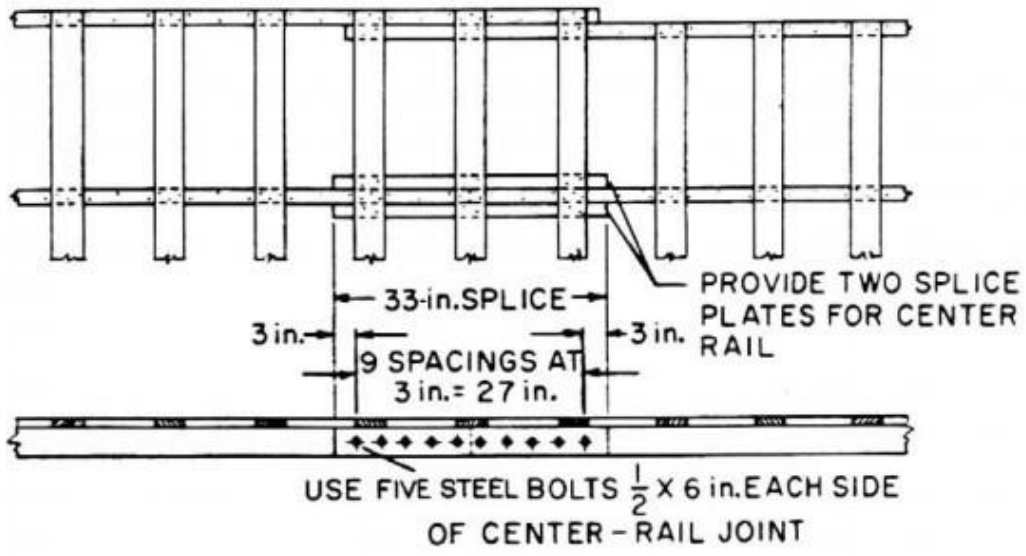


NOTES:
(1) All material shall comply with Section 4
(2) All lumber sizes shown are nominal
(3) 1-1/2 in end distance shall be provided for top and bottom nails on filler blocks
(4) For woods with high splitting tendency, see 5.5.3

Figure 4
Ladder Splices, 2 x 4 Rail

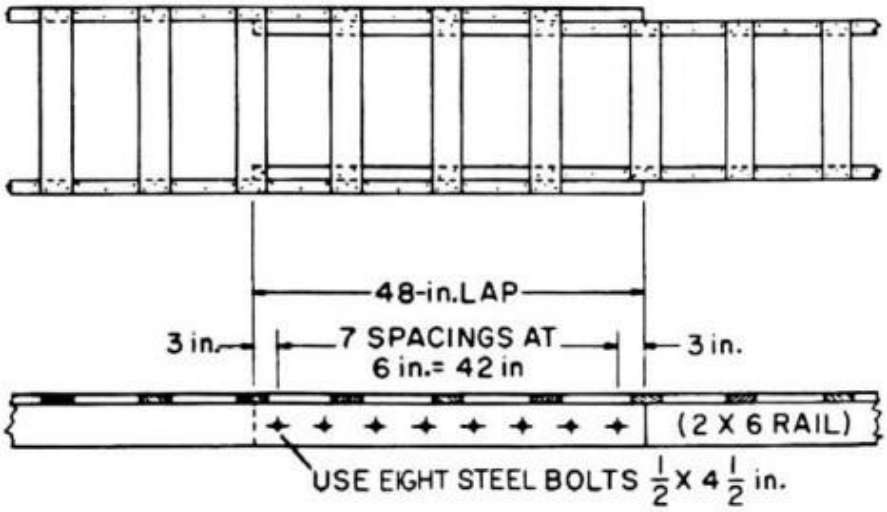


SIDE-RAIL SPLICE

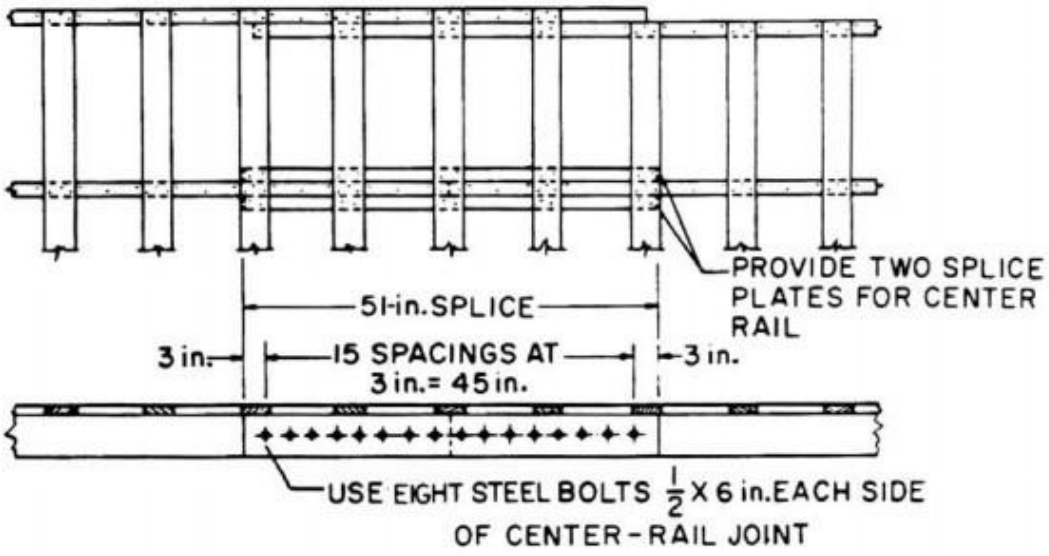


CENTER-RAIL SPLICE

Figure 5
Ladder Splices, 2 x 6 Rail

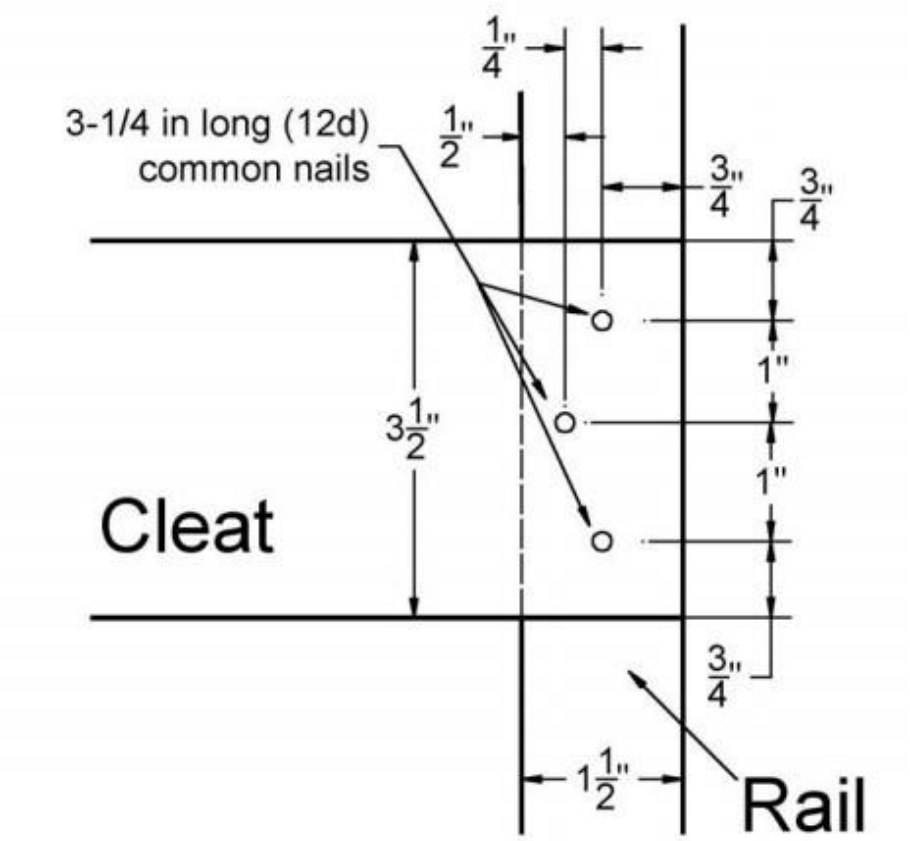


SIDE - RAIL SPLICE



CENTER - RAIL SPLICE

Figure 6
Recommended Fastener Spacing for Attaching Cleats to Rails



Appendix B – Trailer Stair Illustrations

Trailer stair setups such as this are unacceptable: This set of stairs is too far from the trailer. This door must be physically barricaded as soon as possible (e.g. locked, signage, barriers inside) and the stairs must be re-positioned to provide a safe transition from the door.

This picture illustrates barricade techniques that can be used when trailers/stairs are moved or maintained.

Material Stocking Guidelines

PURPOSE

This document will set forth guidelines for stocking various materials on jobsites. It is not all encompassing and does not cover every possible scenario or material that could be stocked. Any questions regarding a specific scenario not covered by these guidelines should be directed to a member of the BIG Construction Safety Department.

RESPONSIBILITIES

PROJECT TEAM

- Develop a plan for material loading based on the floor loading limits of their project.
- Ensure that subcontractors are loading material based on that plan, and following the best practices outlined in this document.

GENERAL REQUIREMENTS

OVERVIEW

- Prior to any material loading, verify that the floor loads have sufficient capacity for the items/equipment/materials.
- All items should be stocked so as to prevent unexpected incidents, including, but not limited to, toppling over, collapse, creating protrusion hazards, etc.
    - When possible/practical, overhead storage should be minimized / avoided.
    - Items should be stacked and/or secured so as to prevent unexpected shifting.
    - Protruding items (e.g. horizontal rebar, conduit, threaded rod, etc.) should be stocked so as to avoid protruding hazards or should be barricaded and made highly visible as needed.

PANEL PRODUCTS

- Panel products can include, but are not limited to, drywall, plywood, wide lumber, etc. These principles can also apply to doors.
- When transporting with a forklift: Fork spacing should be one-half the length of panels or base being handled, so that a maximum of 4' extends beyond the supports on either end.
- Lifting bands are not a substitute for proper fork spacing. Bands prevent deflection during picking but will not prevent breaking during transport.
- Support risers should be of uniform height and be aligned vertically so that the loads are transferred directly to the floor.
- Stacks should be kept low enough to not pose a danger of toppling or being blown over by winds.
- Stacks should not be used as work platforms. This includes resting ladders, lifts, and scaffolds on them.

Vertical Stacking

- Vertical stacking of panel products is acceptable only when meant for immediate use, or when necessary due to space constraints.
- Vertical stacks should allow between 4 and 6 inches of space between the bottom of the first board in the stack and the wall.

Material Stocking Guidelines

- "Unattended" vertical stacks should be avoided. However, when necessary, "unattended" vertical stacks should have warning tape or signage to alert workers in the area to the potential hazard, if disturbed.
- Vertical stacks should never be left unattended in shared corridors of existing facilities. This includes during break times.
- Where possible, additional bracing should be added to vertical stacks, such as shims or bungee straps.

Material Carts

- All carts should be loaded in accordance with manufacturer specifications. This includes adhering to weight, and material size limits.
- Loaded carts should not be left unattended unless they have been secured to prevent accidental movement or tipping of the load.
- Loaded carts should never be left unattended in shared corridors of existing facilities. This includes during break periods.
- Any damaged carts should be tagged as such, and immediately be taken out of service until repairs can be made.

Personal Protective Equipment Policy

PURPOSE

This section will define the necessary precautions and/or procedures to maintain adequate levels of personal protective equipment (PPE). This policy has been designed to provide guidance to BIG Construction employees for complying with the applicable OSHA standard 29 CFR 1926.95 (Subpart E – Personal Protective and Life Saving Equipment).

RESPONSIBILITIES

PROJECT TEAM

- Provide BIG Construction employees with information via site orientation, toolbox talks, etc., to maintain adequate personal protective equipment usage.
- Provide BIG Construction employees with the necessary personal protective equipment to safely complete the work and comply with the applicable safety requirements.
- Direct any personal protective equipment related questions or concerns to your General Superintendent, including, but not limited to, training regarding the use of specialized personal protective equipment (e.g. Tyvek suits, aprons, etc.).

GENERAL REQUIREMENTS

OVERVIEW

- General
- Hard Hats
- Gloves
- Reflective Vests
- Protective Clothing
- Footwear
- Hearing Protection
- Eye and Face Protection
    - Protection against Radiant Energy
    - Laser Protection
- Respirators
- Fall Protection

GENERAL

- PPE such as work boots, non-specialty prescription safety eyewear, everyday clothing (e.g. long-sleeve shirts, long pants), and ordinary clothing used for protection from weather (e.g. sunglasses/sunscreen, winter coats, winter gloves) are the responsibility of the employee.
- All other PPE (including non-prescription eye protection, face shields, hard hats, hearing protection, barrier creams, respirators, and fall protection equipment) required for use to protect employees from workplace exposures will be provided by BIG Construction. BIG Construction will pay for replacement PPE as necessary, except when the employee has lost or intentionally damaged the PPE.
- Upon termination of employment for any reason, employees are required to return all PPE provided by BIG Construction. BIG Construction reserves the right to charge employees accordingly for any PPE that is not returned or damaged beyond its reasonable scope of use.

HARD HATS

- Hard hats are to be worn 100% of the time on BIG Construction projects.

  - This includes, but is not limited to, BIG Construction employees, contractors, visitors, inspectors, clients, etc.
  - Equipment operators working outside of their equipment are required to wear hard hats 100% of the time.
  - BIG Construction employees are required to wear BIG Construction -logo hard hats.
- All hard hats are to meet or exceed American National Standards Institute (ANSI) Z89.1 – 2003.
- Hard hats are to be worn correctly (i.e. using the proper suspension, keeping the hard hat straight and level on the top of one's head, with the bill facing forward.).
- Perceived defects such as visible cracks, dents and/or audible crackling sounds when the hard hat is squeezed should be reported to a supervisor immediately as the hard hat must be replaced as soon as possible. The date stamp inside the shell of the hard hat should also be checked. Any hard hat beyond its service life, (older than 5 years) should be replaced.

GLOVES

- Gloves should be used when lifting/carrying/moving sharp objects.
- Gloves should be used when working with sharp objects, unless there is a potential that moving parts could catch the glove and pull the employee's hand(s).
- BIG Construction employees should use the proper gloves for the task at hand.

REFLECTIVE VESTS

- Reflective vests should be worn by all employees when working adjacent to high-traffic mobile equipment areas (a site-specific requirement), or when adjacent to or in live vehicular traffic (i.e. streets, roadways, etc.).

PROTECTIVE CLOTHING

- Long pants and a shirt are to be worn.
- No shorts, tank tops or any inappropriate articles of clothing can be worn.
  - If an employee is wearing anything that BIG Construction supervision finds inappropriate, they will ask the employee to remove/cover the article. If the employee cannot, or refuses to do so, the employee will be removed from the site.
- Loose fitting clothing, garments, shirt tails or floppy sleeves should be contained.
- No dangling jewelry should be worn.
- Certain operations may require the use of additional protective clothing (e.g. Tyvek suits, aprons, etc.). Employees are required to comply with the applicable standards based on the operation and hazards at hand (e.g. OSHA Standard 29 CFR 1926.1100 Subpart Z – Toxic and Hazardous Substances).
  - BIG Construction employees that will have to engage in said operations must coordinate the proper training, planning, equipment selection, etc. with the BIG Construction Safety Department prior to the operations.
  - Clean spaces / sterile areas (i.e. hospitals) may require the use of hair covers, scrubs, and/or boot covers during certain phases of construction. These operations should be coordinated with the applicable facilities personnel (e.g. Infection Control) and specialty PPE used as directed.

FOOTWEAR

- Substantial leather footwear will be worn, preferably full height boots.
- "Gym shoe" style work shoes are not permitted.

HEARING PROTECTION

- Hearing protection will be required in accordance with OSHA standards.

- For detailed information regarding hearing protection and conservation, refer Hearing Protection and Conservation Policy in the Safe Procedures Manual.

EYE AND FACE PROTECTION

- Eye protection is to be worn 100% of the time by all employees and visitors to BIG Construction projects. At a minimum, safety glasses, with approved side shields, will be worn. Those employees who wear prescription glasses will be provided with either over-the-glasses safety glasses or when permissible, attachable side shields.
- Additional eye and face protection is required whenever operating equipment or using material that could pose a facial and/or eye hazard (i.e. goggles, face shields).
    - Including, but not limited to: welding/burning/cutting with torches, abrasive wheels/portable grinders, drilling/cutting/chipping overhead, chipping concrete/stone/metal, working with materials that may scale/flake/chip, powder-actuated/nailing tools, compressed air tools, etc.
- Whenever performing overhead grinding/cutting metallic material (i.e. iron, steel, aluminum, etc.) BIG Construction employees shall wear a fullface shield in addition to safety glasses.
- All eye and face protection must meet or exceed American National Standards Institute (ANSI) Z87.1 – 2003.
- The applicable standards (e.g. OSHA standard 29 CFR 1926.102 Table E-1) should be used as a guide in the selection of eye and face protection for the operations and hazards at hand. The protection should meet the following criteria:
    - Provide adequate protection as defined by the standard above
    - Provide reasonable comfort when worn under the designated conditions
    - Fit snugly
    - Not unduly interfere with the movements of the wearer
    - Have adequate durability
    - Capable of being disinfected and easily cleaned
- Eye and face protection shall be kept clean and in good repair.
    - Perceived defects such as visible cracks, excessive scratches, etc. should be reported to a supervisor immediately as the eye or face protection must be replaced as soon as possible.

Protection against Radiant Energy

- Employees engaging in certain welding and cutting operations shall refer to the applicable standards in selecting the proper PPE (e.g. OSHA standard 29 CFR 1926.102 Table E-2).
- For detailed information regarding protection against radiant energy, refer to Fire Prevention and Protection Policy.

Laser Protection

- Employees whose assignment(s) require exposure to laser beams shall be furnished with adequate laser safety protection as defined by the applicable standards (e.g. OSHA standard 29 CFR 1926.102 Table E-3).
- Proper warning signs explaining that a laser is in use should also be posted by the applicable party in all affected areas.

RESPIRATORS

- For detailed information regarding respiratory protection, refer to the Respiratory Protection Policy.

FALL PROTECTION

- For detailed information regarding fall protection, refer to the Fire Protection and Prevention Policy.

Project Safety Observation Guideline

PURPOSE

The purpose of this policy is to provide guidance with respect to project safety observations. The following expands on the Safety Observation Report and explains many of the safety items that may be observed during walkthroughs. These guidelines can be used as a checklist while completing the Safety Observation Reports or as a reference when safety questions arise on the project. While these guidelines are not all- inclusive, they are intended to provide BIG Construction projects with guidance regarding the most common observations.

GENERAL GUIDELINES

This information is to be used as a guide. There may be additional safety, health and risk conditions that are not included in this document that may be included as part of the observation process.

GENERAL/ENVIRONMENT

Project Setup (signage/postings/first aid)

- Interior Sign Package posted at occupied space doors
- Exterior Sign Package – signs around the perimeter every 50 feet
- Zero Tolerance signs posted at all primary entrances to the site.
- Emergency Numbers posted
- Compliance posters posted in the project office (e.g. OSHA, Federal)
- First Aid Kit(s) posted in the project/safety office and restocked as needed (e.g. use, expiration)
- Clinic information for BIG Construction employees is current and available

General Housekeeping & Dust Control

- Walkways, passageways, and access/egress areas cleaned & given housekeeping priority
- Trash, scrap, etc. picked up and disposed of properly
- Trash receptacles provided, maintained, and in use
- Supplies, materials, and equipment are maintained, organized, and stacked neatly
- Secure any materials that can roll or shift (e.g. tubes, pipes, bar joists, etc.)
- Wet Methods used (e.g. demo, chipping/cutting/grinding of rock/masonry/concrete)
- Ventilation, HEPA filters, etc. used as needed to control dust
- Approved sweeping compound used during cleanup, as needed

Slip/Trip/Fall Hazards

- Walking and working surfaces maintained to prevent slips/trips/falls/other hazards
- Proper controls during adverse weather (e.g. shoveled and salted during snow)

Exposures to others (subcontractors or public)

- Project work isolated from the public/other trades as needed
- Exterior – fencing, mesh (full height in Chicago), warning signs, isolation
- Interior – proper partitions used for the work, warning signs as needed

Pinch Point/ Struck-by Hazards (hands/falling objects)

- Overhead hazards properly addressed (e.g. toe boards/debris net, items secured, canopies)
- Moving equipment is properly guarded (e.g. air compressors)
- Lifting and placing objects so as to avoid hand/finger pinching
- Mobile equipment operated carefully and equipped with proper movement alarms (e.g. back- up alarms, beacon lights)

- Swing radius is protected as required

Competent Person On Site
- Each Subcontractor has a Competent Person on site capable of identifying and addressing hazards
- OSHA 10/30 Hour training completed, updated and filed accordingly

Contingency Plans (crisis/water/emergency prep)
- Crisis management plan (green folder) is posted and updated as needed
- Water management plan is established, utilized and updated (e.g. shutoff diagrams)
- Emergency numbers are posted and updated, as needed

Environmental Hazards (silica/asbestos/contaminated soil)
- Proper controls in place to address silica dust (e.g. wet methods, vacuum attachments)
- ACM surveys received, Owner Asbestos removal contractor procedures in place
- Impacted soil procedures in place (e.g. documentation, signage)

Project Documentation
- Project filing procedures established and ongoing housed in Procore (Daily Logs/Reports, Permits, etc.)
- Containers are properly labeled

Fire Suppression System Protected
- Sprinklers are identified/protected during work that requires it (e.g. demo-rehab)
- Shutoff valve locations are maintained and posted in each project area
- Heat and smoke detectors are covered and/or shut-down as needed during operations

PERSONAL PROTECTIVE EQUIPMENT

Hard Hats
- All employees wearing proper hard hats in the correct manner following manufacturer guidelines.

Eye & Face Protection
- Eye protection worn 100% on BIG Construction projects (safety glasses with side shields or equivalent)
- Additional eye and face protection in combination is required whenever operating equipment or using material that could pose a facial and/or eye hazard (e.g. cutting with torches, abrasive wheels / grinders, etc.)

Hearing Protection
- Operations that exceed 90 dBA show proper controls in place
    - Signs are posted as required,
    - Hearing protection is being used as necessary, etc.
- Hearing protection is maintained on the site as needed by the affected personnel
- Employees wearing ear plugs or muffs must be properly trained on the correct use

Protective Clothing (gloves, Tyvek, traffic vests, etc.)
- BIG Construction employees are wearing proper gloves when handling sharp/hazardous objects
- Tyvek suits are used and removed properly when needed (e.g. Lead demo)
- Traffic vests are worn by BIG Construction employees during traffic control/work around equipment
- All employees are wearing long pants, a shirt and substantial leather footwear
- Boot covers, surgical suits, hair covers worn as required in clean spaces (e.g. sterile areas)
- Any other specific PPE (e.g. weld helmets)

Project Safety Observation Guideline

ERGONOMICS & TOOLS

Proper Use/Condition of Tools

- All tools on site are maintained in a working condition (e.g. oiled as needed, no cracks)
- Damaged tools are removed from service and tagged properly
- All tools equipped with guards should have them in place, working properly
- Guards cannot be modified without approval from the applicable manufacturer
- Fittings and hoses are secured (e.g. tie-wire, whips, etc.)
- Tools are being used for their intended purpose (e.g. proper saw for the material being cut)

Work Area Setup

- Work area established per project plan (e.g. designated areas, away from walking paths)
- Cut stations set up as needed

Lifting/Carrying Techniques

- Mechanical transport methods in place whenever possible/practical
- Proper lifting techniques (e.g. lift with legs/hips and not the back)
- Proper carrying techniques (items close to the body, change direction by leading with feet first)

Body Position

- Controls to address twisting, kneeling, squatting, over-reaching, overhead work, standing all day

LADDERS/SCAFFOLDS/ACCESS

Adequate Access Provided

- Changes in elevation greater than 19" are provided with a ladder, step, stair, or ramp
- Steps with 4 or more risers or 30" elevation changes require handrails
- Scaffolds are equipped with proper access points (e.g. extension or built-in ladders)

Ladder Procedures

- No metal ladders
- Damaged ladders (e.g. cracks, splits) are removed from service
- Ladders are not missing any rungs or feet
- Ladder landing areas are clean and level
- No leaning of step ladders – step ladders should be fully open with braces opened & locked
- No using the top 2 steps of a step ladder
- Extension ladders set at about a 4:1 height to base ratio
- BIG Construction's best practices involve securing extension ladders
- Extension/job made ladder extends 3' above a landing (or proper bracing is provided)
- Job-made ladders are well-made and adhere to ANSI standards
- Ladders are inspected regularly

Competent Person for Scaffolds

- The competent person for the scaffold is on site at all times when their scaffold is used
- Applicable scaffold training is completed (e.g. Chicago Ordinance)

Scaffold Procedures

- Scaffolds inspected before each use, daily, or as needed by the competent person

- 4:1 height to base ratio with outriggers/tiebacks used as needed
- All connections are pinned
- Scaffold parts are all of a similar metal
- Mud sills provide adequate support for the scaffold jacks
- Scaffold is fully decked with no excessive gaps
- Guardrails and toeboards are in place on all sides at 6 feet and above
- Bakers Scaffolds at 6' or higher will be equipped with
    - Fall protection (e.g. guardrails), outriggers, proper access

FALL PROTECTION

Fall Protection Methods Implemented

- Fall protection is used/applied 100% when employees are exposed to a fall of 6' or greater
- Fall protection system selected and used according to plan and design
- Fall protection plans submitted in writing by the affected personnel
- Guardrails are sturdy, equipped with toeboards, toprails 42" high +/- 3"
- Perimeter cable is sturdy and does not deflect below 39"
- Perimeter cable is flagged every 6' or provided with mesh, as required by local ordinance
- Perimeter cable is not used as a tie-off point
- 3/8" cable is used
- At least 2 clamps are used to secure perimeter cable (never saddle a dead horse)
- Guardrail Removal Permit is utilized for guardrail removal
- Fall protection is required while installing/working outside of guardrails or perimeter cable
- Controlled Access Zones are installed and utilized correctly; signage and barriers in place
- Fall rescue plans are developed by each applicable trade

Fall Protection Equipment

- Personal Fall Arrest (PFAS), Personal Restraint Systems (PRS), or other fall protection systems require proper training, inspection and usage
- Employees using PFAS/PRS must use a proper anchor, connecting device, and body support (e.g. drop anchor, retractable lanyard, full-body harness)
- Horizontal lifelines and anchor points are designed by a qualified person
- Equipment submitted to the forces of a fall is removed from service immediately

Impalement Protection

- Protruding vertical impalement hazards (e.g. rebar, conduit stubs) are protected
    - Approved caps, bent away from a vertical setting, planked
- Protruding horizontal rebar that causes a scratch hazard is protected

Hole Covers

- All floor openings 2" or more in diameter must by covered, marked to identify a hole, secured, and capable of supporting twice the intended loads

ELECTRICAL

Electric Cords

- Ground pin in place
- Construction grade cords with ground pins only
- Outer insulation intact and no internal wires exposed
- Keep cords out of walkways, pinch points and vehicle traffic (unless protected)

- Keep out of water whenever possible
- Protect from all types of damage (e.g. welding, grinding, hot work, etc.)

GFCI's

- All electrical appliances and tools must be GFCI protected (temporary and permanent power), such as pigtails, GFCI receptacles, etc.
- GFCI shall always originate at the electrical source, when practical
- GFCI breakers and outlets will be tested periodically by the applicable personnel and a record of the tests kept. The applicable personnel will maintain the record of the tests and provide to BIG Construction upon request.

Electrical Equipment & Panels

- Breakers and equipment shall be properly labeled
- No knockouts missing, or knockouts are covered with approved material/cover
- Inner panel is in place and all screws securing the panel are in place
- Live circuits are properly guarded
- Electrical panel doors shall be kept shut or access to panels is limited to applicable trades
- Clearance around panels shall be at least 36 inches
- Temporary wire shall be elevated and protected 7' above the floor

Lockout/Tagout

- Whenever work is to be done on a piece of equipment, including building equipment and/or the affected party's equipment, OSHA's Controlled Hazardous Energy standard must be followed
- Each trade whose work involves working on live equipment shall submit a plan in accordance with NFPA 70E or a Lock-out/Tag-out program to BIG Construction upon request
- All employees working on equipment/system locked out have individual lock
- Proper signage
- Lock, tag, test, then work on equipment
- Do not tamper with other employees' locks or tags

Lighting

- Sufficient lighting in all work locations
- Proper lighting for the conditions (i.e. explosion proof, water proof)
- Bulbs covered (e.g. cages)
- Bulbs replaced when broken
- No open sockets
- Temporary wire shall be suspended properly, elevated and protected (7 feet above floor)

Overhead Powerlines Marked

- Plan for de-energizing overhead powerlines, and verifying lines are de-energized and visibly grounded
- Meeting with the utility owner and affected parties to develop a plan of working around overhead powerlines
- Signs posted at all powerline locations that could be affected by project
- Can use signs, cones, beacons on signs for additional visibility
- Marking posted in visible location/manner
- No equipment within a minimum of 10 feet of energized powerlines
- Voltage of powerlines known for clearance requirements

- Spotter as required

TRENCHING & EXCAVATIONS

Utility Locates Complete

- All excavations shall be located primarily by JULIE/DIGGER and a secondary locate will be completed by an outside locating service
- Dig numbers will be supplied to BIG Construction upon request, updated as needed
- Dig numbers refreshed as required
- After locates have been complete, BIG Construction's Safety Director and Superintendent have performed the site walkthrough with the Project Supervisor prior to excavation commencing

Excavation Procedures Implemeneted

- Hand-digging around existing utilities and utility marks (within 3 feet)
- Each trade engaged in excavation work must have a person designated as the "Competent Person" (as defined by OSHA) to enforce compliance with the OSHA Standards for Excavations
- Inspections are required prior to the start of work, as conditions change, after a rainstorm, or other hazard-increasing occurrence
- Prior to anyone entering a trench, the Competent Person will classify the soil utilizing, at a minimum, one visual and one manual analysis (e.g. thumb test, thread test, etc.)
- Proper access to trench (via ladder, ramp, etc.) once the depth reaches 4' or greater
- There shall be no more than 25' of lateral distance between the access/egress point
- Spoils, material and/or equipment shall be kept, at a minimum, 2' away from the trench
- Soil clumps kept clear to protect employees from struck-by hazards

Trench Protection in Place

- No employee shall enter a trench unless it has been determined by the Competent Person to be properly excavated and protected against collapse
- Once the trench reaches a depth of 5' or greater, or a potential for cave-in exists, trench protection must be provided and maintained while employees are in the trench (e.g. sloping, benching, shielding, etc.)
- Trench boxes shall not be greater than 2' off of the bottom of the trench
- Trench boxes shall be kept at least 18" above grade when used in conjunction with sloping
- Trench boxes shall be flush with ground level or above
- Trenching operations being performed in public shall be properly isolated, fenced off, plated or backfilled to prevent public access to the trench

CRANES/RIGGING

Crane Inspections (annual/monthly/daily)

- Cranes operating on BIG Construction Projects shall have all applicable inspections (e.g. annual, monthly, etc.) and copies made available to the BIG Construction Project Team
- Annual inspections shall accompany equipment onsite
- Monthly inspections shall be completed by the operator and copies made available to the BIG Construction Project Team, upon request
- Post-assembly inspection shall be done by a qualified person

Crane Set-up (swing radius, overhead, ground conditions)

- The swing radius of the crane shall be protected in such a manner as to prevent someone from being exposed to the struck-by hazard created by the rotating body of the crane (e.g. caution tape, cones, barricades, etc.)

- Location of the crane shall be reviewed and verified by the BIG Construction Project Team prior to the crane coming onsite
- Overhead powerlines should be marked both inside, and outside the equipment.
- Adequate distance from overhead powerlines shall be maintained at all times during the crane operation
- Underground utilities, conduits, tunnels and the material that the crane will set-up on shall be taken into consideration with regards to weight support and integrity
- Crane shall be set on firm, level ground

Qualifications (operator, rigger, signal person)

- Operator qualifications current and copies available on site
- Assembly / Disassembly Director identified
- Rigging and signal qualifications current and copies available on site

Lifting Procedure (Critical Lifts)

- Critical lifts shall be pre-planned and documented using the "Critical Lift Planning Sheet" form. Lift plans shall be submitted to BIG Construction prior to the start of work.
- Non-conductive taglines shall be used unless situation creates a greater hazard
- Cell phone use is prohibited while operating a crane
- Multiple lifts must be done according to OSHA and coordinated with the BIG Construction Project Team. The maximum number of allowed pieces per lift is three (i.e. steel erection multiple lift rigging)

Signaling Procedures

- When cranes are being used, a positive form of signaling shall be used to direct the crane (e.g. hand signals, two-way radios, Nextel's (back-up/last resort), hard-line intercom, etc.)
- Only one person shall be designated to signal the crane at a time
- Signals posted as needed (e.g. crane, trailer)

Slings & Hardware (safety latches, shackles, etc.)

- Slings and hardware being used to lift objects shall be inspected prior to each use by a competent person
- Slings and hardware shall be used in the manner for which they were designed
- Excessively kinked or damaged slings or hardware shall be taken out of service
- Slings and hardware shall be rated to support the intended load
- Slings and hardware shall have tags attached and tags shall be in legible condition
- All hoist hooks must be equipped with the proper safety latch, which must be used correctly
- No makeshift rigging methods are allowed

<u>VEHICLES/EQUIPMENT</u>

Aerial Lift Use

- Any employee who is operating or using an aerial lift [scissor or boom] shall be properly trained in the operation, use, and emergency procedures involved with the lift. Documentation shall be made available to BIG Construction upon request
- Equipment shall be inspected prior to each use
- Face machine when getting on and off, no jumping from equipment
- Employees shall be tied off correctly in boom style lifts
- Employees shall ensure that safety chains are correctly used when operating scissor lifts
- Both feet shall remain on platform, using midrails or toprails as "steps" is prohibited

- The rated capacity of the lift shall not be exceeded
- Barricade the swing radius as required

Forklift Use

- All forklift operators must be certified, by their employer, on each machine they operate and possess the necessary certification
- Forklift certification shall be kept current
- Forklifts shall be operated in accordance with the manufacturer's specifications and requirements
- Inspection of machine for defects
- Face machine when getting on and off, no jumping from equipment
- Housekeeping maintained inside of forklift
- Loads secured
- No one walking/working under load
- Forks shall be kept high or low when not loaded to prevent tripping/struck-by hazards
- Re-training required after the following
    - Any incident
    - Operator observed operating unsafely
    - When machines change
    - Every three years at a minimum

Seat Belts Worn

- Any vehicle equipped with Roll Over Protective Structures (ROPS) shall also be equipped with seat belts
- Personnel shall not be transported on or allowed to ride on equipment not equipped with passenger seatbelts
- Seat belts shall be kept in functioning order
- Seat belts shall be worn when operating any equipment/vehicle equipped with them

Horn/Back-up Alarms/Beacon Lights Functioning

- Horns, brake lights and back-up alarms shall be maintained and functioning while equipment is operating
- Horns and back-up alarms loud enough to be heard over ambient noise
- All vehicles and equipment used on/near road work must be equipped with beacon lights and slow- moving vehicle placards
- Beacon light shall remain functional while vehicle/equipment is operating

<u>TRAFFIC CONTROL/PUBLIC PROTECTION</u>

Flag Person Trained & Equipped

- Flagger(s) has proper training and certification
- Flagger(s) equipped with reflective vest, stop-slow paddle or emergency flag
- Proper signage, cones, and barricades used to control traffic from all applicable directions

Barricades and Public Protection in Place

- Traffic zones set up per MUTCD requirements, owner requirements, etc.
- Traffic zones set up with the flow of traffic, removed against the flow of traffic
- Signage, catwalks, fencing, mesh, and isolation are properly used to protect the public

STEEL ERECTION

Steel Erection & Decking Procedures

- A written "site-specific steel erection plan" (to include fall protection) shall be submitted to BIG Construction prior to the start of work. When special or unusual hazards will be encountered (i.e. work over existing structures, near utilities or water), the affected personnel will clearly address these issues in the "site-specific steel erection plan".
- "Authorization to Proceed with Steel Erection" form shall be completed prior to the work and stored with the corresponding photos
- The erector is in compliance with their erection plan and policy
- Overhead work signs are in place as required
- All steel shall be connected with a minimum two bolts on each side before being unhooked from the crane
- When making double connections, one bolt shall remain wrench tight to prevent the steel from being displaced, unless an engineered seat or other approved means exists

Employee Training

- All employees performing steel erection shall be trained on:
    - The recognition and identification of fall hazards in the work area
    - The use and operation of protective systems, such as guardrail systems, personal fall-arrest systems, positioning-device systems, fall- restraint systems, safety-net systems, etc.
    - The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used
    - Procedures for protection from falls to lower levels and into holes and openings in walking/working surfaces and walls
    - Working in controlled decking zones (if applicable)
    - Multiple-lift rigging (if applicable)
    - Connecting techniques (if applicable)

FIRE PROTECTION/WELDING & CUTTING

Hot Work Procedure

- Area shall be inspected for combustibles prior to hot work commencing
- At minimum, a 10 pound dry chemical ABC fire extinguisher must be within 20 feet of any burning or welding operation
- This fire extinguisher is provided by the affected personnel performing the work
- A fire watch shall be maintained as directed on the permit

Extinguishers

- Fire extinguishers which are provided by BIG Construction are available for general use. They are generally located at entrances, stair wells, and on each floor
- If a fire extinguisher is used, return it immediately to the project trailer to replace it with a fresh one.
- Do not place material in front of, or block extinguishers from view
- Fire extinguisher certification tags shall be kept up-to-date

Storage Flammable/Combustible Liquids

- Flammable liquids shall be stored and dispensed in accordance with OSHA requirements
- All containers must be FM approved or UL listed. The container must have a self-closing lid and a wire mesh flame arrester. If the can is damaged, it is to be removed from site
- In accordance with the Hazard Communication Standard, containers will be clearly marked showing the contents, hazard level and any special use or handling requirements

- Flammable liquids will not be stored within enclosed structures, i.e.; buildings under construction, storage trailers; tool sheds, in stairways or building exits/entrances
- Observe all NO SMOKING or NO OPEN FLAME signs, smoking near flammables/combustibles is prohibited
- Exterior storage of flammable/combustible liquids shall be kept a minimum of 20' from the building

Storage of Compressed Gases

- The movement, storage, and use of cylinders shall be done in accordance with OSHA standards
- Compressed gas cylinders secured upright (straps, chains, etc.) when stored
- When being stored, compressed gas cylinders shall have regulators removed and valve caps secured
- When being stored, oxygen and gases need to be separated by either a 5' high, 30 min. rated fire barrier or 20' apart

Welding and Cutting Equipment

- All personnel using gas welding or burning equipment will be fully trained in the use and maintenance of the equipment
- Welding leads shall not have any damage within 10 ft of the electrode

MISCELLANEOUS

General Comments

- Used for other general comments relevant to the project
- Example: "Overall good usage of PPE observed by all personnel during the walkthrough"

Respirable Crystalline Silica Policy

PURPOSE

The purpose of this policy is to provide BIG Construction employees with summarized information and guidelines for the protection of subcontracted employees against hazardous occupational exposures to respirable crystalline silica in the construction industry. This program has been developed in accordance with the requirements contained in the Occupational Safety and Health Administration's (OSHA) Respirable Crystalline Silica standard (29 CFR 1926.1153).

RESPONSIBILITIES

PROJECT TEAM

- Direct any respirable crystalline silica related questions or concerns to your Superintendent.

GENERAL REQUIREMENTS

DEFINITIONS

- Action level means a concentration of airborne respirable crystalline silica of 25 µg/m^3 calculated as an 8-hour TWA.

- Competent Person means an individual who is capable of identifying existing and foreseeable respirable crystalline silica hazards in the workplace and who has authorization to take prompt corrective measures to eliminate or minimize them. The competent person must have the knowledge and ability necessary to implement the written exposure control plan required under the standard.

- Employee exposure means the exposure to airborne respirable crystalline silica that would occur if the employee were not using a respirator.

- Objective data means information, such as air monitoring data from industry-wide surveys or calculations based on the composition of a substance, demonstrating employee exposure to respirable crystalline silica associated with a particular product or material or a specific process, task, or activity. The data must reflect workplace conditions closely resembling or with a higher exposure potential than the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

- Respirable crystalline silica means quartz, cristobalite, and/or tridymite contained in airborne particles that are determined to be respirable by a sampling device designed to meet the characteristics for respirable-particle size-selective samplers specified in the International Organization for Standardization (ISO) 7708:1995: Air Quality-Particle Size Fraction Definitions for Health-Related Sampling.

GENERAL REQUIREMENTS

The general requirements listed below apply to all subcontractors who will potentially expose one or more employees to airborne respirable crystalline silica while performing work on the project site, except where employee exposure will remain below OSHA's Action Level:

1. Written Exposure Control Plan (ECP) – Establish and implement a site specific written ECP that identifies tasks that involve exposure and methods used to protect workers, including procedures to restrict access to work areas where high exposures may occur. *Note: a sample "Exposure Control Plan" is attached with this section.*

2. Competent Person – Designate a competent person to implement the written exposure control plan.

3. Housekeeping – Restrict housekeeping practices that expose workers to silica where feasible alternatives are available.

4. Medical Surveillance – Offer medical exams, including chest X-rays and lung function tests, every three years for workers who are required by OSHA's standard to wear a respirator f o r 30 or more days per year.

5. Training – Train workers on work operations that result in silica exposure and ways to limit exposure.

6. Records – Keep records of workers' silica exposure sampling data and medical exams.

EXPOSURE CONTROL METHODS

Additionally, beyond the above listed general requirements, subcontractors must then choose at least one of two exposure control methods. They can choose to fully comply with "Table 1" or they can implement "Alternative Exposure Control Methods". Requirements for each option are summarized below:

Option 1 = Complying with "Table 1"

OSHA has published a listing of eighteen (18) common construction industry tasks and pieces of equipment that are known to generate large quantities of dust (potentially respirable crystalline silica). This listing is referred to as "Table 1". *Note: A copy of Table 1 is attached to this section.*

To the right of each of the listed items in Table 1 are two columns. One column describes mandatory "Engineering and work practice control methods" and the other is "Required respiratory protection and minimum assigned protection factor (APF)", for those tasks which require the usage of respiratory protection. Depending on the listed item and how many hours per shift the employee(s) will be exposed dictates two things: whether respiratory protection is required and if so, what level of respiratory protection is needed.

All respirators are given an "Assigned Protection Factor" (APF) by OSHA. Below is a list of common respirators used in construction and their respective APF?

Type of Respirator	Assigned Protection Factor (APF) / Range
NIOSH N95 Filtering Facepiece	10
Half Mask Air-Purifying Respirator	10
Full Face Air-Purifying Respirator	50
Powered Air-Purifying Respirator	25 – 1,000 (depending on type)

Note: For a complete listing of APF ratings, see OSHA standard: 29 CFR 1910.134(d)(3)(i)(A)

Those subcontractors who elect to follow Table 1 must do so in a manner whereby they fully comply with all engineering controls, work practice controls and respiratory protection measures listed in Table 1, for each applicable task or equipment.

Option 2 = Alternative Exposure Control Methods

For those employers who, for whatever reason, are unable to fully comply with or their specific tasks or equipment used is not listed in Table 1, there is an alternative path to compliance. The following items are mandatory if Table 1 control measures are not followed:

1. The employer shall ensure that no employee is exposed to an airborne concentration of respirable crystalline silica more than 50 µg/m^3 of air, calculated as an 8-hour Time Weighted Average (TWA), which is OSHA's Permissible Exposure Limit ("PEL").

2. The employer shall assess the exposure of each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level, by utilizing one of the two below listed options:

   a. *Performance Option*: The employer must assess the 8-hour TWA exposure for each employee based on any combination of air monitoring data or objective data sufficient to accurately characterize employee exposures to respirable crystalline silica.

   b. *Scheduled Monitoring Option:* The employer must perform industrial hygiene monitoring to assess the 8-hour TWA exposure for each employee based on one or more personal breathing zone air samples that reflect the exposures of employees on each shift, for each job classification, in each work area. Where several employees perform the same tasks on the same shift and in the same work area, the employer may sample a representative fraction of these employees to meet this requirement. In representative sampling, the employer shall sample the employee(s) who are expected to have the highest exposure to respirable crystalline silica.

The table below summarizes sampling frequency and possible employer actions based upon the results:

Monitoring Type	Monitoring Results	Employer Action(s)
Initial	Initial monitoring indicates employee(s) are below action	Employer may discontinue
Most Recent Exposure	Employee(s) exposure is at or above action level, but below	Repeat monitoring within 6 months
Most Recent Exposure	Employee(s) exposure is above the PEL	Repeat monitoring within 3 months
Most Recent (noninitial) Exposure	Employee(s) are below the action level	Repeat monitoring within 6 months, until two consecutive measurements, taken 7 or more days apart, are below the action level; employer may then discontinue monitoring

The employer must reassess exposures whenever a change in the production, process, control equipment, personnel, or work practices may reasonably be expected to result in new or additional exposures at or above the action level, or when the employer has any reason to believe that new or additional exposures at or above the action level have occurred.

RESPIRATORY PROTECTION

It should be noted that any respiratory protection equipment worn by subcontracted employees to comply with OSHA's silica standard, must be done so in accordance with OSHA's existing Respiratory Protection standard found at 29 CFR 1910.134. This would include but not be limited to the following requirements:

1. A written Respiratory Protection Program
2. A designated Program Administrator
3. Proper respirator selection, use, cleaning and storage instructions
4. Employee fit testing; and
5. Employee training

SUBCONTRACTOR DOCUMENTATION

BIG Construction requires each subcontractor, who is affected by this program, to have the following documents available upon request:

1. Site specific written Silica Exposure Control Plan
2. Written document identifying Silica Competent Person(s)

For those subcontractors whose workers will utilize respiratory protection to comply with OSHA's silica standard, the additional items available upon request:

1. Written Respiratory Protection Program
2. Documentation of most recent employee fit-testing for type of respirator(s) to be used

To ensure full compliance with OSHA's silica standard and/or this written program, additional subcontractor information may be requested by BIG Construction including but not limited to:

1. Objective or Scheduled air sampling data
2. Proof of medical surveillance exams
3. Exposed employee training records (silica)
4. Employee training records (respiratory protection user)
5. Silica Competent Person training records

Rigging and Material Handling Policy

PURPOSE

This section will define the necessary precautions and/or procedures to maintain adequate rigging and material handling methods. This policy has been designed to provide guidance for complying with the applicable OSHA standard 29 CFR 1926.250 (Subpart H – Materials Handling, Storage, Use and Disposal), ASME standards and manufacturer requirements.

RESPONSIBILITIES

PROJECT TEAM

- Provide BIG Construction employees with information via site orientation, pre-construction meetings, etc. in order to maintain adequate material handling methods.
- Direct any material handling related questions or concerns to BIG Construction's Safety Department.

GENERAL REQUIREMENTS

MATERIAL HANDLING

- BIG Construction Employee/competent person should plan all lifts to address the following concerns (where applicable):
    - Clear path of travel
    - Trip and pinch point hazards identified and addressed
    - Elevation changes
- Heavy, awkward and/or bulky items should be lifted/carried with the assistance of other employees or through the use of appropriate mechanical lifting devices.
- The use of mechanical lifting devices should be considered when faced with repetitive lifts/carriers.
- Gloves and other personal protective equipment must be worn to address the hazards created by material handling.
- Employees tasked with lifting/carrying of materials should employ the Back Safety and Proper Lifting Techniques described in Ergonomics Policy.

Mechanical Lifting/Carrying Devices

- Mechanical lifting/carrying devices include (but are not limited to):
    - Hand trucks/Pallet jacks
    - Wheelbarrows
    - Dollies
    - Forklifts
    - o Gondola or Carts
- Equipment used for lifting or moving material should never be used beyond its rated capacity or its intended purpose.
- Self-propelled construction equipment shall be maintained, equipped and operated in accordance with all OSHA and manufacturers' requirements. Material handling equipment [as defined by OSHA] shall be equipped with Roll-Over Protective Structures (ROPS) and seat belts (where applicable).
- Unless specifically designed for that purpose, employees must not ride on mechanical equipment.
- Certain equipment, such as Powered Industrial Trucks (PIT), require training before use. Questions regarding PIT training should be directed to BIG Construction's Safety Department.

- Equipment is to be inspected prior to use for safe operation. Deficiencies that impact the safe operation of the equipment must be repaired prior to operating the equipment.

Balancing Loads

- The balancing of loads to prevent tipping, unexpected shifts, etc. is the responsibility of the personnel performing the work.
- Multiple lifts of structural members must be done in accordance with OSHA standards. The maximum number of allowed pieces per lift is three.
- Reeving slings is not permitted.
- Devices used to carry or aid in moving materials must be designed for said purpose, have the appropriate capacity to support the load and be in safe working condition.

RIGGING

Inspections

- Rigging equipment for all types of material handling should be inspected by a competent person prior to each use and as necessary during its use for damage, cuts, frays, "wear-and-tear", etc.
    - Defective rigging equipment should be removed from service immediately and marked as defective by the qualified rigger conducting the inspection.
    - Based on the operation (i.e. cranes), the individual inspecting the rigging must meet the definition of a "qualified rigger".

General Requirements

- Rigging equipment shall be used for its designed / intended purpose only. No makeshift rigging methods are allowed.
- Loads shall be controlled with a tag-line, unless the use of the tagline would pose a greater hazard.
- Rigging equipment, when not in use, shall be stored correctly (i.e. out of the sun, away from the work areas).
- Special/custom design grabs, hooks, clamps or other lifting accessories must be marked to indicate the safe working loads.

Capacities

- Rigging equipment should never be overloaded beyond the recommended safe working capacity, as identified by the rigging identification tags and/or set standards for that rigging.
    - Each piece of rigging equipment must have an identification tag stating its capacities.
    - Rigging equipment should be removed from service immediately and marked as defective by the qualified rigger if identification/capacity tags are missing.
    - Lifting beams and similar devices must be designed by a registered professional engineer with the capacity identified on the device.

Alloy Steel Chains

- Rated capacities (working load limits) for alloy steel chain slings must conform to the applicable standards.
- Sling attachments must have a rated capacity at least equal to that of the chain.
- Makeshift fasteners of any kind must not be used.
- Each party is responsible for the maintenance and inspection of their equipment, including any records required by the applicable standards.

Wire Rope

- Rated capacities (working load limits) for wire ropes shall conform to the applicable standards and/or working load limits recommended by the manufacturer.
- Protruding ends of strands in splices on the slings and bridles must be covered.
- Wire rope must not be secured by knots (except on haul back lines on scrapers).
- Except for eye splices in the ends of wires and for endless rope slings, each wire rope used in hoisting or lowering or in pulling loads, should consist of one continuous piece without knot or splice.
- Eyes in wire rope bridles, slings or bull wires should not be formed by wire rope clips or knots.
- Wire rope should not be used if there are 3 or more broken wires in one strand or 6 or more wires in one rope lay or if the rope shows other signs of excessive wear, corrosion defect, birdcaging or kinks (or as defined by established manufacturer criteria).
- When U-bolt wire rope clips are used to form eyes, the manufacturer specifications should be used to determine the number, spacing and installation of clips. Slings used for lifting, hoisting or pulling are not to be constructed using wire rope clips.
- Slings should not be kinked or shortened with knots or bolts or other makeshift devices.
- Slings used in a basket hitch should have the loads balanced to prevent slippage.
- Slings should be padded or protected from the sharp edges of their loads.
- Shock loading is prohibited.
- A sling should not be pulled from under a load when the load is resting on the sling.

Synthetic Webbing (Nylon, Polyester, Polypropylene)

- Each synthetic web sling must be marked or coded to show:
    - The name or trademark of the manufacturer
    - Rated capacities for the type of hitch
    - Type of material
    - The posted capacity, which shall not be exceeded
- All fittings used to connect web slings must be:
    - Of a minimum breaking strength equal to that of the sling
    - Free of any sharp edges that could in any way damage the webbing
- Nylon, polyester or polypropylene web slings should not be exposed to edges which will cut or damage the sling. Inspecting these slings for friction burns, abrasions or any other perceived defects is the responsibility of the qualified rigger.
- Synthetic web slings should not be used where fumes, vapors, sprays, mists or liquids of acids phonemics or caustics are present.
- Synthetic web slings should be immediately removed from service if any of the following conditions are present:
    - Acid or caustic burns
    - Melting or charring
    - Snags, punctures, tears or cuts
    - Broken or worn stitches
    - Distortion of fittings
    - Red fibers that have been released from inside the sling (when applicable)
- Synthetic web slings of polyester and nylon should not be used at temperatures in excess of 180 degrees F. (82.2 degrees C.). Polypropylene web slings should not be used at temperatures in excess of 200 degrees F. (93.33 degrees C.).

Shackles, Hooks and Lifting Accessories

- Rated capacities (working load limits) for shackles and hooks shall conform to the applicable standards and/or working load limits recommended by the manufacturer.

- Hooks, shackles and lifting accessories must be inspected prior to use. Where applicable, inspection records and test results are the responsibility of the party performing the related work.
- All hoist hooks used for rigging materials must be equipped with the proper safety latch for that hook. Defective safety latches must be removed from service immediately.
- Shackles, hooks and lifting accessories may not be modified from the manufacturers design and construction.

Managing Suspended Loads

- Hoisting path safety considerations are the responsibility of the personnel performing the work. The hoisting past should be designed to avoid exposure to suspended loads by employees. Consideration points include but are not limited to protecting other workers and the general public, preventing adjacent property damage, etc.
- When overhead utilities are present, sufficient clearance distances must be maintained in accordance with OSHA.

HOUSEKEEPING AND STORAGE

- Daily and continual clean-up is required in all work areas. Each individual is responsible for keeping the site neat and clean.
    - Effective housekeeping should not be an assigned task, it is considered to be a part of each employee's responsibility. Keeping the work site clean not only produces a safer job site, but a better place to come to work each day. It is each employee's responsibility to keep their work area in order, cleaning up during and after work is completed.
- Aisles and passageways shall be kept clear and maintained to provide for free and safe movement of material handling equipment and employees.
- Each party is responsible for the housekeeping and storage that results from their work.
- Stacked materials are to be kept neat and orderly. Materials must be stacked in a manner to prevent tipping, falling, shifting or rolling.
- Non-compatible materials must be segregated while in storage.
- Cylindrical materials, unless racked, should be stacked and blocked so as to prevent rolling or shifting.

DISPOSAL OF WASTE MATERIALS

- All scrap, waste material and rubbish shall be removed from the immediate work area as soon as reasonably possible by the applicable party.
- Whenever materials are dropped more than 20 feet to any point lying outside the exterior walls of the building, an enclosed chute must be used.
- Dropping debris through holes in the floor without the use of chutes requires:
    - Barricades not less than 42 inches high and not less than 6 feet back from the unprotected edge of the opening above.
    - Warning signs posted at each affected level.
    - Removal in the lower areas is not permitted until debris handling ceases above.
- Disposal procedures will comply with the applicable material's MSDS information and applicable municipal codes.

Scaffold and Aerial Lift Policy

PURPOSE

The following applies to scaffolds used on BIG Construction jobsites. This policy has been designed to provide BIG Construction project teams with guidance and to conform to the applicable OSHA standard 29 CFR 1926.450 (Subpart L – Scaffolds) and local codes (e.g. City of Chicago Scaffold Ordinance).

GENERAL REQUIREMENTS

RESPONSIBILITIES

City of Chicago Scaffold Ordinance

- The City of Chicago Scaffold Ordinance currently explains:
    - If the building is either:
        - In the central business district and over 40 feet above grade or
        - In the broader city of Chicago and over 80 feet above grade, a building owner must obtain a scaffolding permit before engaging in scaffolding work.
    - This permit is only valid if two other requirements are met:
        1. Each person that will erect, maintain, and/or use the scaffold must complete a course in scaffold safety approved by the building commissioner.
        2. The operators (defined as the parties erecting, maintaining, or using scaffolding) must obtain at least $1,000,000 of liability insurance.
    - Copies of proof of course completion and insurance requirements must be maintained on site.
    - Training certification is valid for a term of four years at such time the training must be renewed.
- Questions regarding compliance with the Chicago Ordinance should be directed to the BIG Construction Safety Department.

Qualified Persons

- Any scaffold systems used on a BIG Construction project must be designed by a qualified person in accordance with the Occupational Safety and Health Administration (OSHA) 29 CFR 1926.451 "General Requirements for Scaffolds" and 29 CFR 1926.452 "Additional Requirements Applicable to Specific Types of Scaffolds".

Competent Persons

- The Competent Person must:
    - Have the proper training required for supervision over the applicable scaffold system(s).
    - Supervise the erection, moving, altering or dismantling of the scaffold system.
    - Inspect the applicable scaffold before each work shift and after any occurrence that could affect the scaffold's structural integrity. The Competent Person will authorize the repair of any observed defects as soon as reasonably possible.
    - Determine if it is safe for employees to work from a scaffold during adverse weather conditions that include but are not limited to storms, high winds, etc.
    - Be able to address scaffold-related concerns that may develop during the course of work.
    - Provide (or confirm) his or her affected employees with the training necessary to perform their scaffold-related work safely.
    - Ensure that areas below the scaffold are adequately protected from falling debris/materials (e.g. guarding, signage, barricades, debris nets, etc.).

- Prior to installing tarps, winter protection or other types of materials that would increase the load applied to a scaffold, a qualified person must determine if the scaffold has the capacity to support said loads. It is the qualified person's responsibility to make this determination or recommend additional measures that must be implemented prior to the modification. Contact the manufacturer representative to address these specific loading issues or concerns.

Scaffold Erectors, Dismantlers and Other Users

- Employees involved in the erecting, disassembling, moving operating, repairing, maintaining or inspecting any scaffold system are responsible for complying with these guidelines and the applicable standards/local codes. These individuals must be trained to recognize the hazards with the associated work and the procedures required to address said hazards.

ENVIRONMENT

Ground Conditions

- Determination of ground conditions with respect to providing adequate support for the scaffold system in use is the responsibility of the applicable party (e.g. Competent Person).
- All scaffolds must be provided with the proper support (i.e. wheels, base plates, sills, etc.) as recommended by the manufacturer.
- Sills must be solid, level and in full contact with the supporting surface. Base plates or screwjacks shall be in firm contact with both the sills and the legs of the scaffold.
- Unstable objects such as brick or block cannot be used as sills, or to shore any uneven surfaces.
- The Competent Person will monitor conditions, including ensuring that the scaffold remains reasonably plumb and level.
- When applicable, the area below the scaffold must be barricaded to limit access and/or signage posted to warn of the overhead hazard.

Power Lines

- Scaffolds assembled in proximity to Overhead Power Lines will maintain the proper clearance (as described in the BIG Construction Utility Locate Policy under Overhead Powerlines Procedure).

SCAFFOLD COMPONENTS

Capacity/Loads

- Scaffolds and their components must support without failure its own weight and at least four times the maximum intended load applied or transmitted to the scaffold.
- Suspension rope and the related hardware must support without failure at least six times the maximum intended load applied or transmitted to that rope or hardware.
- Stall loads of any scaffold hoist shall not exceed 3 times the rated load.

Platforms

- Platforms shall be entirely planked/decked with space not more than one inch wide between the platforms and uprights.
- The platform shall not deflect more than 1/60 the span when loaded.
- Platforms shall be kept clear of debris or other obstructions that may hinder the working clearance of the platform.
- Wood planks must be graded for scaffold use. As part of the inspection process, the Competent Person will ensure that planks are in good working order, straight grained and free from cuts, splits and holes.
- Platforms and walkways shall be at least 18" wide.

- Where platforms are overlapped to create a long platform, the overlap shall occur only over supports, and shall not be less than 12" unless the platforms are nailed.
- Each end of the platform unless cleated or otherwise restrained by hooks or equivalent means, shall extend over the centerline at least six inches.
- A platform greater than 10' in length shall not extend over its support more than 18", unless it is designed to prevent tipping and/or guardrails are in place to block employee access to the cantilevered end.
- Wood platforms shall not be covered with opaque surfaces (except on the edges for identification). Preservative coatings may be provided so long as they do not obscure the top and bottom surfaces.
- Employees are prohibited from working on scaffolds covered with snow, ice or slippery materials unless they are removing the slippery conditions.

Fall Protection

- Fall protection is required when erecting, moving or dismantling scaffolds that are higher than 6'. If the Competent Person deems that fall protection is not feasible or would pose a greater hazard, they shall submit their justification in writing for approval by BIG Construction. If an alternative method is used, that plan shall also be submitted for approval.
- Hallway/Narrow Frame (Baker scaffolds) with a working deck above 6', shall have
  - Fall protection,
  - Outriggers erected,
  - Wheels locked when occupied, and
  - Proper access.
- Fall Protection is not required on the working side (front end) of the scaffold when the working side platforms are less than 14" from the face of the work (18" from the face of the work during plastering or lathing).
- With respect to fall protection, cross braces that meet the applicable height requirements can be used as either the midrail or toprail, but not both.

Access

- Access shall be provided when scaffold platforms are more than 24 inches above or below the point of access. Types of access can include but are not limited to:
  - Portable ladders (e.g. extension ladders that extend 3' above the platform),
  - Hook-on/attachable ladders,
  - Integral, prefabricated frames (rung spacing is 16.75" or less),
  - Stairways,
  - Stair towers, and
  - Ramps/walkways.

<u>SCAFFOLD TYPES</u>

Supported Scaffolds

- Scaffolds with a height-to-base width ratio of more than 4 to 1 shall be restrained from tipping by guying, tying, or bracing (as determined necessary by the manufacturer and Competent Person).

Scaffold and Aerial Lift Policy

Mobile Scaffolds

- Casters and wheels shall be locked to prevent movement while the scaffold is occupied.
- Manual force used to move the scaffold shall be applied as close to the base as possible, but no more than 5 feet above the supports.
- Employees shall not be allowed to ride on scaffolds unless the following conditions exist:
    - Before a scaffold is moved, employees on the scaffold shall be made aware of the move. The path of movement shall be level and free of pits, holes, debris, etc.
    - The height to base ratio of the scaffold during movement is two to one or less, or the scaffold has been designed for such movement.
    - Outrigger frames, when used, must be installed on both sides of the scaffold.
    - No employee is on any part of the scaffold when extends beyond the wheels / supports.

Stilts

All employees using stilts shall:

- Wear the stilts on surfaces that are flat and free of tripping hazards such as debris, holes, etc.
- Properly maintain the stilts as recommended by the manufacturer. Any permanent alterations to the stilts must be approved by the respective manufacturer.
- When stilts are used adjacent to a guardrail, an adequate form of fall protection will be provided by the applicable party (e.g. guardrail height increased by the same height of the stilts).

Suspended Scaffolds

- Employees on suspended scaffolds (swing stages) shall be equipped with a primary and secondary fall protection system.
- The associated counterweights must be designed for the system and provide enough support for the scaffold components, materials and workers involved.
- The roof must be adequately protected from the feet of the system.
- The swing stage and employee lifelines cannot be tied back to the same anchor.
- Horizontal lifelines need to be protected from wear when run over the edge of a structure.

Aerial Lifts

- Any employee who is operating or using an aerial lift (scissor or boom) shall be properly trained in the operation, use, and emergency procedures involved with the lift.
- Ground conditions shall be evaluated by the competent person to determine the appropriate size lift to be used, so as not to exceed the maximum allowable weight load.
- Aerial lifts shall be inspected prior to each use. Scaffold and Aerial Lift Daily Inspection
- Employees shall be tied off only to manufacturer approved tie off points when in articulating boom lifts.
- Lift controls shall be tested daily prior to use. All aerial lifts must be accompanied by the applicable user's manual. Manuals that are missing must be reported to a supervisor immediately.
- Employees shall stand firmly on the floor of the basket and shall not sit or climb on the edge of the basket or use planks, ladders, etc. for a heightened work position.
    - For additional guidance with respect to overhead access issues with aerial lifts.
- Aerial lift limits shall not be exceeded.
- Aerial lifts shall not be moved when they are elevated in a working position beyond manufacturers' parameters.
- Aerial lifts shall not be operated at wind speeds in excess of the manufacturers' parameters.
- When in use, scissor lift guardrails must remain fully enclosed (e.g. midrail gate must be chained or the entry gate must be fully closed).
- Aerial lifts with a potential swing radius must utilize a form of swing radius protection

Steel Erection Policy

PURPOSE

This policy will define the procedures and precautions necessary when performing any steel erection or placement work. This policy has been designed to provide information and conform to the applicable OSHA standard 29 CFR 1926.750 (Subpart R – Steel Erection).

RESPONSIBILITIES

PROJECT TEAM

- Provide subcontractor employees with pertinent information via site orientation, pre-construction meetings, etc.
- Coordinate suitable site conditions for steel erection to begin.

GENERAL REQUIREMENTS

STEEL ERECTION ACTIVITIES

- Steel Erection activities includes setting, detailing, hoisting, laying out, connecting, welding, burning, guying, bracing, bolting, plumbing and rigging structural steel, steel joists and metal buildings; installing metal decking, curtain walls, window walls, siding systems, miscellaneous metals, ornamental iron and similar materials; and moving point-to-point while performing these activities. In addition, all activities as identified in the 29 CFR 1926 Subpart R scope are included in this policy.

PRE-MOBILIZATION ACTIVITY

When BIG Construction is considered the Controlling Contractor as outlined by 29 CFR 1926, and there are prerequisites that have to be completed before erection activities start.

- A Pre-construction meeting will be conducted with the applicable parties (e.g. steel fabricator, steel erector, and decking installer].
    - At this meeting, discuss erection sequence, logistics, site access, crane location[s], hoisting procedures, material storage and staging areas, decking operations.

1. Concrete strength.
The concrete on which the columns will be set has reached at least 75% of its minimum compressive strength.

2. Anchor bolt modifications
All repairs to anchor bolts must be approved by the Structural Engineer of Record. If there is a repair to an anchor bolt, the steel fabricator/erector will be notified, and Structural Engineer report transmitted.

3. Each column has a minimum of four anchor bolts.
Each structural column is to have a minimum of four anchor bolts. If a condition is non-compliant, the work will not proceed without resolution from the structural engineer of record.

4. Adequate access has been provided to the site for the safe delivery and movement of equipment needed. [This does not include roads outside the site].

The controlling contractor will provide adequate access to the project (typically through a subcontractor). This access only pertains to the project site; it does not pertain to the use of city streets and roadways.

5. A firm, properly graded, drained area, readily accessible to work for the storage of material and safe operation of equipment.
The ground around the crane pad and material storage area will be graded and drained. Typically, three-inch rock is used to create this work surface capped with a smaller material. The steel fabricator/erector must notify BIG Construction, in writing, of any areas that are in need or maintenance or repair. Additional requirements for work surface must be provided by the steel fabricator/erector. Subcontractor must notify BIG Construction in writing of issues.

6. BIG Construction's Utility Locate Overhead Powerlines Policy was discussed and a walk through of the project was conducted.
Prior to the commencement of steel erection activities on the project, the BIG Construction project team and the steel fabricator/erector will walk the project to review the site conditions including overhead obstructions (overhead powerlines and other obstructions).

7. Discuss with subcontractor the two-bolt connection requirement. Each connection is to have a minimum of two bolts installed prior to releasing the load from the crane. The competent person shall determine if more than two bolts are necessary.

FALL PROTECTION

- Individuals involved in steel erection activities shall comply with OSHA Safety Requirements 6' Fall Rule. If the steel fabricator/erector's policy is more stringent than OSHA's Fall Protection and Prevention Policy, it is the steel fabricator/erector's sole responsibility to implement these policies and procedures.
- The steel fabricator/erector has the sole responsibility for training employees on the fall protection requirements as it relates to this policy and program.
- Perimeter fall protection will be installed in accordance with 29 CFR 1926 Subpart M.
- Before releasing custody of an entire floor or portion therein to BIG Construction, the fall protection system (guardrail) will be reviewed by BIG Construction and the subcontractor before the turnover release is signed.
- The Floor Turnover Release form is used when a portion or entire floor is being turned over to BIG Construction. Once this form is completed, BIG Construction or the applicable party is now responsible for the fall protection and maintenance of it in the released area. Before signing the release form, it is important that the BIG Construction project team reviews existing fall protection. If problems exist, they must be corrected before taking control of the area.

Subcontractor Site Safety Requirements and Procedures

INTRODUCTION

The enclosed information addresses expectations of Subcontractors, Tier Subcontractors and their invitees (herein called subcontractors) visiting or performing work on BIG Construction projects.

Each subcontractor working on BIG Construction projects is obligated to comply with all Federal, State and Local safety requirements, Site Specific Safety Programs, and any Owner Safety Requirements (herein after called safety requirements). These safety requirements constitute the minimum level of performance expected from each employer and its employees or their subcontractors, or agents. In addition, subcontractors are responsible for adherence to site-specific safety requirements defined by the project safety requirements. All subcontractors shall adhere to these requirements for the performance of their work on BIG Construction projects designed to promote the project's safe completion.

SUBCONTRACTOR COMPLIANCE

In accordance with the OSHA requirements, each subcontractor shall protect the employment and places of employment of each of its employees engaged in construction work by complying with the appropriate standards prescribed in the applicable standards. Subcontractors shall hold each of their agents, vendors, tier subcontractors and suppliers responsible for compliance with these safety requirements. Subcontractors shall include these safety requirements in contracts with all tier subcontractors, vendors and suppliers. Entry onto project, property, or the job site constitutes acknowledgement by the subcontractor, subcontractor employees or invitee of their obligation to adhere to these safety requirements.

Each subcontractor shall establish and maintain an effective safety and health program that addresses the requirements herein. The subcontractor shall be solely responsible for implementing the safety program and shall have sole responsibility for monitoring the work of its employees, subcontractors, agents, vendors and suppliers to ensure compliance.

VIOLATION OF SAFETY REQUIREMENTS

If a subcontractor or invitee is found non-compliant to any of the safety requirements, the subcontractor and employee(s) may be subject to the following (one or more):

- At a minimum, the resulting action may result in a written warning;
- Individual(s) may be removed from the project for a specified duration;
- Individual(s) may be removed from project and/or future BIG Construction projects;
- Re-training for individual(s), crew and /or foreman;
- A meeting will be conducted with the subcontractor's supervisor and management, and the BIG Construction Project Team. The meeting should conclude in a documented agreement outlining the subcontractor's intended corrective actions and timeframe for implementation;
- Removal of unsafe condition by using other work forces, the cost of which will be reimbursed through back charges or provisions of the contract;
- BIG Construction may exercise its option to terminate all or part of the contract with the subcontractor for inadequate safety performance, or failure to fulfill any of the safety requirements of the contract;
- Any resulting damages (including damage for delay) will be paid for in accordance with the subcontract.

All costs and expenses paid or incurred by a subcontractor in the implementation and administration of the safety requirements shall be paid by said subcontractor.

When violations of the safety requirements are observed, the responsible subcontractor shall be informed orally for immediate correction. It is the sole responsibility of the subcontractor to devise and implement the correction. If BIG Construction deems it is necessary to stop work being performed due to the nature of a violation, work will be halted until the subcontractor corrects the violations. Any costs incurred by the stoppage of work due to the violation will be the sole responsibility of the violating subcontractor.

DESIGNATION OF COMPETENT PERSON

Each subcontractor shall designate a competent person as defined by OSHA to implement the safety requirements. A competent person from each subcontractor must be on site whenever they have employees working on site, and the name of that person shall be submitted on the BIG Construction Daily Report. Each subcontractor is required to maintain this position, and a competent person(s) will remain on-site until the completion of their work. The subcontractor shall not relinquish or defer responsibility for project safety to its own or subcontractor employees at any time under any circumstances.

SUBCONTRACTOR SAFETY REPRESENTATION

The subcontractor's designated Corporate Safety Representative is expected to make at a minimum monthly jobsite visits to audit implementation of the subcontractor's safety and health plan and the safety requirements. This representative will also be required to attend regular on-site safety meetings, as determined by BIG Construction. Additional on-site safety and health staffing will be defined in the individual trade scopes.

OSHA AND STATE AGENCY INSPECTIONS

If after an inspection, a subcontractor receives any citation(s), a copy of all citations shall be immediately provided to BIG Construction.

TRAINING AND MEETING REQUIREMENTS

Subcontractor Kick Off Meeting

Subcontractors shall ensure that their project management and other key personnel, including their Site Supervisor and Safety Representative at a minimum, attend a pre-construction meeting with the BIG Construction project management staff where planning for safe execution of the project will be addressed.

Foreman's Site Requirements Review

The foreman identified by the subcontractor will complete a review of the safety requirements and expectations with a member of the BIG Construction project team. If the subcontractor has additional foreman or changes foreman on the project, these individuals must also complete this review.

Foreman's Meeting

Foreman's meetings will typically be conducted on site. The date and time of these meetings will be determined by the project team. Attendance is expected from each subcontractor unless excused by BIG Construction.

Safety Review

Following an incident or safety issue, BIG Construction may request a meeting be held with the parties involved to discuss the incident or issue in greater detail. Requested subcontractors shall attend and participate in the investigation, discussion, and develop an action plan.

INJURY CARE AND MEDICAL FACILITY

Each subcontractor is responsible to establish a medical facility for use by employees who sustain a work-related injury. The facility to be used shall be communicated to the subcontractor's employees. The subcontractor is responsible for all costs borne out of medical treatment, substance abuse testing and any other associated costs (BIG Construction is not to be charged for any treatment costs including substance abuse testing).

Each subcontractor is to provide an appropriate sized First Aid kit that is maintained and adequately stocked. The location of the kit shall be communicated with the subcontractor's employees. Subcontractors will assure that when required or appropriate, trained first aid personnel are available, certified, and equipped for their responsibilities.

DOCUMENTATION AND REPORTING

Site Specific Safety and Health Plan

Each subcontractor shall establish and submit for review a written Site-Specific Safety and Health Plan that includes details commensurate with the work to be performed. The subcontractor's Site- Specific Safety and Health Plan shall clearly describe the subcontractor's methods for meeting its obligations to provide a safe and healthful work environment, as well as to protect other trades, vendors, visitors and members of the general public from the exposures generated by the subcontractor's work. The subcontractor's Company Safety Manual will not be accepted as a substitution for a Site-Specific Safety and Health Plan. The following will be submitted prior to the subcontractor's mobilization to the project:

- A written Project Site-Specific Safety & Health Plan (hard copy);
- Identify safety roles and responsibilities for subcontractor employees;
- Subcontractor's disciplinary action program;
- Process for managing tier subcontractors;
- Hazard Communication Program, including hard copies of current SDS and table of contents. A project specific SDS file shall be maintained on-site for employee review;
- Specific job hazard identification and worker training (i.e. qualified rigger training);
- Job Hazard Analysis plan;
- Competent person qualifications and training records;
- As a condition of their contract, all Subcontractors shall submit to BIG Construction or designee a Site- Specific Safety Plan within fifteen (15) days after receipt of notice to proceed and prior to start of construction activities.

The subcontractor shall be solely responsible for implementing the Site-Specific Safety and Health Plan as well as other safety requirement

Job Hazard Analysis (JHA)
Detailed JHA's addressing hazards associated with the Subcontractor's scope of work for the day are required of the subcontractor. These procedures will be reviewed with all affected employees prior to starting the work or after modifications to the JHA, by the subcontractor.

Toolbox Talks
Each subcontractor is expected to conduct weekly toolbox safety meetings relevant to the work being performed by their employees.

Safety Inspections
In accordance with OSHA, each subcontractor shall perform frequent and regular safety inspections of their work area(s) by a competent person. Subcontractor supervisors shall take immediate action to correct violations, unsafe practices and unsafe conditions. The subcontractor will be solely responsible to review and monitor the work area or location of all their employees on a regular basis during the performance of work.

Incident Reporting
Subcontractors are responsible to immediately notify BIG Construction of all incidents including personal injuries and illnesses, near hits (defined as an occurrence that has the attributes of an incident yet has no apparent damage to person or property), project property losses or damages, and incidents involving the public or their property.

Each subcontractor is required to investigate all incidents incurred by their employees, or incidents that are the result of their operations. Each subcontractor shall provide to BIG Construction a documented Incident Investigation Report within 24 hours of the occurrence.

BIG Construction may conduct an independent investigation at their own discretion or when they deem it necessary as a supplement to that required of the subcontractor. Upon request, subcontractors involved in the incident shall participate in Incident Review Meetings.

SUBSTANCE ABUSE POLICY
The illegal use or abuse of drugs and or alcohol constitutes a threat to the safety and health of employees and the general public. The Substance Abuse Policy requires employees to report to work fit for duty, and to perform their work, free of detectable levels of drugs, alcohol or other substances, which may affect their ability to work safely. Each subcontractor shall establish and maintain an effective substance abuse program.

All costs associated with any substance abuse testing are the responsibility of the subcontractor.

SPECIFIC REQUIREMENTS

GENERAL SAFETY REQUIREMENTS

- Subcontractors must report to the BIG Construction Project Team any safety concerns, observed conditions or violations of job safety, regardless of whether they are within the observer's BIG Construction or responsibility to correct.
- Subcontractors shall assure that supervisory employees have a working knowledge of applicable safety requirements as they pertain to their areas and encourage all employees to improve their accident prevention awareness.
- Smoking is prohibited at any time on any BIG Construction jobsite.
- Glass bottles or containers are not allowed on site.

HOUSEKEEPING

Each subcontractor shall be responsible for daily and continual clean-up during and upon completion of work activities and shall leave the work areas broom swept. In addition, the following items are required as applicable:

- Subcontractor is responsible to comply with the City of Chicago Housekeeping Ordinance, when applicable.
- Subcontractor is responsible for daily and continual clean-up of their work areas, including dust elimination/minimization during the clean-up process. Subcontractors are responsible for assuring that trash and debris remain out of the work areas.
- Subcontractors shall monitor their work areas daily or more frequently if needed to assure that all debris is removed from the work area to minimize hazards.
- Each subcontractor is responsible to provide resources to move their trash and debris to an area designated by BIG Construction. If debris is not removed on a timely basis, or after appropriate warning, BIG Construction will provide resources to remove the debris and the responsible subcontractor will be responsible for costs incurred.

Effective housekeeping should not be an assigned task, it is considered to be a part of each employee's responsibility. Keeping the work site clean not only produces a safer job site, but a better place to come to work each day. It is each employee's responsibility to keep their work area in order, cleaning-up during and after work is completed.

PERSONAL PROTECTIVE EQUIPMENT

Each subcontractor is solely responsible to supply their employees with the required Personal Protective Equipment.

Eye and Face Protection

- All employees shall wear safety glasses as needed while on the construction site. Minimum eye protection shall include approved safety glasses with side shields which meet the OSHA standards specified in ANSI Z-87.1-1989 (this shall also include prescription eyewear).

Head Protection

- All employees, vendors, delivery personnel and other visitors to the project shall wear hard hats that meet ANSI Z 89.1-1986, 100% of the time while on the construction site (including while

wearing face shields, welding helmets, etc.). Hard hats should be worn per manufacturers direction.

Foot Protection

- All personnel on the construction site shall wear hard-soled work boots. No one is permitted to wear sneakers, tennis shoes or athletic shoes of any type, sandals, high heels or open toed shoes on the construction site.

Respiratory Protection

If respiratory protection is required to protect employees from exposures to airborne contaminants, subcontractors must adhere to the following:

- Compliance with the applicable standards (respiratory, specific contaminants, etc.);
- Annual medical clearance for employee;
- Annual fit-testing for employee;
- Training for employee on respirator;
- Written respiratory protection program;
- Validation of respirator selection based on sampling or historical data.

Hearing Protection

- Hearing protection is required in accordance with OSHA standards.

Clothing

Subcontractor employees must meet the following as it relates to clothing on BIG Construction projects:

- Long pants and shirts that are free of damage, inappropriate wording or symbols and cover the shoulders and mid-section;
- High-visibility material when exposed to vehicles and equipment traffic;
- Flaggers must wear the appropriate reflective vests when flagging traffic;
- Protective clothing as required based on the exposure.

FALL PROTECTION AND ACCESS REQUIREMENTS

As part of the planning process, subcontractors are required to identify the means necessary to safely access the work areas included in their scope of work. These methods, including fall protection measures, should be identified in site specific safety and health plans, Job Hazard Analysis', and other documentation.

Ladders and Stairways

All ladders and stairways shall be inspected, constructed and used in accordance with 29 CFR 1926 Subpart X, applicable ANSI requirements and local codes. In addition, the following items are required as applicable:

- Portable extension, straight and typical step ladders constructed of conductive materials (metal) are not permitted;
- Job-made ladders must meet ANSI standards;
- Each subcontractor shall provide ladder training for all employees using ladders;
- Stairs and platforms must be used to provide access to office, equipment and material storage trailers;
- Stairways must be kept free of flammable materials, stored materials or debris

Scaffolds

All scaffolds shall be erected, used, and dismantled in accordance with 29 CFR 1926 Subpart L and local codes (i.e. City of Chicago Scaffold Ordinance). In addition, the following items are required as applicable:

- Documentation of training is required for the use of any scaffold as determined by the City of Chicago and/or OSHA. This documentation must be submitted to BIG Construction project management upon request.
- The designated competent person must complete the scaffold inspection prior to allowing workers on the scaffold each shift and submit any documentation to BIG Construction at the end of each shift.
- Scaffolds must be erected and used in accordance with manufacturer's specifications and requirements.
- The working level of a scaffold shall be fully decked, or additional fall protection is required.
- Subcontractors using scaffolds shall adequately guard, barricade or protect areas located below the scaffold.

Aerial Lifts

All aerial lifts (scissor or boom) shall be used in accordance with OSHA standards, ANSI requirements and manufacturer recommendations. In addition, the following items are required as applicable:

- Any employee who is operating or using an aerial lift (scissor or boom) shall be properly trained in the operation, use, and emergency procedures involved with the lift. Documentation shall be made available to BIG Construction upon request.
- Employees shall be correctly fall-protected in boom lifts (i.e. fall restraint).
- Employees working in aerial lifts must remain on the platform of the lift in accordance with OSHA requirements and interpretations.

Fall Protection and Prevention

All individuals exposed to fall hazards greater than 6' above a lower level shall be protected by means of fall prevention or fall protection devices. Where fall hazards cannot be eliminated, 100% continuous fall protection for fall hazards greater that six (6') feet shall be implemented.

Subcontractors are solely responsible for determining the methods used for fall protection, installation of methods, inspection and maintenance of methods; and training employees on the fall protection methods. In addition, the following items and scenarios are included as part of this requirement:

- Employees working above a guardrail must utilize fall protection;
- Employees utilizing a ladder in accordance with applicable requirements are not required to maintain additional fall protection;
- Subcontractors involved in roofing operations must determine the appropriate fall protection method for their operation based on feasibility;
- Each Subcontractor shall be responsible for outlining specific means and methods for meeting fall protection requirements in their Job Hazard Analysis. The JHA shall detail in writing when fall protection is required, what equipment and systems will be utilized, the training users of the system have received, and how this protection is to be installed and used. Provisions for prompt rescue shall also be provided.

All other elements of the 29 CFR 1926 Subpart M are applicable to situations requiring fall protection. In addition, the following items are required as applicable:

- When cable is used as the guardrail system, the system will be 1/4" IWRC-galvanized cables (toprail and midrail), with a minimum of two wire rope clamps at each connection point. If mesh is used on this guardrail, a third cable (minimum 1/4" IWRC-galvanized cable) will be installed at the top of slab. The subcontractor will work with BIG Construction to determine the required type of guardrail system to remain on the project upon subcontractor's completion. Tarps and other protective systems are not to be secured to the toprail or midrail cables. If these devices are attached to the bottom cable, the subcontractor is solely responsible for determining if the cable is adequate for supporting the loads imposed by the subcontractor's devices.
- Guardrail cables and guard rail systems are not to be used as attachment points for fall arrest or restraint unless the subcontractor accepts the responsibility for the design, installation, inspection and all other applicable requirements.
- If a subcontractor needs to remove a guardrail, the subcontractor is required to notify BIG Construction. The subcontractor is solely responsible for implementing the temporary measures used to protect their own employees and others working in the surrounding areas. The subcontractor is responsible for strict adherence to the conditions of the permit.
- Subcontractor work that necessitates the use of either "Controlled Access Zones" or a "Fall Protection Plan" are required to submit those plans to BIG Construction prior to beginning work (for recordkeeping purposes). The subcontractor is solely responsible for determining feasibility of fall protection systems and methods.
- When using a monitoring system, the monitor must be readily ID'd, so the monitor can be readily identified.

ELECTRICAL SAFETY

Each subcontractor is responsible for inspecting their hand and power tools and electric cords prior to each use. Damaged equipment shall be removed from service.

Temporary Electric and Lighting:

Installation of temporary electric and lighting must comply with 29 CFR 1926 Subpart K.

- Temporary electric must be protected by a ground fault circuit interrupter (GFCI) and cover plate for both temporary and permanent outlets. The electrical subcontractor responsible for temporary electric panels must post at each panel the name and contact information for the individual identified to address temporary BIG Construction issues.
- GFCI breakers and outlets must be tested prior to in service and periodically by the electrical subcontractor and record of the tests and service maintained. The electrical contractor will maintain the record of the tests and provide to BIG Construction on a bi-weekly basis.
- Open conductors must be protected in conduit, boxes or equivalent when within 8 feet of a walking surface.
- Wire for lighting within stairwells must be protected by conduit or wiring design. Unprotected open conductors are not permitted.
- Temporary lighting must be provided in accordance with OSHA and contract requirements. Any additional lighting (task lighting) required will be provided by each subcontractor.
- Electric cords must be managed to avoid creating a trip hazard or in areas where the cord will be damaged. Suspended cords must be secured with a non-conductive material.
- All live circuit panels must have an OSHA compliant panel cover installed. Energized panels are not to be left unattended or unprotected in accordance with NFPA 70E. Panels that are turned off must be properly locked and tagged.

- Whenever work is to be done on a piece of equipment, including building equipment and or subcontractors' equipment, OSHA's Control of Hazardous Energy standard must be followed. Each contractor whose work required working on energized equipment shall submit a plan in accordance with NFPA 70 E or a Lock-out/Tag-out program to BIG Construction prior to performing work. Work on energized equipment should be done under a lock-out/tag-out control whenever possible.

Work performed in proximity to overhead utilities

Work performed within proximity to overhead powerlines must be completed in accordance with BIG Construction's Utility Locate and Overhead Powerline Policy and Procedures as well as 29 CFR 1926.1400 and 1926.600.

- Prior to the start of, and during the course of any work in proximity to overhead utilities, the subcontractor shall make a thorough survey of the entire work site to determine the type and location of all utilities on the work site. The subcontractor must verify this information with BIG Construction by notifying the Project supervisor and shall coordinate construction work in the vicinity of these utilities with the appropriate utility owner.
- The subcontractor shall make employees aware of any precautions and procedures to be followed while working in the proximity of any utility. Appropriate clearance distances shall be maintained throughout the course of the work. If the subcontractor cannot maintain appropriate clearances, they must contact the involved utility and discuss alternative methods for addressing the utility and associated hazards.
- The subcontractor will be required to investigate any and all contingencies where contacting a utility could adversely affect any operation or render inoperative any protective apparatus in the surrounding area and submit a plan for protection or rerouting of critical systems. This plan shall be turned into BIG Construction prior to performing work.

FIRE PROTECTION AND HOT WORK PROCEDURES

All welding and burning work shall be done in accordance with OSHA standards and industry best practices.

- The movement, storage, and use of cylinders shall be done in accordance with OSHA standards. Compressed gases and flammable liquids will not be stored within enclosed structures (i.e. buildings under construction, storage trailers; tool sheds, in stairways or building exits/entrances).
- All personnel using gas welding or burning equipment will be fully trained in the use and maintenance of the equipment.
- At minimum, a 10-pound dry chemical ABC fire extinguisher must be within 50 feet of any burning or welding operation. Each subcontractor is to provide fire extinguishers appropriate for the work they are performing.
- All containers must be FM approved or UL listed. The container must have a self-closing lid and a wire mesh flame arrester. If the can is damaged, it is to be removed from site.
- In accordance with the Hazard Communication Standard, containers will be clearly marked showing the contents, hazard level and any special use or handling requirements.
- Fire extinguishers which are provided by BIG Construction are available for general use. They are generally located at entrances, stair wells, and on each floor. If a fire extinguisher is used, return it immediately to the project trailer to replace it with a charged extinguisher.

CRANES AND RIGGING

Cranes

All crane and hoisting operations, including rigging, must be completed in accordance with 29 CFR 1926 Subpart CC and Subpart H.

- All lift service cranes shall have anti-two block devices and load moment indicators (LMI) installed and functioning properly at all times during operations.
- Pick and carry operations with rubber-tire mobile cranes is not permitted unless specifically permitted by the crane manufacturer and a Job Hazard Analysis is created and followed by the subcontractor.
- A third party inspection is required for all cranes on an annual basis.
- The subcontractor in charge of the crane shall ensure that the capacity, ground conditions, and all other conditions associated with the crane are acceptable. If the conditions are not acceptable, the subcontractor shall notify BIG Construction in writing their proposal to implement any corrections or modifications necessary.
- The following are additional items regarding crane use:
    - The swing radius of the crane must be barricaded or otherwise guarded;
    - Only one person is to signal the crane operator at a time (hand signals, radio, hard line, etc.);
    - Loads shall be controlled with a non-conductive tag-line, unless the use of the tagline would pose a greater hazard;
    - Cell phone use is prohibited while operating a crane (cell phone or 2-way phone is not permitted for crane signaling);
    - Subcontractor is responsible for providing qualified rigger(s), signal person(s) and crane operator(s).

Rigging and material handling

- Each subcontractor is responsible for complying with rigging requirements set forth by OSHA, ASME and rigging manufacturers'. Rigging equipment should never be used beyond its rated capacity.
- Rigging shall be inspected prior to use and as necessary throughout the course of the day by the subcontractor's Qualified Rigger. If any rigging is found to be damaged, it shall be removed from service immediately.
- Stored materials are to be stacked neat and orderly. Materials must be stacked in a manner to prevent tipping, falling, shifting or rolling and maintain clear paths of travel.

EQUIPMENT REQUIREMENTS

All self-propelled construction equipment shall be maintained, equipped, inspected and operated in accordance with all OSHA and manufacturers' requirements (subcontractor is solely responsible for implementing these provisions).

- Seatbelts must be worn in equipment when required by OSHA, the manufacturer or when the equipment is equipped with a roll-over protective structure (ROPS).
- Cell phone use is prohibited while operating a piece of equipment.
- Personnel shall not be transported or ride on equipment or vehicles that are not equipped with seats for passengers. Riding in the back of pickup trucks or on equipment without the use of a seatbelt is prohibited.
- Bi-directional earthmoving equipment and motor vehicles with an obstructed view to the rear shall be equipped with a functioning warning horn and an automatic back-up alarm. Equipment

working in the street must also be equipped with a functioning beacon light and slow-moving vehicle symbol.

Forklifts

- Only trained and authorized personnel will be allowed to position or operate any type of powered industrial truck (forklift). These individuals shall perform pre-operational inspections prior to each shift. Documentation shall be made available to BIG Construction upon request.
- Forklifts shall be operated in accordance with the manufacturer's specifications and requirements.

STEEL ERECTION

All steel erection activities shall be in compliance with 29 CFR 1926 Subpart R (with the exception of fall protection).

- A written site-specific erection plan (to include fall protection) shall be submitted to BIG Construction prior to the start of work. When special or unusual hazards will be encountered (i.e. work over existing structures, near utilities or water), the subcontractor will clearly address these issues in the site-specific erection safety plan. In addition, the subcontractor should outline provisions for the following:
  - Plan for accessing work including delivery trailers;
  - Plan for securing items overhead;
  - Plan for controlling access into the erection area;
  - Fall protection plan including rescue procedures.
- Multiple lifts of structural members must be done in accordance with Subpart R and crane manufacturer's requirements. The maximum number of allowed pieces per lift is five.
- If work is performed within or adjacent to occupied structures, the subcontractor will be required to make provisions for fire protection, and the safe removal of all welding fumes from the building. The methods shall be submitted to BIG Construction prior to the start of the work and will be the subcontractor's responsibility to implement and manage.

EXCAVATION WORK

All excavation work will conform to the requirements of 29 CFR 1926 Subpart P. A copy of BIG Construction's policy is available upon request.

- No excavation shall commence on site, regardless of size, depth, or equipment used unless the operation has been authorized by BIG Construction.
- Each subcontractor is responsible for one-call notifications, obtaining their own dig authorization number.
- Each subcontractor is responsible for barricading and/or covering any excavation at the end- of-shift, as warranted by the size and exposure of said excavation.
- Each subcontractor engaged in excavation work must have a person designated as the "Competent Person" (as defined by OSHA) to ensure compliance with the OSHA standard for excavations. The name of that person and their qualifications will be provided to BIG Construction before work begins.

CONCRETE AND MASONRY

- All concrete and masonry operations shall be performed in accordance with 29CFR 1926 Subpart Q.
- All concrete, masonry or other silica-generating cutting process must be done with wet-methods. Dust control measures (engineering or other controls) are to be implemented for all other silica and dust-generating operations. Grinding silica will be conducted as to not expose surrounding employees and existing facilities to elevated levels of silica and respirable dust.
- Concrete subcontractors (or masonry subcontractor when applicable) are responsible for notifying BIG Construction Project Team of any changes or modifications to anchor bolts and any issues related to concrete strength or performance.

TRAFFIC AND PEDESTRIAN CONTROL

- Signs shall conform to the requirements of 29 CFR 1926.200 and ANSI Z35.1-1968.
- Work on or adjacent to roadways must be conducted in accordance with Illinois Statutes and the current version of the Manual of Uniform Traffic Control Devices (MUTCD). IDOT Certified Flagger control must be provided in accordance with Illinois Revised Statutes Chapter 121, Par. 314.2.
- Sufficient chain link fencing or orange "barricade" fencing must be installed as appropriate to separate active construction areas or hazardous areas from active occupied work areas and to protect the public. The fence must be sufficiently supported and marked with appropriate signage.
- Signs and barricades must be removed immediately when no longer applicable or required.

Traffic and Pedestrian Control Policy

PURPOSE

The purpose of BIG Construction's Traffic Control policy is to outline the responsibilities and expectations for installing traffic and pedestrian control measures (herein described as traffic control). This policy is not intended to replace any legislated requirements, but merely to provide a tool for BIG Construction's employees to implement and oversee traffic control scenarios. Additional requirements may be found in the Manual of Uniform Traffic Control Devices or MUTCD (current revision), Illinois Revised Statutes Chapter 121, City of Chicago requirements, project plans and specifications, ANSI standards and OSHA standards.

RESPONSIBILITIES

PROJECT TEAM

- BIG Construction's project team will ensure the appropriate traffic and pedestrian controls are implemented, either through BIG Construction installation of said devices, or via delegation to a subcontractor. When subcontractors are responsible for traffic control, the subcontractor has sole responsibility for installation, maintenance and removal of these devices. BIG Construction will operate in an oversight capacity in these situations.
- Submit traffic control plans, as required, to authorities having jurisdiction.
- Evaluate, observe and revise traffic control plans, as required.

GENERAL REQUIREMENTS

SIGNAGE

- All required signage will be constructed to comply with 29 CFR 1926.200, ANSI Z35.1-1968 and the 2009 edition of the MUTCD (Manual of Uniform Traffic Control Devices). Additional signage may be added on a case-by-case basis.
- Sign spacing, and traffic/pedestrian control zones will be dictated by the applicable local requirements (City of Chicago, MUTCD, Illinois DOT, etc.).
- Signs will be maintained so the message is legible, and the sign is readily visible. Makeshift signs will not be used for the purposes of controlling pedestrians or traffic.
- Signs will be removed when the work is complete, the sign is no longer applicable or if the sign has been damaged.

FLAGGING REQUIREMENTS

- Traffic authorities or Law Enforcement Officers may be used when the situation requires traffic direction.
- Flaggers will wear Class II reflective vests in accordance with ANSI requirements. When employees will be working during hours of darkness and be exposed to vehicle traffic, additional reflective devices, Class III reflective vests and lighting will be provided.
- Flaggers will use STOP/SLOW paddles with a 6' high paddle for stopping and releasing traffic. Red flags may be used in emergency situations only.
- A method of communication will be maintained between flaggers. This may be accomplished through voice, hand signals, two-way radios, etc.
- Flaggers must remain at their station until relieved by another trained and authorized employee. Flaggers must remain attentive, courteous, respectful, aware of the surroundings and in control of their position at all times.
- Flaggers should be positioned at the shoulder/edge of the road while flagging. Flaggers should move out of this position once traffic has stopped and in front of the lead vehicle.

- Cell phone use is prohibited during flagging operations.

BARRICADES

- Protective barricades will be installed to prevent access to BIG Construction work areas by vehicles, pedestrians and all unauthorized individuals.
- All required barricades will be constructed to comply with 29 CFR 1926.200, ANSI Z35.1-1968 and the current edition of the MUTCD (Manual of Uniform Traffic Control Devices). Additional barricades may be added on a case-by-case basis.
- When work requires that a traffic lane(s) be shut down for a period of 8 hours (i.e. a full shift) or longer, an MUTCD-compliant arrow-board shall be used to direct traffic out of said lane(s). One arrow board shall be used for every lane of traffic that is shut down for a period of 8 hours or longer.
- Barricade type and spacing will be dictated by the applicable local, state and federal requirements (City of Chicago, Illinois DOT, MUTCD, etc.).

PEDESTRIAN CONTROL

- When pedestrian traffic is re-routed or impacted by construction activities, appropriate signage and barricades will be installed prior to the construction activities.
- Signage will be installed at the closure points for advanced warning. When required, alternative routes will be provided for pedestrian traffic.
- If a situation arises during the course of operations that would impact public or pedestrian traffic, barricades or a monitor should be used temporarily, until more permanent methods can be installed.

ON-SITE TRAFFIC CONTROL

- Vehicles and equipment will operate on the project site in the designated locations and drive areas. Additional signage may be installed on the project to warn of the hazards of equipment and vehicles.
- Equipment and vehicles with a restricted view must be equipped with a functioning back-up alarm.

RESOURCES

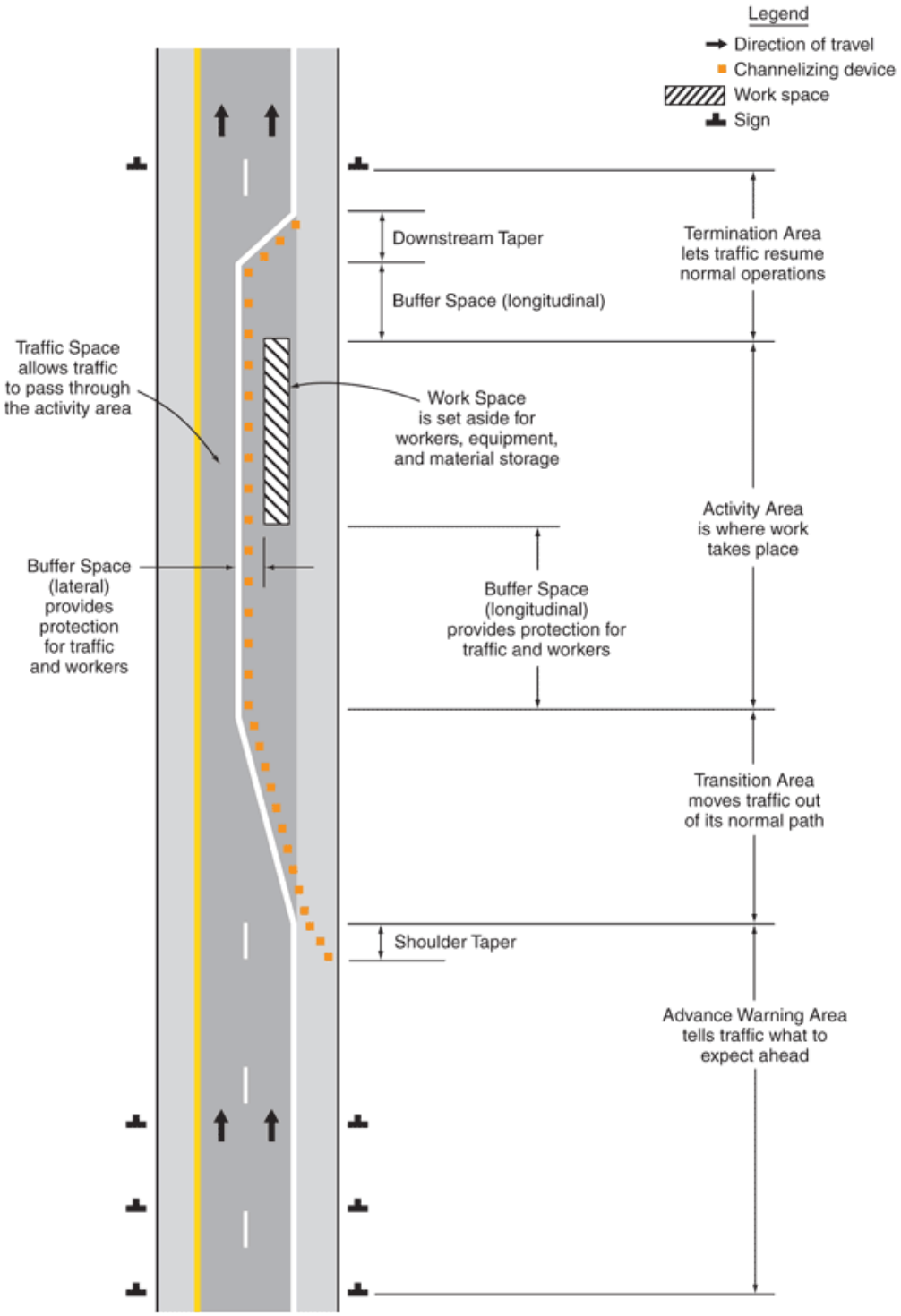
- http://mutcd.fhwa.dot.gov

APPENDICES & REFERENCES

Appendix A – Component Parts of a Temporary Traffic Control Zone Appendix
B – Signaling for Flaggers

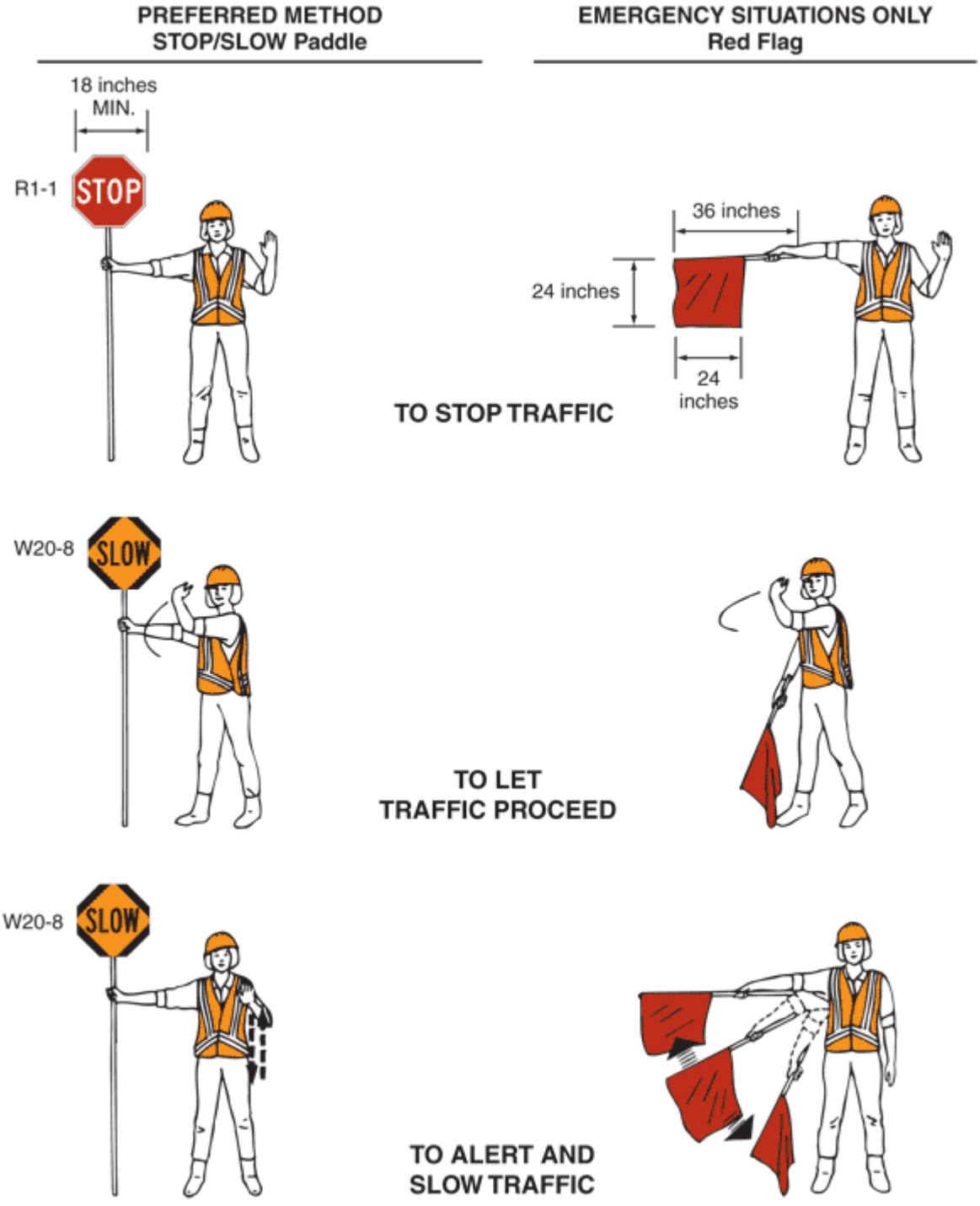
Appendix A – Component Parts of a Temporary Traffic Control Zone

Figure 6C-1. Component Parts of a Temporary Traffic Control Zone



Appendix B – Signaling for Flaggers

Figure 6E-3. Use of Hand-Signaling Devices by Flaggers



Trench and Excavation Policy

PURPOSE

This policy will define the procedures and precautions necessary when performing any excavation work. This policy has been designed to provide information and conform to the applicable OSHA standard 29 CFR 1926.650 (Subpart P – Excavations).

RESPONSIBILITIES

PROJECT TEAM

- Direct excavation related questions or concerns to the applicable Competent Person and/or BIG Construction Safety Department.

GENERAL REQUIREMENTS

OVERVIEW

- Pre-Excavation Requirements
- Excavation Requirements
- Soil Classifications and Protective Systems
- General Requirements

PRE-EXCAVATION REQUIREMENTS

In order to ensure a safe excavation, the following items must be followed prior to the start of any excavation work:

Adhere to all procedures set forth in OSHA standard Utility Locate and Overhead Powerlines Policy, including but not limited to:

- A walkthrough with the Superintendent
- Utility Locates
- Identify a Competent Person
- JULIE/Digger request Locate Numbers and the corresponding refreshes
- Hand-digging provisions
- Any person that works in an excavation must receive proper training prior to the start of work. At a minimum, training elements will include safe work practices in excavations, use of PPE, hazardous atmospheres and emergency rescue methods. This training is the responsibility of the party performing the said work.

These items should be addressed before or during the applicable subcontractor kick off Meeting.

EXCAVATION REQUIREMENTS

The definition of a "Competent Person" means one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Trench and Excavation Policy

Competent Person [CP] has to

- Have the authorization to take prompt corrective measures, and eliminate the hazardous conditions associated with the work.
- Select the protective system and ensure its proper utilization.
- Be capable of identifying existing and predictable hazards.
- Inspect a trench prior to the start of work, as needed throughout the shift, and after any hazard- increasing occurrence (e.g. heavy rainstorm).
- Prepare a site-specific emergency rescue plan when needed.
- Refer to Appendix A for additional resources

Access

- Proper access must be provided in trenches 4' or deeper. Proper access can consist of ladders, ramps, stairs, etc.
- Employees must be within 25' of an approved access point, when the trench is 4' or deeper.
- If extension ladders are used for access, ladders must extend 3' above the top of the trench or be secured with a grab rail.
- A person must be able to walk upright without difficulty to use the slope of the trench as an access point.
- Fall protection is required on catwalks with greater than a 6' fall, and for trenches that are hidden from view (e.g. tree / bush growth).

<u>SOIL CLASSIFICATION AND PROTECTIVE SYSTEMS</u>

- Soil classification requires one manual and one visual test performed by the competent person.
- Protective systems are required for all excavation 5' or deeper, or when the potential for cave-in exists (based on evaluation by the competent person).
- The following are protective systems:

Sloping

"Sloping (Sloping system)" means a method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation so as to prevent cave-ins. The angle of incline required to prevent a cave-in varies with factors such as soil type, environmental conditions or exposure and application of surcharge loads.

- Type A Soils require a ¾ to 1 set back; for every foot down, ¾ of a foot back.
- Type B Soils require a 1 to 1 cut back; for every foot down, one foot back.
- Type C Soils require a 1 ½ to 1 cut back; for every foot down, 1 ½ feet back.

Benching

"Benching (Benching system)" means a method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

- Angle requirements for benching are the same as for sloping.
- Benching can be used in conjunction with sloping if designed in compliance with applicable standards.
- Benching is not permitted for Type C Soil.

Trench and Excavation Policy

Shielding (Trench Boxes)
"Shield (Shield system)" means a structure that is able to withstand the forces imposed on it by a cave-in and thereby protect employees within the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses. Additionally, shields can be either manufactured or job-built in accordance with 1926.652(c)(3) or (c)(4). Shields used in trenches are usually referred to as "trench boxes" or "trench shields."

- The installation of a support system shall closely follow the excavation of the trench. The trench box should be flush / level with the ground level.
- Trench boxes must be completely assembled before employees are allowed inside the trench (including sheeting, uprights, cross braces, whalers, stackers, etc.).
- The bottom of the trench box cannot be more than 24" from the bottom of the trench.
- When a trench box is used in conjunction with a sloping system, the top of the trench box must stick up 18" from the bottom of the slope.
- Manufactured trench shields and boxes shall be used and maintained in accordance with the manufacturer's recommendations. This includes the use of any stackable systems.
- Members of support systems shall be securely connected together to prevent sliding, falling, kick outs, etc. This will be completed prior to anyone's entry into the trench.
- Employees shall not be permitted inside of a trench while the trench box is being transported.

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

- Shoring systems must be designed by a Professional Engineer.

<u>GENERAL REQUIREMENTS</u>
Worker Protection
- Trenches greater than 20' feet deep must be designed by a Professional Engineer. The tabulated data must remain on site and in the job file indefinitely.
- Spoil piles, equipment and material shall be kept at least 2' from the edge of an excavation. Large soil clumps should be kept clear of the excavation to protect employees from struck-by hazards.
- No person is allowed to work underneath loads handled by lifting/digging equipment. Employees are to be removed from the area during such operations.
- Evidence of any type of soil distress (i.e. fissures, cracks, slumping, sudden bulging, sinking, sudden trickling or material) must be reported to the Competent Person immediately so as to determine the stability of the trench and if an evacuation is necessary.
- Nearby vibrating machinery, nearby heavy loads, nearby traffic, sudden rain and excessive dry weather can all impact the soil's stability. Report any concerns to the Competent Person immediately.

Water Accumulation
In the event of water seepage/accumulation, special precautions must be taken to prevent drowning. These can include, but are not limited to:
- Special shoring or a shield system.
- Water removal pump, continuously monitored by a Competent Person.
- All workers in the excavation utilizing an adequate retrieval system.

Working near traffic [vehicular and pedestrian]

- MUTCD-compliant traffic zones must be established for excavation work on or near road shoulders, sidewalks and other road/pedestrian traffic areas (refer to Traffic and Pedestrian Control Policy).
- Anyone working in or near an excavation next to traffic is required to wear a reflective safety vest as well as other, applicable safety equipment (e.g. hearing protection, fall protection).
- A warning system (e.g. barricades, hand signals or stop logs) shall be used when mobile equipment is operated next to the edge of an excavation and visibility is hindered.

Hazardous Atmospheres

- Atmospheric testing must be performed in excavations 4' or deeper that are near hazardous areas or pose a possibility for an environmental threat (e.g. landfills, near gas pipes, areas with contaminated soil, etc.). The CP makes the determination if testing is required.
- Excavations deemed hazardous through testing and/or soil analysis will require emergency planning (i.e. rescue plan, emergency equipment).

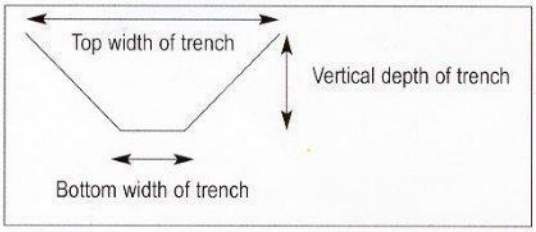
Public Protection

- Surface obstacles (e.g. sidewalks, pavement, utility poles, trees, rocks) must be supported or removed if an excavation is going through or adjacent to them.
- The excavation must be marked and barricaded to restrict pedestrians from entering the area and to protect them from the work.
- Wells, holes, pits, shafts and similar excavations shall be barricaded or covered nightly as needed to prevent unauthorized access. All excavations with public exposure potential must be backfilled as soon as possible.
- Walkways that do not fully cover an excavation must be equipped with a fall protection system.

Appendix A – Trench and Excavating Guide for Competent Person

Trench & Excavating Guide for Competent Person

- Who is designated competent person?
- Everyone on crew has responsibility to stop unsafe operations.
- Complete inspection prior to start of work, as needed during the shift, after every rain, and with any other hazard.
- Classify soil based on results of one visual and one manual test. Reclassify if soil characteristics change. (stable rock, A, B, or C)
- Spoils, tools, etc. kept back 2' minimum. Adjust slope based on surcharge loads.
- Insure access and egress is provided in trench greater than 4-feet (within 25' of lateral travel).
- Insure compliance with all OSHA and other applicable regulatory standards.
- Insure water accumulation is controlled (monitor pumps).
- Inspect protective system for damage to determine if suitable for continued use.
- What protective systems are in use in trenches greater than 5-feet deep or trench that shows potential for cave-in (regardless of depth)?
- Surface obstacles are removed or supported.
- Verify location of underground utilities and overhead lines.



Soil Type	Unconfined Compressive Strength (tsf)	Maximum Allowable Slope H:V	Top Width of Trench	Characteristics	Ex.: Assume trench is 3' wide at bottom and 5' deep. The width at top of trench based on sloping would be:
Stable Rock	----	Vertical	Width of bottom trench	- Natural mineral - Remains intact with vertical sides while exposed	3'
Type A	> 1.5 tsf	¾:1	1.5 x depth of trench + bottom width	- Cohesive or cemented soil - No fissures - No vibration hazard - Not previously disturbed	10.5'
Type B	.5 - 1.5 tsf	1:1	2 x depth of trench + bottom width	- Cohesive soil or granular cohesionless soil - Previously disturbed soil that is not Type C	13'
Type C	< .5 tsf	1½:1 (No benching permitted)	3 x depth of trench + bottom width	- Submerged soil or water freely seeping - Submerged rock that is not stable - Can be weak cohesive or granular soil	18'

Utility Locate and Overhead Powerlines Policy

PURPOSE

The purpose of this policy is to provide guidance and procedures to address the hazards that exist when working near and around overhead and underground utilities. In order to prevent accidental contact with overhead and underground utilities and installations, the following policy shall be followed. This policy is also applicable to locating utilities, services and other embedded items in existing concrete slabs, walls and structures.

RESPONSIBILITIES

PROJECT TEAM

When subcontractors will be involved in excavation work, BIG Construction supervision will be responsible for the following items:

- BIG Construction will manage excavation work as any other scope of work to monitor conditions for compliance with applicable standards, specifications, and company policies. Excavation work for the purposes of this policy includes any activity that penetrates the ground including underground demolition.
- Verify subcontractor contacts JULIE/Digger for primary locates. Independent secondary locates will be completed by subcontractors doing work that penetrates the ground, if necesary. BIG Construction may complete a secondary locate for investigative purposes.
- Log and document the location of existing utilities on a designated drawing kept onsite. The drawing is to be used as information only and does not replace utility locating (mark drawing "For Information Only).
- When BIG Construction is involved with excavation work, the responsibilities assigned to "Subcontractor" (listed below) will be completed. In addition, at the start of the project, BIG Construction may request a site locate by JULIE/Digger for general information.
- Schedule and conduct pre-construction meeting with subcontractors engaged in work covered by this policy, if and when necessary.

SUBCONTRACTORS

Each subcontractor involved in excavation work is responsible for managing the following items:

- Each subcontractor is solely responsible for developing and implementing safety policies and procedures for the exposures generated by their operations including compliance with any applicable standards or requirements.
- Assign a competent person who will be on-site during excavation work. This person is responsible for subcontractor's compliance with OSHA Subpart P – Excavations, BIG Construction's Utility Locate Policy and any other applicable specifications or regulatory guideline.
- Contact JULIE/Digger for primary utility locates. Subcontractor is responsible for additional recall, refresh and re-marking excavation areas as required by statute. Dig numbers assigned to subcontractor by primary locators will be provided to BIG Construction.
- Subcontractor is responsible for hand-digging/hand-locating existing utilities (vacuum-excavating is considered hand-digging). Using machinery or equipment to uncover utilities is not considered hand-locating and is not permissible.
- Subcontractor is responsible for refreshing/recalling JULIE or Digger after leaving site and remobilizing to a project for continued or additional work.

PROCEDURE

EXCAVATION WORK

- A Preconstruction Meeting involving the affected subcontractor is to be held prior to the commencement of work, covering:
  - Existing conditions reviewed
  - Methodology for installing subcontractor's work
  - JULIE/Digger
  - Emergency Prep Plan is to be created prior to any excavation work for use in the event of a contacted/damaged utility.
  - Project specific safety issues created by subcontractor's work with plan to address
- All utilities are to be hand-located or vacuum excavated to verify exact locations. Once within 3-feet of a utility mark (in any direction) and at any intersection of any utilities, hand excavation is required. This is vital when any type of buried cable, fiber optic, electric or gas line must be located. Hand excavation is required from the surface down to the utility.
- When utilities are located by hand-digging or vacuum-excavating, the following should occur:
  - Mark the location and the elevation of the utility on a site plan that is to be kept at the BIG Construction office and used as "For Information Only". This includes installations as part of project. This plan is to be updated by the project team and should include utilities installed as part of the project.
  - If the utility is going to be backfilled and excavated again in the future, install a marker (PVC pipe, stake, etc.) that easily identifies the location and elevation of the utility. This should be completed by the subcontractor who has located the utility.
- Prior to exposing existing utilities, a plan shall be developed to support and/or protect exposed utilities.
  - BIG Construction will provide full-time supervision on-site during any subcontractor work or during any utility- locate work. Documentation in the form of Daily Logs and pictures is required.

INTERIOR LOCATING OF EXISTING OR EMBEDDED UTILITIES

- Prior to starting concrete sawing, coring or other similar operations, BIG Construction and subcontractors will make every effort to locate conduits embedded in the existing concrete. Conduit includes all piping, wire and other utility items embedded in walls or floors. This may be achieved through the following steps:
- A Preconstruction Meeting involving all parties may be held prior to the commencement of work, covering:
  - Review existing conditions
  - Procedure for locating, exposing (as required), protecting utility and completing work
  - Project specific safety issues created by subcontractor's work with plan to address
- BIG Construction's Project Team and subcontractors will complete the following:
  - Review available as-built drawings to determine the presence of conduits. This information will be used as part of the investigation process to determine the location of such conduits and objects.
  - Complete a field investigation of the work area to determine the existence of conduits and other objects.
  - Where possible and applicable, contact JULIE or Digger for required locates (refer to previous "Procedure" section).
  - o

  - Where possible, utilize an independent locator to identify existing utilities. Independent locating must be completed for saw-cutting and coring in existing conditions.
- If a utility is found during the investigation, the object must be exposed or the core or cut must be moved to avoid contact. In addition, the conduit/object must be exposed prior to starting work again.
- When coring existing concrete slabs, an electric cut-off device (black box) should be attached to the coring device to shut-off the equipment if an embedded object is contacted. This is the responsibility of the subcontractor completing the work to ensure the device is provided and working correctly.
- The subcontractor conducting the work should provide a plan and method to control slurry and potential drop of concrete slug or core in the area around and below the coring or cutting operation. Coring and concrete sawing must be completed using wet methods.

Overhead Powerlines Procedure

- Work done in accordance with 1926.1407-1411 for Cranes and 1926.600 for Equipment
- When there are existing overhead powerlines on our projects, we must take precautions to protect all exposed employees and the public. This includes current projects as well as projects we are pricing and bidding. When you have identified powerlines on your project, please adhere to the following steps in order to safely handle those lines.
  - Contact the Superintendent assigned to your project or BIG Construction's Safety Director in advance to review the conditions prior to commencing work.
  - A meeting will be held with the utility owner to determine the necessary precautions to be taken.
    - Schedule an on-site visit with the utility owner
    - Contact 1-800-EDISON-1 to schedule ComEd.
  - At the meeting, a representative of BIG Construction's Safety Department must be present with the project team. The following should be addressed as part of this meeting:
    - Verify line voltage(s) to determine safe working clearances
    - Determine the course of action, including, but not limited to:
      - De-energize overhead powerline
      - Line relocation (permanent/temporary)
      - Insulating (blankets and/or links)
      - Sleeves or other visual barriers installed
      - Maintain required clearances (listed below)
      - Barricade, warning lines, or line of signs
      - Dedicated spotter
      - Warning devices
    - In addition, the team should communicate the project schedule to the utility owner to insure a commitment and timely response.

For crane use near overhead powerlines, follow procedures established in BIG Construction's Crane Policy. In order to complete the process, there are items that need to occur on the jobsite.

1. Post signs and other visual barriers that identify the powerline hazard.

2. Communicate the hazard(s) and procedure(s) to affected subcontractors in pre-construction meeting. Subcontractors are responsible for training their employees on these procedures.
3. Train BIG Construction employees on the procedure for working around powerlines.

Additional precautions may be necessary to protect workers from the hazard of powerlines. Each situation will be approached on a case-by-case basis, accordingly. If you have any comments or questions, please contact your BIG Construction Safety Department.

The chart provided is a guideline for required clearances when working near overhead power lines per OSHA and ANSI-ASME requirements (Appendix A).

Voltage	Minimum Clearance
0-50 kV	10 ft.
Over 50-200 kV	15 ft.
200-350 kV	20 ft.
350-500 kV	25 ft.
500-750 kV	35 ft.
750-1000 kV	45 ft.

Visitors Policy

PURPOSE

The following applies to visitors on BIG Construction projects, including, but not limited to, architectural/engineering representatives, contractor representatives, family members, municipal inspectors and any other person that is present for only a temporary amount of time. The BIG Construction Project Team, trades people, and personnel that have received proper site orientation; established personnel that have completed the site orientation and the like shall not be considered "visitors" for the purpose of this policy. This policy has been designed to promote the safety of all personnel on BIG Construction jobs by properly welcoming and tracking our visitors.

RESPONSIBILITIES

PROJECT TEAM

- Establish a protocol for welcoming and tracking all visitors (e.g. proper signage and a sign-in sheet with the Project Administrator), based on the resources available, expected visitor traffic, visitor's employer, etc.
- Ensure that all visitors follow BIG Construction's applicable safety requirements (e.g. adhering to 100% hard hat & safety glasses policy).
- Contact the BIG Construction Safety Department if there are any questions/issues related to visitors.
- Contact the BIG Construction Safety Department immediately if there is an OSHA compliance officer present.

GENERAL REQUIREMENTS

ALL VISITORS

- All visitors are required to "check-in" at the location designated by the BIG Construction Project Team, based on the protocol established by the job. Visitors may be required to "check out" as well, depending on the project's established procedures.
- While on-site, visitors are required to wear hard hats and safety glasses 100% of the time (this may not apply in the project office/trailer). The BIG Construction Project Team may determine its own protocol for PPE rentals.
- All visitors must comply with all applicable signs and BIG Construction's safety rules.

OSHA INSPECTION

- If an OSHA compliance officer presents himself or herself to a member of the BIG Construction Project Team, that person will escort the officer to the project office immediately.
- The Senior Project Team Member will introduce himself or herself to the compliance officer and explain to the officer that they will call a member of the Safety Department to be present during the inspection/walkthrough.
- Contact BIG Construction's Safety Department (Superintendent) or BIG Construction's 3rd party Insurance company. If he cannot be reached, contact your Project Manager. Ask the compliance officer to wait in the project office—the Safety Director/Project Manager will make sure that the appropriate personnel arrive for the walkthrough.
- OSHA inspections must be given top priority. Any safety issues/concerns that are presented by the OSHA compliance officer must therefore be given top priority.
- Important points to remember during the walkthrough include, but are not limited to:

- If the walkthrough was "triggered" by a complaint / observation, the compliance officer will want to proceed to the area in question. Plan your routes accordingly and be aware that any observations made to and from the area in question are open for inspection and potential citations, if standards are violated.
- Be courteous and respectful at all times.
- Follow the compliance officer's directives (e.g. if the compliance officer wants all work stopped immediately, do so immediately).
- Limit the walkthrough only to the area(s) the compliance officer has requested to see.
- During the walkthrough, follow and document the activities of the compliance officer. When possible, take pictures of everything the officer does at a similar angle. If the compliance officer takes measurements, take those same measurements.
- Document the names of the employees that the compliance officer speaks with.
- Participate in a closing conference to determine any applicable "next steps".
- If you do not know the answer to a question or are not comfortable answering the question, remember that it is always acceptable to defer to a Supervisor or the BIG Construction Safety Department.

- Coordinate any post-inspection responses (including possible citation responses) with the Safety Director or the Safety Supervisor on-site. If the compliance officer asks for any follow-up, including documentation, follow-up meetings, etc., make sure that all of these are coordinated by the Safety Director or the Safety Supervisor on-site.

<u>SHARED CONSTRUCTION SPACES</u>

- "Shared construction space" refers to a project at which contractors that are NOT contracted by BIG Construction begin work concurrently with BIG Construction operations. Examples include, but are not limited to:
  - A furniture contractor has been directly hired by the owner to install desks in a location that is also under construction by BIG Construction;
  - The project owner leases space to other contractors that begin construction on their space during BIG Construction's work.
- In the event that a BIG Construction project becomes a "shared construction space", utilize the following protocol:
  - As soon as possible, coordinate with the Insurance Director to ensure that BIG Construction is an Additional Insured on the applicable contractors' insurance policies (as applicable).
  - Inform your Project Safety Supervisor so that project rules and communication protocols can be coordinated with the owner's representative.
  - Develop clear turnover protocols with the owner's representative.
  - Do NOT provide direction to the owner's contractors with respect to production, quality or safety. Report perceived issues with the owner's contractors to the applicable owner's representative.
    - Exception: If an imminent danger situation arises (i.e. a situation that could reasonably be expected to cause death or serious physical harm immediately), address theissue immediately and inform the owner's representative as soon as possible.