"Freedom from Danger"



# **Respiratory Protection**

#### 1.0 Purpose

1.1. To control harmful airborne substances (i.e., harmful dusts, fogs, fumes, mists, gases, smokes, sprays, particles, spores, vapors, etc.), the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering or administrative control measures. When effective controls are not feasible, or while they are being instituted, appropriate respirators shall be used pursuant to requirements set forth by Safety Data Sheets, employer policies, etc.

#### 2.0 Scope

2.1. Respirator use is required in atmospheres containing harmful airborne substances. Tradesmen working in hazardous environments are required to be trained, fully aware of proper respirator application, use, procedures, limitations, OSHA safety standards, SDS, PPE requirements, GHS requirements, and manufacturer recommendations.

#### 3.0 Responsibility

#### 3.1 Project Management

3.1.1. BNB Project Management & Supervision are responsible for conducting a Preconstruction Risk Assessment to identify respiratory hazards and respective control measures. For tasks that require personnel to wear respiratory protection, BNB Project Management & Supervision will ensure that safety policies, procedures, and work practices are adequate and compliant.

#### 3.2 Workers

3.2.1. Workers who wear respiratory protection are responsible for following the safety policies, procedures, and work practices of their employer.

#### 4.0 Definitions

- 4.1. **Air-purifying respirator** a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.
- 4.2. **Assigned protection factor (APF)** the workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees when the employer implements a continuing, effective respiratory protection program as specified by this section.
- 4.3. Atmosphere-supplying respirator a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.
- 4.4. Canister or cartridge a container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.
- 4.5. **Competent Person** 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.
- 4.6. **Demand respirator** an atmosphere-supplying respirator that admits breathing air to the facepiece only when a negative pressure is created inside the facepiece by inhalation.
- 4.7. Emergency situation any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant.
- 4.8. **Employee exposure** exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.
- 4.9. End-of-service-life indicator (ESLI) a system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.
- 4.10. Escape-only respirator a respirator intended to be used only for emergency exit.

# Health, Safety and Environmental Manual

"Freedom from Danger"

- 4.11. Filter or air purifying element a component used in respirators to remove solid or liquid aerosols from the inspired air.
- 4.12. Filtering facepiece (dust mask) a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.
- 4.13. **Fit factor** a quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.
- 4.14. **Fit test** the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual. (See also Qualitative fit test QLFT and Quantitative fit test QNFT.)
- 4.15. **Harmful Exposure** An exposure to oxygen-deficient atmosphere, or to dusts, fumes, mists, vapors, chemicals or gases of such concentration and duration as to cause injury.
- 4.16. High efficiency particulate air (HEPA) filter a filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.
- 4.17. **Hood** a respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.
- 4.18. Immediately dangerous to life or health (IDLH) an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.
- 4.19. Loose-fitting facepiece a respiratory inlet covering that is designed to form a partial seal with the face.
- 4.20. Maximum use concentration (MUC) the maximum atmospheric concentration of a hazardous substance from which an employee can be expected to be protected when wearing a respirator, and is determined by the assigned protection factor of the respirator or class of respirators and the exposure limit of the hazardous substance. The MUC can be determined mathematically by multiplying the assigned protection factor specified for a respirator by the required OSHA permissible exposure limit, short-term exposure limit, or ceiling limit. When no OSHA exposure limit is available for a hazardous substance, an employer must determine an MUC on the basis of relevant available information and informed professional judgment.
- 4.21. **Negative pressure respirator (tight fitting)** a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.
- 4.22. Oxygen deficient atmosphere an atmosphere with an oxygen content below 19.5% by volume.
- 4.23. Physician or other licensed health care professional (PLHCP) an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by paragraph (e) of this section.
- 4.24. **Positive pressure respirator** a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.
- 4.25. **Powered air-purifying respirator (PAPR-** an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.
- 4.26. **Pressure demand respirator** a positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.
- 4.27. Qualitative fit test (QLFT) a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.
- 4.28. Quantitative fit test (QNFT) an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.
- 4.29. **Qualified Person -** A person designated by the employer who by reason of training, experience or instruction has demonstrated the ability to safely perform all assigned duties and, when required, is properly licensed in accordance with federal, state, or local laws and regulations.
- 4.30. **Respiratory inlet covering** that portion of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device or breathing air source, or both. It may be a facepiece, helmet, hood, suit, or a mouthpiece respirator with nose clamp.
- 4.31. Respiratory protection program This subsection requires the employer to develop and implement a written respiratory protection program with required worksite-specific procedures and elements for required respirator use. The program must be administered by a suitably trained program administrator. In addition, certain program elements may be required for voluntary use to prevent potential hazards associated with the use of the respirator.
- 4.32. **Self-contained breathing apparatus (SCBA)** an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

# Health, Safety and Environmental Manual

"Freedom from Danger"

- 4.33. **Service life** the period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer.
- 4.34. **Supplied-air respirator (SAR) or airline respirator** an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.
- 4.35. **Tight-fitting facepiece** a respiratory inlet covering that forms a complete seal with the face.
- 4.36. **User seal check** an action conducted by the respirator user to determine if the respirator is properly seated to the face.
- 4.37. **Voluntary use** respirator use that is requested by the employee and permitted by the employer when no respiratory hazard exists.

#### 5.0 Procedure

- 5.1. BNB requires methods such as substituting fewer toxic materials or ventilating the work area to prevent atmospheric contamination. When engineering controls fail to reduce employee exposures to harmful contaminants below the permissible exposure limit (PEL) of a contaminant, respiratory protection and accompanying program elements must be put in place.
- 5.2. Contractors are required to develop and implement a written respiratory protection program for situations in which PELs of airborne contaminants could be exceeded or when the employer requires use of respirators by workers.
- 5.3. The written program also must address voluntary respirator use; respirator selection; medical evaluations; fit testing; use of respirators; user seal checks; maintenance and care of respirators; identification of filters, cartridges, and canisters; employee training; and program evaluation. The standard requires the respiratory program to be administered by a program administrator and updated to reflect the changing workplace conditions that affect respirator use. Applicable federal and state requirements should be addressed to ensure adequacy of written respiratory protection programs.
- 5.4. Many of the elements listed may not need to change for each project. For example, medical evaluations, fittest procedures, schedules, and procedures for maintaining respirators, air-quality requirements for supplied-air respirators, employee training and program evaluations often can remain consistent. The only change that may be needed in a work-site specific written program is the procedure for respirator selection.
- 5.5. When employees voluntarily wear respiratory protection, the employer still must establish and implement written respiratory program components related to the medical evaluation of a worker's ability to wear the respirator safely.
- 5.6. Elements relating to cleaning, storing and maintaining respirators must be addressed, as well. Applicable federal and state requirements should be addressed regarding requirements for employees who voluntarily wear respiratory protection.

### 5.7. Medical Evaluations

5.7.1. Respirator use puts a physical burden on the human body; prior to use of a respirator, a worker must be declared medically fit to wear one through a medical evaluation.

#### 5.8. The medical evaluation procedure requires:

- 5.8.1. The employer identifies a physician or other professional licensed health care professional (PLHCP) to evaluate the employee using a medical questionnaire or initial medical examination
- 5.8.2. The information obtained by questionnaire or examination must answer the questions laid out in applicable federal and state regulations
- 5.8.3. Regardless of how a contractor chooses to have employees evaluated, he or she is required to provide supplemental information to the PLHCP before final determinations are made.

#### 5.9. This supplemental information includes:



"Freedom from Danger"

- 5.9.1. Type and weight of respirator to be used
- 5.9.2. Duration and frequency of use
- 5.9.3. Expected physical work effort
- 5.9.4. Whether additional personal protective equipment (PPE) is to be worn
- 5.9.5. Temperature and humidity extremes
- 5.9.6. A copy of the written program and the medical evaluation portion of the standard

#### 5.10. Fit Testing

- 5.10.1. Fit testing is required before any employee wears a respirator. A fit test allows an employee to select a respirator based on comfort, making sure the respirator fits correctly on his or her face.
- 5.10.2. Either a quantitative fit test (QNFT) or qualitative fit test (QLFT) must be conducted to ensure the proper make, model, size and style of respirator is selected by an employee. Applicable federal and state requirements provide protocol that must be followed when conducting the fit testing. A QLFT involves the introduction of a gas, vapor or aerosol test agent into an area around the head of a person wearing the respirator. If the person can detect the presence of the test agent through smell, taste or irritation, the face piece is inadequate. If the test agent is not detected, the respirator is the correct size, make, model and style for that person.
- 5.10.3. A QNFT is a type of fit test that actually detects the amount of air leakage into a respirator. This type of fit testing procedure requires appropriate instrumentation.

#### 5.11. Additional fit tests are required:

- 5.11.1. When a different face piece, size, make or model is used
- 5.11.2. When the employee reports or the contractor, PLHCP, supervisor or program administrator observes changes in the employee's physical condition that could affect the fit of the respirator
- 5.11.3. At least annually

#### 5.12. Program Evaluation

5.12.1. The written respiratory program must be evaluated by the program administrator to determine if it is being properly implemented. Employees should be consulted in an effort to determine its effectiveness and identify problems with the program. If any problems are noted, they must be corrected, and the changes reflected in the program.

#### 5.13. Record Keeping

5.13.1. Medical evaluations must be kept by a contractor for 30 years, in accordance with federal and state requirements. Fit-test records should be kept for the current year. When a new fit test is performed, the old fit test can be discarded.

#### 5.14 Hazards

- 5.14.1. Any one of the following types of airborne contaminants may be encountered while working in construction.
  - 5.14.1.1. Gas a normally formless fluid that can occupy the space of an enclosure and which can be changed to the liquid or solid state only by the combined effect of increased pressure and decreased temperature. Examples of gases are ozone, carbon dioxide, carbon monoxide, and chlorine.
  - 5.14.1.2. Vapor the gaseous form of a substance which is normally in the solid or liquid state and which can be changed to these states by either increasing the pressure or decreasing the temperature alone. Vapors can diffuse into a substance in its gaseous state, which is usually a solid or liquid at room temperature. Examples of vapors are methylene chloride, toluene, and mineral spirits.

# Health, Safety and Environmental Manual

"Freedom from Danger"

- 5.14.1.3. Dust particulate matter generated from intrusive processes such as grinding, blasting, or mixing. Examples of dusts are wood dust, coal, and silica dust.
- 5.14.1.4. Mist a dispersion of visible liquid particles, suspended liquid droplets generated by condensation from the gaseous to the liquid state or by breaking up a liquid into the dispersed state, such as by splashing, foaming, or atomizing. Examples of mists are paint mists and oil mists.
- 5.14.1.5. Fume solid particles generated by condensation of vaporized material, generally after volatilization from molten metals. Examples of a fume generating processes are welding, brazing, and smelting. Examples of fumes are lead, zinc, and iron.
- 5.14.1.6. Spores A small, usually single-celled reproductive body that is highly resistant to desiccation and heat and is capable of growing into a new organism, produced especially by certain bacteria, fungi, algae, and nonflowering plants.
- 5.14.1.7. Fibers Fibers are solid particles with a length to width ratio of 3:1. Fibers can be found in insulation products. Examples of fibers are asbestos and fiberglass.

#### 5.15 Hazard Controls

#### 5.15.1 Engineering Controls

5. 15. 1. 1. An engineering control for respiratory protection would be eliminating the contaminants or substituting them with less toxic materials (e.g., enclosing or isolating the process or using dilution ventilation or local exhaust ventilation).

#### 5.15.2 Administrative Controls

5.15.2.1. Contractors are required to develop and implement procedures for use of respirators.

#### 5.15.3 Personal Protective Equipment

5.15.3.1. Respiratory selection is critical. To select the proper respirator, it must be understood that respirators only reduce exposures to airborne contaminants-- they do not eliminate them. Based on how they operate, respirators are air purifying (APR), supplied air (SAR), or a combination of the two

### 5.15.3.2. Air-Purifying Respirators

5.15.3.2.1. APRs use purifying elements to clean the air a wearer is breathing.

#### 5.15.3.2.2. These purifying elements are:

- 5.15.3.2.2.1. Filters that remove particulate matter
- 5.15.3.2.2.2. Cartridges that remove gas or vapors
- 5.15.3.2.2.3. Filter and cartridge combinations that remove particulates, gas and vapors
- 5.15.3.2.2.4. Canisters that remove gas or vapors (impractical for construction because of bulkiness)
- 5.15.3.2.3. As air passes through a purifying element, contaminants are removed from the air. Wearers operate a respirator by inhaling, which creates a negative pressure in the face piece that allows air to pass through the purifying element.
- 5.15.3.2.4. PAPRs operate similarly, but a pump is used to draw air in through the purifying element and then into the face piece.
- 5.15.3.2.5. A restriction to these types of respirators and their purifying elements is that they cannot be used in, nor do they eliminate the hazards of, oxygen deficient or IDLH atmospheres. An oxygen-deficient atmosphere is an atmosphere that contains less than 19.5% oxygen, which can cause death.

#### 5.15.3.3. Filtering Face Pieces (Dust Masks)

5.15.3.3.1. NIOSH's certification standard for respirators addresses dust masks and refers to them as filtering face pieces. OSHA defines a filtering face piece as a negative-pressure particulate respirator with a filter as an integral part of the face piece or the entire face piece composed of the filtering medium. These ordinarily are disposable, low-cost respirators for protection against particulates when exposures are below the PEL. Some



"Freedom from Danger"

come with integrated exhalation valves and are rated under the N, P or R standards at 95, 99 or 100 efficiency levels.

5.15.3.3.2. If a contractor elects to make use of filtering face pieces mandatory, then all the requirements of the OSHA respiratory protection standard apply. If employees voluntarily choose to wear the respirators, the contractor must make Appendix D of the standard available to them.

#### 5.15.3.4. Supplied-Air Respirators

#### 5.15.3.4.1. There are three basic types of atmosphere-supplying respirators:

- 5.15.3.4.1.1. Supplied-air respirators (includes emergency escape respirators)
- 5.15.3.4.1.2. Self-contained breathing apparatus
- 5.15.3.4.1.3. Combination of the two
- 5.15.3.4.2. These respirators are more sophisticated and require extensive training before use. An application for these respirators may be when cleaning out a tanker or similar confined spaces.
- 5.15.3.4.3. The units are supplied with breathable air from a stationary source, such as a compressor. The compressor must be able to provide breathable air that meets the American National Standards Institute (ANSI) grade-D breathing air requirements.

#### 5.16 Training

5.16.1. Each employee required to wear a respirator must be trained before the first use. The training must be comprehensive, hazard/task specific, and repeated annually or more often if necessary.

1 1 11111

#### 5.16.1.1. *This training must include:*

5.16.1.1.1.	Limitations and capabilities of the respirator
5.16.1.1.2.	Respirator use during emergencies or when a respirator malfunctions
5.16.1.1.3.	Reasons why respirators are required
5.16.1.1.4.	How improper fit, usage and maintenance can adversely affect the respirator
5.16.1.1.5.	How to inspect, put on and remove, use and check the seals of the respirator
5.16.1.1.6.	Maintenance and storage procedures
5.16.1.1.7.	How to recognize medical symptoms that limit or prevent the use of respirators
5.16.1.1.8.	The requirements of applicable federal and state regulations

#### 6.0 References

<u>L&I WAC Title 296-62-07717 – Respiratory Protection</u>

- 10 1 1

CALOSHA Title 8 Subchapter 7 Group 16 Article 107 - Respiratory Protection

FEDOSHA 29 CFR 1910.134 - Respiratory Protection

#### 7.0 Attachments

Voluntary Use of Respirator Form

Pre-Task Plan

Silica Exposure Control Plan Template

Confined Space Entry Permit

**Demolition Permit** 



"Freedom from Danger"

# Safety Champion

#### 1.0 Purpose

1.1. Each year at our Annual Safety Summit BNB recognizes a "Safety Champion" This person exemplifies our Safety Culture by their actions on and off our projects. Our Safety Champions consistently promote safety on projects by proactively participating in safety on a daily basis by always looking out for their fellow craft workers, speak up at Safety Meetings, finding ways to perform their work in a safer manner, correct unsafe conditions when observed, and always leading by example. Safety Champions are Leaders in safety at the project level.

#### 2.0 Scope

2.1. Safety Champions come from our craft employees. The Safety Champions will be selected from the current years pool of "On the Spot Recognition" (OTSR) winners and will be selected by Safety staff, Safety Leadership, and Senior Superintendents. Regional and Safety Grand Champions must be employed with BNBuilders at the time of the selection process.

#### 3.0 Responsibility

- 3.1. BNB Project Management, Site Supervisors, Project Craft Persons, and Safety will recognize and report "On The Spot Recognition" winners by identifying fellow craft workers whom:
  - 3.1.1. Share/Implement ideas that make the project safer.
  - 3.1.2. Correct a hazard(s) they did not create without being asked.
  - 3.1.3. Coach a peer on a safety topic or practice.
  - 3.1.4. Consistently exhibit exceptional commitment to safety.

#### 4.0 Definitions

- 4.1. On The Spot Recognition Winner Will receive a \$50 gift card.
- 4.2. **Monthly On the Spot Winner** Will receive a \$100 gift card and be invited to the Safety Breakfast/Lunch, be recognized for their safety contributions and be eligible for the Regional Safety Champion award.
- 4.3. **Regional Safety Champion** Will be recognized at the Regional Safety Summit, receive a check for \$2500, receive a BNB garment with the slogan "Safety I made a difference" and be eligible for the BNB Safety Grand Champion Award.
- 4.4. **Safety Grand Champion** Will be recognized via social media/internal communication, receive a check for \$5000, and be recognized at the following years Safety Summit in their region.

#### 5.0 Procedure

### 5.1 On the Spot Recognitions

5.1.1. During each month "OTSR" candidates, which shall be comprised of BNB craft, will be submitted from projects to the Regional Safety leader by the 25<sup>th</sup> of each month. A photo and brief description of the individual and their contribution to project safety will be sent in for review during weekly coordination meeting. OTSR's candidates must be submitted in the month in which the OTSR award was given.

### 5.2 Monthly On the Spot Winner

5.2.1. At the end of each month all "OTSR" winners will be compiled by each regions regional Safety Department and reviewed by the regional Safety Staff and regional Sr. Superintendents in which region

# Health, Safety and Environmental Manual

"Freedom from Danger"

the OTSR was recognized to determine who the monthly winner will be. This person will be recognized at the following months regional safety breakfast and also during the monthly incident review meeting held with all project supervision via online meetings platform. If no BNB employee is recognized in the region in that month then that month will carry forward without a winner.

#### 5.3 Regional Safety Champion

5.3.1. At the end of November, the monthly "OTSR" winners will be compiled by the regional safety staff. The safety staff will then submit the package of years OTSR's to the regional Safety staff and regional SR Superintendents as well as the Safety Leadership group to vote. This vote will determine the Regional Safety Champion for each region which will be announced at each regional safety submit.

#### 5.4 Safety Grand Champion

5.4.1. Once the selected Regional Safety Champions are selected then Safety will compile the four elected champions and submitted them to the Executive Leadership team in order to determine a Safety Grand Champion. The package submitted to the ELT will be determined by a blind vote, in which only the OTSR factor(s) will be presented for a vote. Regional candidate packages shall be submitted as "A thru D". The region, name of the candidate, and any identifying factors will be removed from the ELT voting package. ELT will vote and provide the Safety Leadership team will the alpha numeric package that received the most votes. The Safety Grand Champion will be announced via social media and recognized by the staff in which office the candidate resides.

#### 6.0 References

None

#### 7.0 Attachments

None



"Freedom from Danger"

# Scaffolding

#### 1.0 Purpose

1.1. The purpose of this standard is to protect personnel whose work activities involve scaffolding.

#### 2.0 Scope

2.1. This standard applies to all scaffold types on all BNB projects.

#### 3.0 Responsibility

#### 3.1 Project Management

- 3.1.1. It is the responsibility of the BNB Project Management & Supervision to ensure that adequate submittals are received, reviewed, and filed for subcontractors who will be erecting, dismantling, and working from scaffolding.
- 3.1.2. Also, BNB Project Management & Supervision must ensure that safe practices are followed during scaffold erection, dismantling, and use.

#### 3.2 Workers

3.2.1. Workers whose activities involve scaffolding are responsible for following the requirements of their employer, BNB, and applicable federal/state/local programs.

#### 4.0 Definitions

- 4.1. Adjustable suspension scaffold a suspension scaffold equipped with a hoist(s) that can be operated by an employee(s) on the scaffold.
- 4.2. **Bearer (putlog)** a horizontal transverse scaffold member (which may be supported by ledgers or runners) upon which the scaffold platform rests, and which joins scaffold uprights, posts, poles, and similar members.
- 4.3. **Bricklayers' square scaffold** a supported scaffold composed of framed squares which support a platform. *Cleat* means a structural block used at the end of a platform to prevent the platform from slipping off its supports. Cleats are also used to provide footing on sloped surfaces such as crawling boards.
- 4.4. **Competent person** 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.
- 4.5. **Coupler -** a device for locking together the tubes of a tube and coupler scaffold.
- 4.6. **Exposed power lines** electrical power lines which are accessible to employees, and which are not shielded from contact. Such lines do not include extension cords or power tool cords.
- 4.7. **Fabricated decking and planking** manufactured platforms made of wood (including laminated wood, and solid sawn wood planks), metal or other materials.
- 4.8. **Fabricated frame scaffold (tubular welded frame scaffold)** a scaffold consisting of a platform(s) supported on fabricated end frames with integral posts, horizontal bearers, and intermediate members.
- 4.9. **Guardrail system** a vertical barrier, consisting of, but not limited to, toprails, midrails, toeboards, and posts, erected to prevent employees from falling off a scaffold platform or walkway to lower levels.
- 4.10. Hoist a manual or power-operated mechanical device to raise or lower a suspended scaffold.
- 4.11. Ladder jack scaffold a supported scaffold consisting of a platform resting on brackets attached to ladders.
- 4.12. Ladder stand a mobile, fixed-size, self-supporting ladder consisting of a wide flat tread ladder in the form of stairs.
- 4.13. Landing a platform at the end of a flight of stairs.
- 4.14. **Masons' multi-point adjustable suspension scaffold** a continuous run suspension scaffold designed and used for masonry operations.
- 4.15. **Maximum intended load** the total load of all persons, equipment, tools, materials, transmitted loads, and other loads reasonably anticipated to be applied to a scaffold component at any one time.
- 4.16. Mobile scaffold a powered or unpowered, portable, caster or wheel-mounted supported scaffold.

# Health, Safety and Environmental Manual

"Freedom from Danger"

- 4.17. **Open sides and ends** the edges of a platform that are more than 14 inches (36 cm) away horizontally from a sturdy, continuous, vertical surface (such as a building wall) or a sturdy, continuous horizontal surface (such as a floor), or a point of access. Exception: For plastering and lathing operations the horizontal threshold distance is 18 inches (46 cm).
- 4.18. **Outrigger** the structural member of a supported scaffold used to increase the base width of a scaffold in order to provide support for and increased stability of the scaffold.
- 4.19. **Platform** a work surface elevated above lower levels. Platforms can be constructed using individual wood planks, fabricated planks, fabricated decks, and fabricated platforms.
- 4.20. **Pump jack scaffold** a supported scaffold consisting of a platform supported by vertical poles and movable support brackets.
- 4.21. **Qualified Person** one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.
- 4.22. **Rated load** the manufacturer's specified maximum load to be lifted by a hoist or to be applied to a scaffold or scaffold component.
- 4.23. Runner (ledger or ribbon) the lengthwise horizontal spacing or bracing member which may support the bearers.
- 4.24. **Scaffold** any temporary elevated platform (supported or suspended) and its supporting structure (including points of anchorage), used for supporting employees or materials or both.
- 4.25. Stair tower (Scaffold stairway/tower) a tower comprised of scaffold components, and which contains internal stairway units and rest platforms. These towers are used to provide access to scaffold platforms and other elevated points such as floors and roofs.
- 4.26. Step, platform, and trestle ladder scaffold a platform resting directly on the rungs of step ladders or trestle ladders.
- 4.27. **Supported scaffold** one or more platforms supported by outrigger beams, brackets, poles, legs, uprights, posts, frames, or similar rigid support.
- 4.28. **Suspension scaffold** one or more platforms suspended by ropes or other non-rigid means from an overhead structure(s).
- 4.29. **System scaffold** a scaffold consisting of posts with fixed connection points that accept runners, bearers, and diagonals that can be interconnected at predetermined levels.
- 4.30. **Tube and coupler scaffold** a supported or suspended scaffold consisting of a platform(s) supported by tubing, erected with coupling devices connecting uprights, braces, bearers, and runners.
- 4.31. **Unstable objects** items whose strength, configuration, or lack of stability may allow them to become dislocated and shift and therefore may not properly support the loads imposed on them. Unstable objects do not constitute a safe base support for scaffolds, platforms, or employees. Examples include, but are not limited to, barrels, boxes, loose brick, and concrete blocks.

#### 5.0 Procedure

#### 5.1 BNB Required Submittals for Scaffolding Erectors & Suppliers

- 5.1.1. Site-Specific Safety and Health Program that includes Scaffolding
- 5.1.2. Pre-Task Plan (PTP) and Job/Activity Hazard Analysis (J/AHA)
- 5.1.3. The name(s) of the Qualified Person designated by the Subcontractor. Documentation of the Qualified Person's training, experience, and knowledge of the type of scaffolding being erected by the Qualified Person.
- 5.1.4. The name(s) of the Competent Person. Documentation of the Competent Person's training, experience, and knowledge of the scaffolding to be erected.
- 5.1.5. Valid documentation from the manufacturer of the scaffolding that proves through specific signed and stamped documentation that the scaffold complies with applicable scaffold regulations. The documentation shall include, but not be limited to:
  - 5.1.5.1. Testing performed in accordance with the Scaffolding Shoring & Forming Institute's SC 100-05/2005 (or most current test standard) recommended testing standard. Information on the SSFI SC 100-05/2005 standard can be found at <a href="https://www.ssfi.org">www.ssfi.org</a>.
  - 5.1.5.2. Testing other than SSFI SC 100-05/2005 shall be equivalent and performed under the supervision of a qualified registered Professional Engineer who is licensed in the State where the testing was performed and where the scaffold is to be used.
  - 5.1.5.3. Based on valid testing, the Subcontractors scaffold provider and/or erector shall provide the Maximum Allowable Loading per scaffold leg or per scaffold frame.



"Freedom from Danger"

- 5.1.6. Scaffolds manufactured *outside* of the continental United States shall have valid documentation to prove the scaffolding meets applicable regulations and has been tested in accordance with the Scaffolding Shoring & Forming Institute's (SSFI) SC 100-05/2005 recommended testing standard. Valid testing documentation must be submitted indicating that the paint and/or coating(s) on the scaffold components do not contain any hazardous materials such as lead, chromium, etc.
- 5.1.7. Scaffolds that are designed by a qualified registered Professional Engineer (P.E.) shall include, at a minimum, the following documentation:
  - 5.1.7.1. Drawings of the bracing pattern(s) for the scaffolding;
  - 5.1.7.2. Drawings of the types and locations of the ties between the scaffold and the structure (tension, compression, and sway ties).
  - 5.1.7.3. Written instructions on how to erect the scaffolding;
  - 5.1.7.4. Written instructions on how to inspect the scaffolding;
  - 5.1.7.5. The maximum allowable loading per scaffold bay and scaffold tier;
  - 5.1.7.6. Any other information the P.E. deems necessary to erect, inspect and maintain a safe scaffold;
  - 5.1.7.7. The allowable deflection in a scaffold leg (when the leg is measured from the uppermost frame to the bottom of the supporting frame at ground, deck, or floor level).
  - 5.1.7.8. The method of accessing each working level (tier).
  - 5.1.7.9. The areas where the scaffold can be enclosed with a tarp or other approved enclosure material.
  - 5.1.7.10. The locations and types of ties to be used when a scaffold is fully or partially enclosed.

#### 5.1.8 BNB Required Submittals for Scaffold Users

- 5.1.8.1. Site-Specific Safety and Health Program that includes Scaffolding
- 5.1.8.2. Pre-Task Plan (PTP) and Job/Activity Hazard Analysis (J/AHA)
- 5.1.8.3. The name(s) of the "Competent Person" and/or "Qualified Person" designated by the Subcontractor
- 5.1.8.4. Proof of scaffold awareness training for all users

#### 5.1.9 BNB Scaffolding Erection & Dismantling Requirements

- 5.1.9.1. Scaffolds are to be erected, modified, or altered and dismantled under the supervision of a Competent Person and with good engineering practices.
- 5.1.9.2. Erecting and dismantling of scaffolding shall be performed using fall protection systems at an elevation of six feet or greater unless approved in writing by BNB. Scaffold erection must be done with 100% fall protection.
- 5.1.9.3. Erectors must have training on fall awareness, site-specific fall hazards, fall protection equipment to be used, and rescue procedures.
- 5.1.9.4. If erectors tie off to scaffold components, follow the recommendations of the manufacturer.
- 5.1.9.5. Interior Drop-Down Ladders / Exterior Stair Tower for access is highly recommended with Typical Exterior Ladder as a last resort.
- 5.1.9.6. Scaffolds must be fully planked with scaffold-grade planks. Planks shall overhang the ledger or support by a minimum of 6" and a maximum of 18".
- 5.1.9.7. Scaffolds more than 4x higher than they are wide must be stabilized as per CAL/OSHA / WAC Requirements.
- 5.1.9.8. Pins must be in place at all connections throughout the scaffolding.
- 5.1.9.9. Scaffolds must be setup level and on a firm foundation.
- 5.1.9.10. Handrails, mid rails, and toe boards must be provided on all scaffold types where platform height is 6' or higher.
- 5.1.9.11. All guardrail systems shall include toe boards throughout the entire system. Toe boards must be installed with a minimum of  $1"x\ 4"$  inches nominal height. If an exterior screen extends from the ground to the top platform of the scaffolding, toe boards are not required.
- 5.1.9.12. Cross braces will NOT be used as a top or mid-rail. Horizontal members must be installed on all guardrail systems where the scaffold platform is elevated six feet or greater.
- 5.1.9.13. Rolling scaffolds shall be equipped with locking wheels, guardrails, diagonal bracing (if applicable) and outriggers (when applicable).



"Freedom from Danger"

- 5.1.9.14. Each scaffold shall be designed and constructed using a dead load safety factor that will ensure the scaffold supports, without failure, its own weight and 4 times the maximum intended working (live) load applied or transmitted to it.
- 5.1.9.15. Scaffold planks shall meet the current safety criteria in ANSI A10.8, 29 CFR 1926 Subpart L, Southern Yellow Pine Inspection Bureau, West Coast Inspection Bureau and/or manufacturer's recommendations.
- 5.1.9.16. Scaffolds shall be erected in accordance with the scaffold manufacturer's recommendations.
- 5.1.9.17. Scaffolds that cannot be erected in accordance with the scaffold manufacturer's recommendations shall be designed and evaluated by a Qualified Registered Professional Engineer who is registered in the State where the work is being performed.
- 5.1.9.18. Controlled Access Zones must be established around scaffolding erection/dismantling areas to prevent other personnel from being exposed to potential struck-by hazards.
- 5.1.9.19. When scaffold trusses (put logs) are used in conjunction with the scaffolding, the Subcontractor/scaffold company/scaffold erector shall provide:
  - 5.1.9.19.1. The Maximum Allowable Loading per bay or per square foot that is supported by the trusses (put logs).
  - 5.1.9.19.2. Installation use and inspection requirements (in accordance with the manufacturer's recommendations and qualified engineering services).
  - 5.1.9.19.3. Specialized conditions and/or situations will have to be identified prior to submitting the scaffold bid. These conditions will be identified, and the bidder shall provide valid documentation that the scaffold set up and use is in compliance with applicable regulations and scaffold manufacturer's recommendations.
- 5.1.9.20. All scaffold components shall be installed by the Competent Person per manufacturer specification.
  - 5.1.9.20.1. Scaffolding that has not been erected in a manner that allows for all its parts to fit together as was originally intended by its manufacturer shall not be utilized.
  - 5.1.9.20.2. Tie wire shall not be utilized as a method for securing scaffold sections or components together unless expressly recommended and indicated in writing as being approved by the scaffold manufacturer. Tie wire shall not be used to take the place of the scaffold manufacturer's standard guardrail system components.
  - 5.1.9.20.3. Not all types of scaffolding will work for any given geometrical configuration. For example,

    Tubular Weld sectional scaffolding would not be the proper choice for the Competent Person to
    erect around a circular structure-- tube and clamp (coupler) would be the appropriate selection
    for that configuration.

#### 5.1.10 BNB Scaffolding Inspection & Tagging Requirements

- 5.1.10.1. Scaffolds must be inspected by a competent person; daily before each shift; or after any occurrence that might compromise its structural integrity.
- 5.1.10.2. After inspection, if the scaffold is deemed safe, a competent person must sign and date a green tag at the base of each scaffold ladder or access way to indicate the scaffold is safe to access and use.
- 5.1.10.3. After inspection, if the scaffold is deemed unsafe, a competent person must place a red tag or red danger tape at each ladder or access way to indicate the scaffold is not currently safe to be accessed.
- 5.1.10.4. If the scaffold must be altered and/or is partially erected/incomplete a red tag may need to be used to identify the scaffold as under modification and not safe for use.
- 5.1.10.5. All scaffolds are deemed not usable until the scaffold has been inspected and signed off by a competent person(s).

#### 5.1.11 BNB Scaffolding Use Requirements

- 5.1.11.1. When BNB "owns/buys-out" scaffolding or stair towers that have been erected on site, all trade partners who will access BNB's scaffold must sign a waiver and release of liability.
- 5.1.11.2. No objects and/or equipment shall be used on top of scaffold platforms to increase work height.



"Freedom from Danger"

- 5.1.11.3. Never leave a scaffold in an unsafe condition.
- 5.1.11.4. Never climb scaffold braces or guardrail systems-- use the proper ladders and stairs.
- 5.1.11.5. Check for capacities and do not overload.
- 5.1.11.6. Rolling scaffolds wheels shall be locked when work is being performed. Surfing, skating, and riding is prohibited unless proper braking mechanisms are installed, and the floor is free of surface encumbrances or obstacles.
- 5.1.11.7. Perry type and other similar types of rolling scaffolds platforms shall have guardrails installed when used as a working platform when working 6' or higher.
- 5.1.11.8. Prior to any modification of scaffolding (i.e., guardrail removal) the competent person who owns control of the scaffolding must be notified and approve any modifications of the scaffolding. The Competent Person must red tag the scaffold prior to and during the course of modifications. Also, the subcontractor's competent person must ensure that affected personnel are notified.
- 5.1.11.9. When forklifts/tele-handlers are used to hoist equipment/material onto scaffolding, the use of a spotter and/or a controlled access zone must be established around the forklift to prevent other personnel from being exposed to potential struck-by hazards.

#### 5.2 Hazards

#### 5.2.1. Hazards associated with scaffold use may consist of the following:

- 5.2.1.1. Falls from scaffold
- 5.2.1.2. Collapse of scaffold
- 5.2.1.3. Tip over of scaffold
- 5.2.1.4. Struck-by hazards from falling material/equipment.
- 5.2.1.5. Electrocution or shock from unprotected power lines or
- 5.2.1.6. Electrocution or shock from electrical cords that contact scaffolding

#### **5.3 Hazard Controls**

#### 5.3.1 Engineering Controls

- 5.3.1.1. Scaffolding is actually a type of engineering control for hazard elimination since it may allow workers to safely reach work areas at height while being completely guard railed in. However, the use of scaffolding may introduce additional hazards especially during erection and dismantling.
- 5.3.1.2. With that being said, types of scaffolding that may allow for safer erection should be considered. For example, certain manufacturers of scaffolding allow erectors to tie off to scaffold components during erection.
- 5.3.1.3. If overhead utilities such as energized power lines are present near scaffolding, The clearance between scaffolds and power lines shall be as follows:
  - 5.3.1.3.1. Scaffolds shall not be erected, used, dismantled, altered, or moved such that they or any conductive material handled on them might come closer to exposed and energized power lines. Exception: Scaffolds and materials may be closer to power lines than specified above where such clearance is necessary for performance of work, and only after the utility

#### 5.3.2 Administrative Controls

#### 5.3.2.1. Administrative controls for scaffolding consist of:

- 5.3.2.1.1. Erection of scaffolding by competent personnel
- 5.3.2.1.2. Scaffold inspections and tagging by competent personnel
- 5.3.2.1.3. Use of scaffold by scaffold-safety trained workers

#### 5.3.3 Personal Protective Equipment



"Freedom from Danger"

5.3.3.1. To mitigate the consequences if an accident or failure does occur, procedures must address Personal Protective Equipment (PPE). For example:

- 5.3.3.1.1. Hard Hat ANSI Z89.1
- 5.3.3.1.2. Safety glasses ANZI Z87.1
- 5.3.3.1.3. Work boots ASTM F2413
- 5.3.3.1.4. Reflective vest type II, high visual
- 5.3.3.1.5. Gloves
- 5.3.3.1.6. Personal fall arrest/restraint equipment
- 5.3.3.1.7. Tool leashes that prevent tools from falling
- 5.3.3.1.8. Energized power line shielding

#### 5.4 Training

- 5.4.1. All personnel engaged in scaffolding activities must be trained on their employer's safety program, site-specific program/plan, Pre-Task Plan (PTP) and Job/Activity Hazard Analysis (J/AHA).
- 5.4.2. Personnel must be adequately trained to erect, dismantle, and modify scaffolding by a Competent Person. Additionally, they may also be required to have thorough fall protection training due to their unique fall exposures during scaffold erection.
- 5.4.3. Personnel who inspect scaffolding and supervise others during scaffold activities must be adequately trained to be a Competent Person.
- 5.4.4. Lastly, all personnel who access and/or work from scaffolding must have been trained on scaffold user awareness.

#### 6.0 References

Fed/OSHA CFR 1926 Subpart L - Scaffolds

Cal/OSHA T8 CCR Subpart 4 Article 21 - Scaffolds

L&I WAC Title 296-874 - Scaffolding

<u>L&I WAC 296-800 – Core Safety</u>

#### 7.0 Attachments

<u>Aerial Work Platform Inspection Checklist</u>

Scaffold Inspection Checklist

Pre-Task Plan

# Health, Safety and Environmental Manual

"Freedom from Danger"

# Site Security Policy

#### 1.0 Purpose

- 1.1. BNBuilders projects consist of ground up new construction and interior renovation work. Many of our clients operate in competitive markets and ask us not to disclose specific information about them including requirements to sign nondisclosure documents. We need to do everything we can to establish good fundamentals for site security on our projects.
- 1.2. The purpose of this document is to establish a security strategy to prevent unlawful entry into our sites. Our mitigations include physical barriers, monitoring systems, security personnel (if agreed upon) and other deterrents. At times projects may include background checks to be able to work on the jobsite. The plan also includes quality control measures that guard against failures and a plan to increase communication.

#### 2.0 Scope

2.1. Each project will be responsible for updating their Site Security Plan as site conditions change. Considerations need to be made where existing facility security will serve as our site security. These considerations will include but are not limited to what is in place passed our locked doors and if someone needs to access our area in an emergency. Our goal is to implement a security strategy that meets the expectation of our clients and provides a layer of protection to the project.

#### 3.0 Responsibility

3.1. Each Project Management team is responsible for ensuring that all jobsites are secured to prevent unlawful access. The guidelines established below must be adhered to in order to accomplish the requirements outlined in this document.

#### 4.0 Site Specific Security Strategy

#### 4.1 Construction Hours

List Hours here

4.2 BNB Staff Contacts list for Security:

List staff here

4.3 Off Hours Contact List

List contacts here

#### 5.0 Access to Site and Logistics Plan

#### 5.1 Check in Process

5.1.1. Our sites currently use an electronic check in and screening process which must be filled out before the start of every shift. Anyone that does not follow this process is not allowed on site. Any new worker to the site is required to go through our site orientation which covers the site logistics plans,



"Freedom from Danger"

appropriate access to the site and location of crew break areas. No work off hours without supervision and approval from BNBuilders is allowed.

Any site-specific items pertaining to your project should be highlighted in this section.

#### 5.2 Crew counts should be addressed per the following

Date Range Here

### 6.0 Signage and Posting

- 6.1. Check In at office
- 6.2. Required PPE
- 6.3. Security postings that the site is under video surveillance (Included at tower cranes)
- 6.4. Posting indicating "authorized personnel only"
- 6.5. Remove existing signs that would attract unauthorized personnel
- 6.6. Premises entry consent to search

#### 7.0 Site Fencing and Barricade Strategies

#### 7.1 Physical Barriers:

7.1.1. **Perimeter Site Fencing:** When possible use 6-foot Chain link fencing around site property line. Avoid using T stands. Any protruding items in pedestrian areas and/or walkways are prohibited.

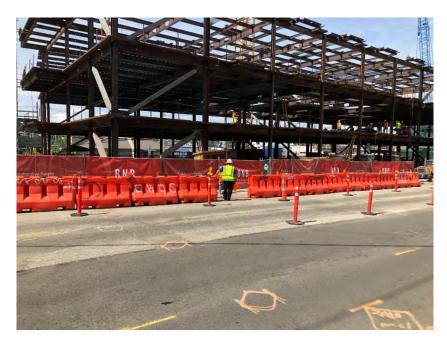


Figure 1 Sites are enclosed with chain-link. All entrances are locked up using a chain and combo style padlock.





Figure 2 Photo pedestrian traffic delineation



Figure 3 Photo of site fencing

7.1.2. Plywood Walls Around Access to Tower Cranes: 8-foot-high plywood walls will be constructed around the tower crane vertical sections at all floors to deter access to crane. Locking assemblies or storing weighted items that can not be easily moved should be considered to eliminate entry. Sign shall be posted stating "Authorized Personnel Only"



"Freedom from Danger"

**7.1.3. Padlocks:** Padlocks must be suitable for commercial use. Padlocks with shackle guards are preferred. Please keep in mind padlocks are only as good as the hardware they are being used with.

#### 8.0 Site Equipment Security:

#### 8.1 Tower Crane Security

8.1.1. In addition to the plywood walls, there should be a hasp lock at the top of the crane to prevent access to the jib and cab.



Figure 4 An access door is provided at the Tower Crane enclosure. These doors are equipped with a hasp and padlock that only the site management and Tower Crane operator are provided keys to. Doors should be locked up at the end of each day by site foreman during final walkthrough at the end of each day.

#### 8.2 All terrain and warehouse forklifts

8.2.1. Remove keys to equipment daily and park in a secure location. Equipment may be used to block other areas, if feasible.

#### 8.3 Scissor Lifts

8.3.1. Must be parked and secured where they cannot be used in off-hours.

#### 8.4 Flammable Storage

8.4.1. Secured location must be identified for flammable storage. Daily safety audits must take place to make sure flammables are not left unsecured.

#### 8.5 Tools and Equipment



"Freedom from Danger"

8.5.1. Must be stored and locked in metal containers. Containers shall be secured in such a way to prevent their movement or removal from the site.

#### 9.0 Secure Areas Within the Site

- 9.1. As our projects progress, continued evaluations must be made to keep the site secure and protect new installations and finishes. Areas to consider include but are not limited to:
  - 9.1.1. Transformer/Electrical room (future)
  - 9.1.2. Generator Room (future)
  - 9.1.3. Future Enclosure plans to secure Building

### 10.0 Lighting

- 10.1. The following considerations should be made for lighting:
  - 10.1.1. What areas can/should be fully lit
  - 10.1.2. What areas cannot/should not be fully lit
  - 10.1.3. Is access and egress lighting provided for crews
  - 10.1.4. Could lighting pose a hazard to near by pedestrian and vehicle traffic
  - 10.1.5. Sites may use motion sensor lighting at access points to discourage unlawful entry onto the jobsite. Tower cranes and other fixed locations may also be utilized to cast lighting onto lower-level areas.

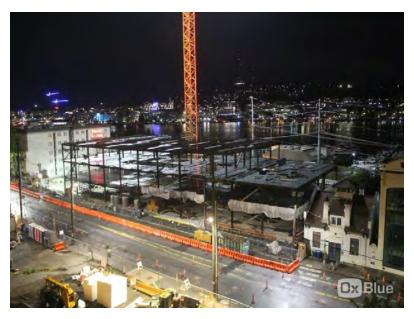


Figure 5 Site Ox Blue Camera photo showing site lighting.

# Health, Safety and Environmental Manual

"Freedom from Danger"

#### 11.0 Site Monitoring System

#### 11.1 During Work Hours

- 11.1.1. Each Jobsite to establish protocol for access to the project. Background checks, if applicable, must be in place before personnel are allowed on the site.
- 11.1.2. Many of our projects are near heavily traveled areas. Coordination between local police officers and our traffic control teams may be necessary.

#### 11.2 Off Hours Site Monitoring on Projects in unoccupied facilities

11.2.1. Create a list identifying who is on call from BNB:

#### Add list here

- 11.2.2. Onsite surveillance being monitored by an off-site security surveillance company should be in place. A plan for communication between the security company, local authorities and BNB should be in place with an emphasis on the relay of information. Surveillance equipment will be strategically placed and should be calibrated on a weekly basis to maintain the appropriate vantage point as the project progresses.
- 11.2.3. BNBuilders recommends that a once a week quality control check of the surveillance systems is performed and documented to ensure the system operates as intended.

#### 11.3 Monitoring Process

#### 11.3.1. If motion sensors or cameras detect an interruption.

Example of process

11.3.1.1.	Monitoring company shall
11.3.1.1.	1. notify Police Dispatch
11.3.1.1.2	2. keep track of notification to arrival time
11.3.1.1.0	B. maintain dialogue with Police about on-site activity and requests an ETA
11.3.1.1.4	4. Notifies BNB after hour contact

#### Example of process with onsite security

xample	e ot process with	onsite security
11.3	3.1.2. Securit	y company shall
	11.3.1.2.1.	notify Police Dispatch
	11.3.1.2.2.	keep track of notification to arrival time
	11.3.1.2.3.	maintain dialogue with Police about on-site activity and requests an ETA
	11.3.1.2.4.	Notifies BNB after hour contact

- 11.3.2. On Site Security to monitor site until police show up.
- 11.3.3. Monitor service forwards a report to BNB for every incident.

#### 12.0 On Site Security (if agreed upon)

Training of the monitoring process will be conducted between off duty security and BNB supervision. Standard Operating Procedures should be developed. Ensure the SOP's are being executed.

#### 12.1 Overview



"Freedom from Danger"

Create overview of how site security works.

#### 12.2 Onsite Security Initial Check-in and Shift Changes

Review steps for check in at start of shift between Security and BNB personnel on-site.

#### 12.2 Shift Responsibilities:

List shift responsibilities

#### 12.4 In case of an incident

12.4.1. List steps between Monitoring company and site security or BNB supervision. If someone is to come into contact with the intruder, they are to take note of what the intruder is wearing, their ethnicity, hair color, license plates, visible weapons, or any other description that will assist the officers upon arrival in profiling the suspect in the case they try to flee. AT NO POINT SHOULD A SECURITY GUARD PHYSICALLY CONFRONT INTRUDER. The security guards are to leave the apprehending of the suspect to the Police. As follow up to any incident, the security guard will need to provide a written record of the incident onsite. This record will be completed using the updated Security Report Template provided by BNB.

#### 13.0 Notification Process

- 13.1. BNBuilders to communicate weekly any security concerns in OAC. Someone from the project team is always assigned to take a call during off-hours. Follow contract language for reporting.
- 13.2. Reports should include events that have taken place on adjacent properties.
- 13.3. The Report will include at a minimum the information listed below: Reference attached report form.
- 13.4. BNB Report # and Police report #
  - 13.4.1. Project Name:
  - 13.4.2. Project Number:
  - 13.4.3. Project Address:
  - 13.4.4. Client:
  - 13.4.5. Supervisor Contact Information
    - 13.4.5.1. Superintendent(s):
    - 13.4.5.2. Project Manager(s):
    - 13.4.5.3. Primary BNB Team Security Contact:
    - 13.4.5.4. Secondary BNB Team Security Contact:
    - 13.4.5.5. Owner Representative Contact(s):
  - 13.4.6. Incident Type
    - 13.4.6.1. Property Damage/Vandalism
      - 13.4.6.1.1. List of damages
    - 13.4.6.2. Break In/Burglary
      - 13.4.6.2.1. List of stolen items
  - 13.4.7. Description of Incident Specifics
    - 13.4.7.1. Date:
    - 13.4.7.2. Time: \_\_: \_\_ AM/PM
    - 13.4.7.3. Location Onsite:
    - 13.4.7.4. How was team notified of incident?
    - 13.4.7.5. Was local law enforcement notified (Police, SWAT, etc.)?
    - 13.4.7.6. Has there been a case number provided by local law enforcement?
      - 13.4.7.6.1. Case number:
    - 13.4.7.7. Were other Emergency Services Notified (Fire, Paramedics, etc.)?
    - 13.4.7.8. Were any construction personnel onsite at time of incident?
    - 13.4.7.9. Was news media involved?

# Health, Safety and Environmental Manual

"Freedom from Danger"

- 13.4.8. Incident Description (include pictures, other reports, etc.):
  - 13.4.8.1. Property Damage Yes/No
  - 13.4.8.2. Describe Damage
  - 13.4.8.3. Approximate Damage Value \$ \_\_. \_\_
- 13.4.9. Schedule Impacts Yes/No
  - 13.4.9.1. Describe Impact
  - 13.4.9.2. Approximate Impact Duration
- 13.4.10. Client Notification
  - 13.4.10.1. Has client been notified?
  - 13.4.10.2. When/How Client was notified
  - 13.4.10.3. Decision if charges are to be filed.
- 13.4.11. Description of in place security measures (Security System, Security Guard(s), Fencing, Site Lighting, Gate access, Material/Equipment Storage, etc.)
- 13.4.12. Have there been any similar incidents?
- 13.4.13. Have there been any common themes between other incidents? (Day of week, time of day, entry points, targeted items/equipment/materials, etc.)
- 13.4.14. Description of additional measures required to reduce potential future incidents:

Create one-page training document that shows current and new members the importance of this document

Consider when implementation of Crisis management plan ties to this plana and utilize the Buy Time Statement if media is involved.

#### 14.0 End of day sign off

This is done on a per project basis and created specifically for each project.

"Freedom from Danger"



# Site-Specific Orientation

#### 1.0 Purpose

- 1.1. The site-specific orientation is designed to introduce personnel to BNBuilders Safety, Health, and Environmental requirements. The site-specific orientation is intended to be a brief overview and does not take the place of task safety, health and environmental training. The personnel's direct supervisor will need to determine which additional training courses the new personnel must complete prior to being assigned to specific job tasks.
- 1.2. Prior to starting any work on a BNB project, a site-specific orientation is to be conducted.

#### 2.0 Scope

2.1. The scope of this policy covers all site-specific orientation components required for both BNB employees and subcontractor employees.

#### 3.0 Responsibility

#### 3.1 Project Management

3.1.1. Project management and supervision are responsible for ensuring all BNB employees and subcontractor employees are trained on their site-specific orientation prior to performing any work. If BNB Safety is not available to conduct site orientation, it is the responsibility of project management and supervision to conduct site orientation for new employees.

#### 3.2 Workers

3.2.1. All employees must be trained on the site-specific orientation prior to performing any work.

#### 4.0 Definitions

4.1. Plan - a detailed proposal for doing or achieving something

#### 5.0 Procedure

#### 5.1 General Procedures

#### 5.1.1. The following items must be covered in the site-specific orientation:

- 5.1.1.1. Project Location project address
- 5.1.1.2. BNBuilders approach to safety
- 5.1.1.3. Reporting procedures
- 5.1.1.4. Safety audit
- 5.1.1.5. Disciplinary policy
- 5.1.1.6. Site logistics access / egress, muster point, evacuation route, sprinkler shut-off
- 5.1.1.7. Emergency response with a map from the project to nearest clinic and hospital
- 5.1.1.8. Site Safety Board First aid kit, SDS book, PPE, live utility plans, etc.
- 5.1.1.9. PPE requirements
- 5.1.1.10. Certified trainings
- 5.1.1.11. Hazard Communication
- 5.1.1.12. Pre-task planning
- 5.1.1.13. Material Handling procedures
- 5.1.1.14. Tool inspections
- 5.1.1.15. Excavations / Dig Permit



# Health, Safety and Environmental Manual "Freedom from Danger"

5.1.1.16.	Live Utility Plan / Map
5.1.1.17.	Hot Work Permit
5.1.1.18.	Fall Protection – Site-specific plan
5.1.1.19.	Ladder use
5.1.1.20.	Lifts & Scaffolds
5.1.1.21.	Caution / Danger tape procedures
5.1.1.22.	Electrical
5.1.1.23.	Steel erection (if applicable)
5.1.1.24.	Silica procedures - Table 1 for WA
5.1.1.25.	Employee empowerment

5.1.2. Any other hazards specific to the project must also be included in the site-specific orientation.

#### 6.0 References

<u>L&I WAC 296-800 – Core Safety</u>

CALOSHA - Guidance for Construction Employers

#### 7.0 Attachments

Site-Specific Orientation PowerPoint Template

Pre-Task Plan

Job Hazard Analysis

**Hot Work Permit** 

**Dig Permit** 



"Freedom from Danger"

# Sprinkler Impairment

#### 1.0 Purpose

1.1. The purpose of this procedure is to provide a system that minimizes the risks associated with sprinkler system impairment. Unplanned sprinkler impairment as a result of broken heads, dislodged pipes, out-of-service systems during major demolition and/or construction, or an emergency impairment resulting from a broken supply line or service outage may pose a risk of flooding and/or the spread of fire. In the event of flooding, mold may then become a hazard which must be cleaned, and the source of moisture eliminated.

#### 2.0 Scope

2.1. This procedure applies to all sprinkler impairments -whether planned (for replacement, repair, or maintenance work), or unplanned. See <u>Utility Avoidance Policy</u> for more information.

#### 3.0 Responsibility

#### 3.1 Project Management

#### 3.1.1. BNB Project Management & Supervision are responsible for:

- 3.1.1.1. Issuing, signing, logging, posting, tracking, and closing out all sprinkler impairments.
- 3.1.1.2. Tracking all current and outstanding impairments and ensuring that subcontractors receive appropriate notice if impairment is not properly closed out by the planned restoration date and that reinstatement must occur as soon as possible.
- 3.1.1.3. Ensuring that sprinkler sections and valves are clearly marked and labeled so that specific sections can be found easily in the event of an emergency.
- 3.1.1.4. Ensuring all sprinkler valves are in working order.
- 3.1.1.5. Identifying Halon fire suppression systems and working with the property owner to establish protective measures.

#### 3.2 Workers

3.2.1. Workers responsible for the fire sprinkler impairment shall request permission from BNB prior to the impairment of the fire sprinkler system. After restoring the impaired fire sprinkler system, the responsible workers shall notify BNB.

#### 4.0 Definitions

- 4.1. **Foam Fire Suppression System** typically used in areas exposed to severe fire hazards and helps to contain the fire more effectively than water. It can be used with either a wet or dry system, and in certain cases, water may be mixed with the foam to better fight the fire or increase pressure in the pipes.
- 4.2. Dry Chemical Fire (Gaseous) Suppression System typically used in areas where water damage is a primary concern, such as museums or computer rooms. These systems use traditional sprinkler pipes and heads but rely on carbon-based chemicals such as halon to suppress the fire. Halon works by absorbing the oxygen in the room, which keeps the fire from spreading.
- 4.3. **Impairment** a condition resulting from an event that causes all or part of a fire sprinkler system to be out of service.
- 4.4. **Emergency Impairment** Unplanned sprinkler impairment resulting from a broken sprinkler line or head, or a break or outage of the sprinkler supply water service.

# Health, Safety and Environmental Manual

"Freedom from Danger"

- 4.5. Planned Impairment Planned sprinkler impairment for maintenance, alteration, or construction activities.
- 4.6. **Designated Ownership Contact** Person designated by the owner to contact for all activities relating to the fire sprinkler impairment. (Building Owner/Property Manager/Building Engineer)

### 5.0 Procedure

#### 5.1 Planned Impairments

#### 5.1.1. When applicable, the following are guidelines for when sprinkler impairment is planned:

- 5.1.1.1. Notify local fire department
- 5.1.1.2. Provide additional firefighting equipment
- 5.1.1.3. Ensure adequate control of sprinkler system and labeling/tagging of affected valves
- 5.1.1.4. Ensure adequate training/job planning
- 5.1.1.5. Plan to do the work when the facility is not operating, and/or shutdown hazardous processes, if possible.
- 5.1.1.6. Follow applicable lock-out tag-out procedures when applicable.
- 5.1.1.7. Cap all sprinkler heads or otherwise provide appropriate protection in work areas prior to contractor commencing work.
- 5.1.1.8. Prohibit all Hot Work during fire sprinkler impairment:
  - 5.1.1.8.1. There may be instances where elements of the system are isolated specifically for hot work activities. In such cases, fire watch procedures and any other appropriate precautions as per the pre-task plan (PTP) must be implemented.
  - 5.1.1.8.2. Make ready fire hoses / fire extinguishers (confirm that fire extinguishers and/or fire hoses are on hand and in working order at every entrance and exit point of the affected work area)
  - 5.1.1.8.3. Confirm a fire watch is in place and appropriate notifications have been made.
- 5.1.1.9. The fire watch must be trained in the use of fire extinguishing equipment and be familiar with the Project Specific Fire Prevention Plan.
- 5.1.1.10. Any proposed modifications to the building sprinkler system (via submittal of engineering and/or shop drawings) must be approved and permitted by the PTP. NOTE: In some instances, drawings may also require certification from an engineer.
- 5.1.1.11. Standard Impairment Controls
  - 5.1.1.11.1. Whenever a sprinkler system is to be impaired, the applicable subcontractor/vendor must request permission from BNB Project Management & Supervision.
  - 5.1.1.11.2. BNB Project Management & Supervision is to notify:
    - 5.1.1.11.2.1. the local Fire Department, the alarm monitoring service, and security for all impairments.
    - 5.1.1.11.2.2. the Designated Ownership Contact of any sprinkler impairment.
    - 5.1.1.11.2.3. any tenants affected by the sprinkler impairment if building is occupied.

#### 5.2 Un-Planned Impairments

- 5.2.1. When applicable, the following are guidelines for when sprinkler impairment is not planned (emergency impairment):
  - 5.2.1.1. If an emergency impairment occurs, stabilize the situation and initiate impairment precautions with BNB Project Management & Supervision.
  - 5.2.1.2. Correct/repair the cause of the impairment.



"Freedom from Danger"

5.2.1.3. Ensure fire watch is in place.

#### 5.2.2. BNB Project Management & Supervision is to:

- 5.2.2.1. notify the Safety Manager and Designated Ownership Contact. Details are to include the time of impairment, apparent cause of the impairment, expected duration of the impairment, and extent of the impairment to building systems.
- 5.2.2.2. see that an Incident Report Form is completed by the appropriate parties and distributed within 24 hours of the incident.
- 5.2.2.3. notify the Divisional Safety Manager and Designated Ownership Contact when the impairment is cleared.

#### 5.3 Hazards

#### 5.3.1. In the event of a sprinkler system impairment that uses water, the following are potential hazards:

- 5.3.1.1. Flooding
- 5.3.1.2. Water Intrusion (See Environmental Policy)
- 5.3.1.3. Mold
- 5.3.1.4. Electrical Shock
- 5.3.1.5. Property Damage
- 5.3.1.6. Illness from contact with stagnant water inside fire lines
- 5.3.1.7. In the event of a Halon sprinkler system impairment, a potential hazard is Asphyxiation.

#### 5.4 Hazard Controls

#### 5.4.1 Engineering Controls

5.4.1.1. Cap, cover, flag, or otherwise protect sprinklers that have the potential to be damaged

#### 5.4.2 Administrative Controls

# 5.4.2.1. In facilities where sprinklers are energized and must not be damaged (see <u>Pressurized Lines</u> Policy):

- 5.4.2.1.1. Personnel must be trained on avoiding contact with sprinklers and lines
- 5.4.2.1.2. Signage and / or caution tape may be posted to warn personnel about the location(s) of sprinkler(s)
- 5.4.2.1.3. Stop blocks or other barricades may be used to prevent personnel/equipment travel into areas where sprinklers may be contacted
- 5.4.2.1.4. Make available sprinkler damage kits
- 5.4.2.1.5. Inform crews of sprinkler system shut-off method

#### 5.5 Training

#### 5.5.1. Personnel who work near sprinkler heads should be trained on:

- 5.5.1.1. The hazards of sprinkler impairment during New Hire Orientation
- 5.5.1.2. Notification, shut-off and response procedures for emergency impairment

#### 6.0 References

NFPA 15-17

L&I WAC 296-800 - Core Safety

<u>L&I WAC 296-155-260 – Fire Protection</u>

FEDOSHA 29 CFR 1910.159 – Automatic Sprinkler Systems

CALOSHA Title 8 Subchapter 7 Group 27 Article 159 - Automatic Sprinkler Systems

#### 7.0 Attachments

**Hot Work Permit** 



# Health, Safety and Environmental Manual "Freedom from Danger"

<u>Demolition Permit</u>

Pre-Task Plan

Aerial Work Platform Inspection Checklist



"Freedom from Danger"

# Steel Erection

#### 1.0 Purpose

1.1. Steel erection is a potentially high-risk task, so it is imperative that proper control measures are utilized to prevent incidents during steel erection. Certain control measures may eliminate hazards, but the process of risk elimination must be started in advance of the work taking place. This standard outlines the hazards and controls associated with steel erection.

#### 2.0 Scope

2.1. Any BNBuilders project that will erect steel must use this standard as a guideline for ensuring proper control measures are in place to eliminate risk. Steel erection activities include hoisting, connecting, welding, bolting, and rigging structural steel, steel joists and metal buildings; installing metal deck, siding systems, miscellaneous metals, ornamental iron and similar materials; and moving from point-to-point to perform these activities.

#### 3.0 Responsibility

#### 3.1 Designers/Architects/Engineers

3.1.1. Designers/Architects/Engineers have the responsibility to eliminate risk through design of the structure and/or process by using methods such as off-site fabrication and assembly.

#### 3.2 Project Management

- 3.2.1. BNB Project Management and Supervision has the duty to ensure that controls have been enacted as early and effectively as possible to eliminate risk. They must communicate with the steel erection subcontractor well in advance of the subcontractor's mobilization on site.
- 3.2.2. BNB Project Management and Supervision must ensure that steel erection subcontractors are provided with a written notification to proceed (see attachment).
- 3.2.3. BNB Project Management and Supervision must ensure adequate access roads into and through the site for the safe delivery and movement of derricks, cranes, trucks, other necessary equipment, and the material to be erected.
- 3.2.4. BNB Project Management and Supervision must ensure a firm, properly graded, drained area, adequately compacted to support the intended loads, readily accessible to the work with adequate space for the safe storage of materials and the safe operation of the erector's equipment.

#### 3.3 Subcontractors

3.1.1. Subcontractors are responsible for attending the preconstruction meeting.

#### 3.4 Workers

3.4.1. Workers engaged in steel erection are responsible for working in a safe manner and following safety requirements.

#### 4.0 Definitions

4.1. **Competent Person** - One who can identify existing or predictable hazards in surroundings or working conditions which are dangerous to employees who is authorized by the nature of their position to take prompt corrective action. This person must have knowledge of the requirements for steel erection.



"Freedom from Danger"

4.2. **Multiple Lift Rigging** - A rigging assembly manufactured by wire rope rigging suppliers that facilitates the attachment of up to 5 independent loads to the hoist rigging of crane.

#### 5.0 Procedure

#### 5.1 Hazards

5.1.1. Hazards associated with steel erection have potentially lethal repercussions if not properly controlled. Hazards may consist of inclement weather, falls, struck-byes, unstable loads, unsafe rigging practices, structural collapse, crane tip overs, fire, flash burn, electrical shock, property damage, injury, and more.

#### 5.2 Engineering Controls

#### 5.2.1. Fall Prevention:

5.2.1.1. Reduce the number of people who need to work at height, e.g. through off site manufacture or prefabrication. Give priority to collective measures over individual measures, e.g. fixed edge protection is preferable to every worker wearing fall prevention equipment. Consider the addition of nets/outrigger platforms to cover shafts/openings below the work. Other fall exposures could be controlled by using aerial work platforms to access the work area. Another engineering control is to install steel posts either inside of curbs or attached to the outside of the curb. This practice will enable decking contractors to utilize the guardrail cables for fall protection at the openings—see photos below.

#### 5.2.2. Struck by Prevention:

5.2.2.1. Control falling objects by installing netting or other overhead protection. Barricade the area within swing radius of crane counterweights to prevent access by personnel.

#### 5.3 Administrative Controls

- 5.3.1. An administrative control to reduce the consequences of dropped items would be to establish controlled access zones around the area underneath of steel erection activities. Signage and barricades could be used to delineate the area and prevent unauthorized access. Workers should tether equipment such as hand/power tools, hard hats, ladders, tape measurers, etc. when possible and the amount of materials stored at heights should be kept to a minimum.
- 5.3.2. In the event of inclement weather such as high wind or lighting storms, operations may need to be suspended.

#### 5.4 Personal Protective Equipment (PPE)

5.4.1. In addition to the required minimum PPE, additional PPE for steel erection activities may include leathers, ear plugs, face shields, personal fall protection, etc.

#### 5.5 Training

- 5.5.1. Personnel must be trained according to the tasks they're engaging in. Typically, most steel erection personnel will need at least one of the following trainings/certifications:
  - 5.5.1.1. Certified crane operator
  - 5.5.1.2. Certified rigger
  - 5.5.1.3. Certified signal person
  - 5.5.1.4. Aerial work platform training
  - 5.5.1.5. Welding certification as applicable
  - 5.5.1.6. Connector training



"Freedom from Danger"

#### 5.5.2. Steel erection training requirements:

- 5.5.2.1. Multiple lift rigging procedures
- 5.5.2.2. Connector procedures
- 5.5.2.3. Controlled decking zone procedures
- 5.5.2.4. Ladder selection and use

#### 5.5.3. Fall Hazard Training:

- 5.5.3.1. Recognition and identification of fall hazards in the work area
- 5.5.3.2. The use and operation of guardrail systems (including perimeter safety cable systems), personal fall arrest systems, positioning device systems, fall restraint systems, safety net systems, and other protection to be used
- 5.5.3.3. The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used
- 5.5.3.4. The procedures to be followed to prevent falls to lower levels and through or into holes and openings in walking/working surfaces and walls; and the fall protection requirements for structural steel erection
- 5.5.3.5. Procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used
- 5.5.3.6. Site-specific fall prevention plan

#### 6.0 References

FED / OSHA 1926 Subpart R - Steel Erection

CAL / OSHA T8CCR1710 - Erection of Structures

L&I WAC 296-155-702 - Erection Plan

#### 7.0 Attachments

Crane Pick Plan



"Freedom from Danger"

# **Utility Avoidance**

#### 1.0 Purpose

1.1. The purpose of this policy is to ensure any work in close proximity to utilities is carried out in a manner that supports our goal of Freedom from Danger.

#### 2.0 Scope

2.1. Any scope of work that involves the penetration of the ground or a structure whether by hand or machine or is located in proximity to overhead utilities must be executed in accordance with this standard. Activities covered by this standard range from saw cutting, jackhammering, coring, trenching, excavating, demolition, boring, drilling, grading, mass excavation, etc.

#### 3.0 Responsibility

#### 3.1 Project Management & Supervision

#### 3.1.1. BNB Project Management & Supervision are responsible for:

- 3.1.1.1. ensuring compliance with this standard;
- 3.1.1.2. acquiring safety submittals from subcontractors;
- 3.1.1.3. setting up and hosting pre-dig meetings;
- 3.1.1.4. ensuring completion and filing of "Dig Permits" and "Overhead Utility Permits"

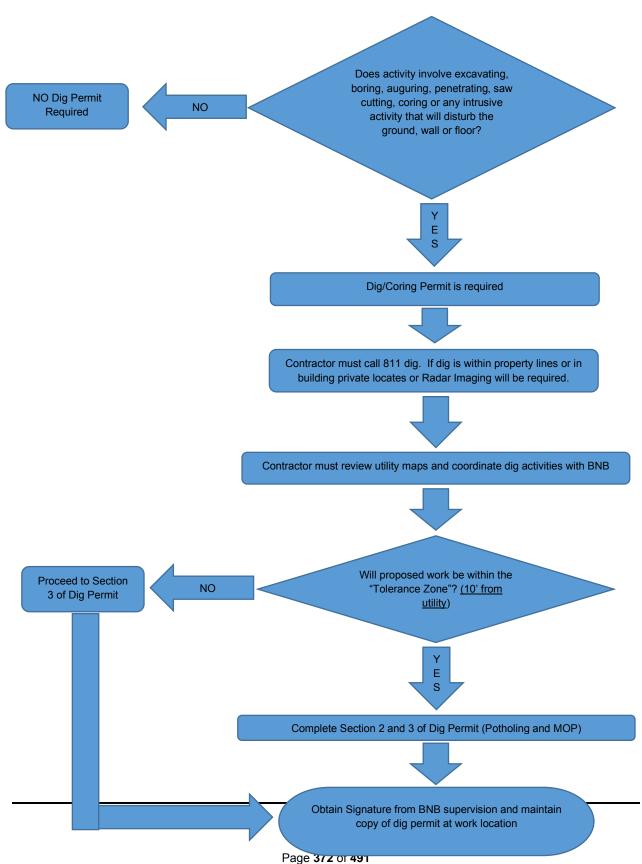
#### 3.2 Subcontractors

3.2.1. Subcontractors are responsible for following the requirements of this program, submitting required submittals to the BNB Project Team, attending pre-dig meetings, and completing "Dig Permits" and "Utility Avoidance Checklist".

#### 4.0 Definitions

- 4.1. **Proximity** nearness in place
- 4.2. Strike Unwanted contact with an energized utility
- 4.3. Overhead Utility Typical overhead utilities are power lines such as those running along sidewalks
- 4.4. **Underground Utility** Typical underground utilities are gas, water, sewer, storm drain, and communications
- 4.5. Potholing The act of digging with only hand tools or vacuum/water extraction methods
- 4.6. **Proximity Warning Device** A piece of equipment that assists operators who may become distracted or unable to see the dangerous overhead high voltage power lines in their work area

"Freedom from Danger"



# Health, Safety and Environmental Manual

"Freedom from Danger"

#### 5.0 Procedure

#### 5.1 Underground Utilities Procedures

#### 5.1.1. Required Submittals for Subcontractors

- 5.1.1.1. For activities involving the penetration of the ground's surface, the Subcontractor shall submit the following in addition to typically required safety documents prior to starting work:
  - 5.1.1.1.1 the name(s) of the designated "Competent Person" with supporting documentation indicating training and competency. (No excavating or work in excavations will be allowed without the Competent Person onsite and supervising these operations at all times).
  - 5.1.1.1.2. A Job Hazard Analysis that adequately addresses the task(s) involving penetration of the ground's surface and safe measures for preventing utility strikes.

#### 5.2 New Utility Procedures

- 5.2.1. All new underground electrical utilities will be encased in concrete that is dyed red. CDF will not be used for duct banks
- 5.2.2. Duct banks will be installed a minimum of 4' below finish grade when possible.
- 5.2.3. When duct banks are installed less than 4' deep the entire trench will be filled with concrete up to rough grade if possible.
- 5.2.4. Warning signs will be posted at source of electrical and at feed location (i.e. sign at panel and tower crane).
- 5.2.5. Duct bank locations will be marked with red paint with regularly scheduled re-marking to ensure lines are identified at all times.
- 5.2.6. On sites where ground conditions (mud) obscure locate paint/markings stakes or delineators will be installed every 20' to identify utilities route.
- 5.2.7. Newly installed underground utilities will be incorporated into existing Live Utility Map.

#### 5.2.8. Location of all underground utilities will be reviewed at:

- 5.2.8.1. Preparatory meetings with subcontractors.
- 5.2.8.2. New Hire Orientations.
- 5.2.8.3. Weekly safety meetings.

#### 5.2.9. When working within 10' of newly installed utilities the following steps must be taken:

- 5.2.9.1. Contractor performing work must call for locates prior to work and coordinate with BNB to ensure new utilities are identified prior to dig.
- 5.2.9.2. Radar Imagine affected area as needed.
- 5.2.9.3. MOP must be submitted 1 week prior to scheduled work.
- 5.2.9.4. JHA must be submitted 1 week prior to scheduled work.
- 5.2.9.5. Dig Permit must be completed.
- 5.2.9.6. Core Drilling / Saw Cutting Checklist.
- 5.2.10. MOP, JHA, Utilities Permit, must be reviewed day of work with BNB Staff, all workers involved in planned utilities.



"Freedom from Danger"

#### 5.3 Live Utility Map Requirements

- 5.3.1. Live Utilities Awareness Map shall be generated at start of all projects.
- 5.3.2. Applicable utility phone numbers must be included on Live Utilities Map.
- 5.3.3. Map colors must match AWPA color codes as outlined below.
- 5.3.4. Valve locations must be indicated on map.
- 5.3.5. Dimensions/depth shall be outlined on map as necessary
- 5.3.6. Newly installed utilities shall be incorporated into map.
- 5.3.7. Maps shall be dated to ensure most recent version is posted.
- 5.3.8. Map shall be incorporated into sub preparatory meetings, jobsite orientations and be posted in job shack, jobsite office and on safety board.

#### 5.4 Strike Prevention Procedures

- 5.4.1. Every effort must be made to **remove or de-energize utilities as the first** order of business.
- 5.4.2. If a utility is properly identified, shut down, and "safed-off" via lock out tag out, and the utility is struck during an activity, BNB does **not** consider the event a utility strike, but it **would be considered property damage** and must be repaired by the party responsible for the damage.
- 5.4.3. Note, lock out tag out must be performed by a qualified person and testing must verify a zero-energy state for the utility.
- 5.4.4. When within three (3) feet or 36 inches in any direction of known utilities that are energized, hand digging, or vacuum excavation is required.

#### 5.5 Potholing Procedures

- **5.5.1.** Potholing is performed to verify the location and depth of utility lines and potholing procedures shall be followed to prevent damage to the identified underground utilities. Before ground-penetrating activities begin, potholing for the utilities will take place. Potholing will be done using hand labor or a vacuum excavation system. NOTE: Utilities typically identified by locate services have a three-foot safe zone. In other words, the utility should be within a ten-foot zone of either side of the markings.
- 5.5.2. Potholing will be performed to locate the utility. The utility MUST be found prior to the start of excavation operations. The soil must be excavated in 6" lifts (approximately) by hand to verify that no utilities are present. If utilities are located, then the utilities must be exposed by hand. The proper tools that can be used for handwork are shovels and pry bars (or other tools of this nature), OR vacuum excavation systems. At no time should a pickaxe or other similar tools be used. Before using a vacuum excavation system, contact the utility owner to determine if the utility owner will allow the use of a vacuum system. Not all utility owners allow the use of vacuum systems for locating the utility.
- 5.5.3. Do not assume that the utility will continue on the same line and grade. If any damage occurs to any line, contact the utility company, the utility engineer and the project superintendent IMMEDIATELY. An Incident Report must be completed IMMEDIATELY by the BNB Project Team. All existing utilities will be located, marked and visually verified prior to starting any operation. Locate markings must be protected as applicable. It is recommended that time-stamped photos be taken of markings prior to breaking ground.
- **5.5.4.** Underground Utility Pothole Spacing and Frequency Any deviation from this procedure will require approval from the BNB Project Manager. The following spacing and frequency requirements will be followed on all projects:
- **5.5.5.** Life threatening utilities such as gas, forced sewer mains, water mains and electrical services will be exposed through the entire length of the excavation.
- **5.5.6.** Gas and electric lines within 25 feet of your work area will be potholed and marked every 25 feet to verify that the line has not changed directions.



"Freedom from Danger"

- **5.5.7.** Gas and electric lines outside the 25 feet of the work zone will be potholed at least once on each end of the limits of the excavation to verify Underground Service Alert and the utility plans.
- 5.5.8. Communication Lines- Fiber-optic lines will be potholed every 25 feet within the work area. Telephone/Cable lines will be potholed every 50 feet within the work area. IF there is any damage to a fiber optic line, DO NOT LOOK INTO THE FIBER OPTICS. THE LIGHT WAVES GOING THROUGH THE FIBER OPTICS CAN CAUSE SERIOUS EYE INJURIES.

#### 5.5.9. Other Utilities:

- 5.5.9.1. Will be potholed every 25 feet for lines less than 8" in diameter.
- 5.5.9.2. Will be potholed every 50 feet for lines 8" though 24" in diameter.
- 5.5.9.3. Will be potholed every 100 feet for lines greater than 24" in diameter.
- 5.5.9.4. At least two (2) potholes must be obtained for each utility within the work zone regardless of the size of the work area.

#### 5.5.10. Utilities in Roadways:

- 5.5.10.1. Utilities that are located within the roadway will be potholed.
- 5.5.10.2. Street plates will be obtained to cover a pothole when there is live traffic on the roadway. The street plates shall be of sufficient size and thickness to allow traffic to safely drive over them by pre-grind to allow the trench plates to be flush with the horizontal plane. The street plates shall be secured in place in accordance with the local, state and/or federal requirements.
- 5.5.10.3. For roadway work not scheduled to be excavated in the current operation, an asphalt patch will be placed over the pothole. This will be done after all pothole information has been recorded and the pothole has been offset using stakes and ribbon.

#### 5.5.11. Utility Locating.

- 5.5.11.1. Subcontractors shall locate and identify all utilities prior to the start of ground-penetrating activities. Equipment operators must understand the locations and types of utilities.
- 5.5.11.2. Prior to the start of any excavation a utility locate service must be contacted. Each state has a different locate service with specific rules outlining their services. It is very important to understand the state or local guidelines in advance of your excavation. Typically locate companies require 2 days advanced notice before performing a locate. Before calling for locate services, the excavation area must be pre-marked with white paint, stakes or flags. In addition, newly constructed work IS NOT covered (i.e. drainage, electrical subcontractor new installations, etc.) and shall be located by other means. The Subcontractor engineer, foreman, or superintendent responsible for this work will be contacted to verify what has been constructed and an appropriate as-built requested. The One Call service can be contacted by calling 811.
- **5.5.12. Utility Color Markings** The following colors and symbols have been adopted by all utilities for marking underground utilities:

Blue Water
Orange Telephone, Railroad, Cable TV
Green Sewer, Storm Drain
Red Street Lighting, Electric, Traffic Signals (may be orange)
Yellow Gas



"Freedom from Danger"

	Survey
White	Proposed Excavation
Purple	Reclaimed Water, Irrigation, and Slurry Lines

# 5.4.5. Dig Permits:

5.4.5.1. A <u>Dig Permit</u> is required for all operations which penetrate the original ground surface. The Subcontractor foreman of each operation is responsible for ensuring that the Dig Permit, Job Hazard Analysis (JHA) and Pre-Task Plan (PTP) and all necessary drawings are available at the operation and in the cab of the excavator, backhoe, etc. The operator is ultimately responsible and will be held accountable to ensure the operation does not proceed without a valid Dig Permit. The BNB Management will verify that the Dig Permit has been properly completed.

## 5.4.5.2. The following documents will be attached before being distributed to the foreman and operator:

- 5.4.5.2.1. A signed copy of the Job Hazard Analysis (JHA).
- 5.4.5.2.2. A Pre-Task Plan (PTP) must be completed by the crew and signed by all members.
- 5.4.5.2.3. The page of the Topography & Utility Plan sheets for the work zone that the permit covers. Any utility relocations that have been completed before the start of the operation must be clearly noted on these drawings.
- 5.4.5.2.4. A copy of the Utility Plan sheets for the work zone the permit covers. Notes and highlights must be made on these drawings to indicate which runs have been installed.

#### 5.4.5.3. Unintentional Uncovering of a Utility (known or unknown utility):

- 5.4.5.3.1. If during the course of excavation, a utility has been exposed, it is the Subcontractors' responsibility to inspect and support these facilities prior to backfilling. If damage of any kind is discovered, or any suspicion of damage exists, call the utility engineer so documentation can take place. The utility engineer will then notify the utility owner.
- 5.4.5.3.2. All unidentified underground utilities that are discovered during the course of excavation activities shall be marked on the As Built Plans and the BNB Project Manager shall be IMMEDIATELY notified.

# 5.4.6. Reporting Requirements:

## 5.4.6.1. If a utility strike/hit does occur, several reporting steps are required:

- 5.4.6.1.1. First and foremost, clear and secure the area if there is potential for further exposure to hazardous environments.
- 5.4.6.1.2. Contact the appropriate utility owner to inform them of the damage so they can inspect and repair, if necessary.
- 5.4.6.1.3. Notify the Utility Engineer and BNB Project Superintendent.
- 5.4.6.1.4. The Subcontractor shall complete the Incident Report Form and transmit it to the BNB Project Manager.

# 5.4.7. Overhead Utilities Procedure:

5.4.7.1. Any equipment having the ability to work under, cross underneath, and/or reach over overhead electrical lines will follow the guidelines set forth by OSHA in 1926.1408, 1926.1411, & 1926.600.



"Freedom from Danger"

- BNB recommends that equipment working in close proximity to overhead electrical lines be equipped with a Proximity Warning Device (PWD) to notify the operator and/or operatives surrounding the equipment of the proximity to the danger zone.
- 5.4.7.2. If working near overhead electrical lines, the Subcontractor will install "DANGER OVERHEAD POWERLINES" signs at all designated equipment crossings. This sign must state the voltage of the overhead line. For all other utilities, the Subcontractor will install "DANGER OVERHEAD UTILITY" signs to warn of the overhead hazard. For all other equipment traveling underneath overhead utilities, to include use of on-road or off-road haul trucks transporting dirt / materials to the project a "NO DUMP ZONE" will be established to eliminate dumping within 50' of either side of the overhead line. The Subcontractor will identify the "NO DUMP ZONE" through the use of signage.
- 5.4.7.3. Subcontractor will provide a full-time spotter(s) whenever any equipment has the ability to work under, cross underneath, and / or reach over overhead utility lines, for example, electrical, cable, phone, fiber-optic, etc. This spotter will assume no other duty and be equipped with air horn, reflective vest, and red flag.
- 5.4.7.4. Subcontractor will limit equipment travel underneath overhead utilities to designated areas only. To prevent equipment from traveling underneath lines, the Subcontractor will install a means of protection. At a minimum, protection will consist of yellow poly rope with red flagging.
- 5.4.7.5. Subcontractor will protect all guy wires and utility poles from contact with equipment operating in the area through the use of barricades (water-filled barricade, temporary concrete barrier, or pipe bollards). If installed on a road project and within the clear zone of an active travel lane all barriers must be installed per the Department of Transportation (DOT) Index & Manual on Uniform Traffic Control Devices (MUTCD).

# 5.5 Hazards

5.5.1. The accidental exposure to utilities could result in an injury or even fatality. Injury could be caused by explosion, fire, electrical shock, asphyxiation, struck-by hazards, and more.

# 5.5.2 Hazard Controls

5.5.3.1. If utility conflicts are found, a potential option for hazard elimination would be to change the plans to avoid being in proximity with existing utilities. Effort must be taken to have the utility conflicts related to the scope of work removed or relocated prior to commencing work. If, after contacting the appropriate utility companies, the utility cannot be removed or relocated prior to commencing, then additional means and methods shall be employed following the hierarchy of controls identified below.

# 5.5.3 Engineering Controls

5.5.3.1. If utilities in proximity of the work cannot be eliminated/relocated, then the next preferred control is to raise the height of overhead utilities or insulate the wires.

# 5.5.4 Administrative Controls

5.5.4.1. Administrative controls could be the installation of warning signs, use of spotters, use of protective barricades, proximity warning/control devices for equipment, and/or use of technology to visually identify utilities.

#### 5.5.5 Personal Protective Equipment

# Health, Safety and Environmental Manual

"Freedom from Danger"

**Utility Avoidance** 

5.5.5.1. Personal Protective Equipment controls could consist of grounded cabs on equipment, insulated/rated gloves, rated face shields, and/or reflective vests.

# 5.6 Training

5.6.1. BNB Operations personnel and all subcontractor personnel engaged in excavation or work in proximity to overhead lines must be trained on this standard and BNB's Avoidance Policy. Subcontractor employees engaged in excavation activities must be "Dig Safe" trained before working on an excavation operation. This training is also required for personnel involved in the completion of the Dig Permit.

# 6.0 References

OSHA 1926.1408

OSHA 1926.1411 - Power Line Safety

OSHA 1926.600 - Equipment

Cal/OSHA T8CCR1541, General Requirements for Excavations

L&I WAC 296-32 - Safety Standards for Telecommunications

# 7.0 Attachments

**Dig Permit** 

Core Drilling / Saw Cutting Checklist

Subcontractor Requirements

<u>Utility Avoidance - Best Practices</u>

"Freedom from Danger"



# Walking and Working Surfaces

# 1.0 Purpose

1.1. The purpose of this standard is to establish requirements for the design, maintenance, and use of walking and working surfaces and stairs.

# 2.0 Scope

2.1. This policy applies to walking and working surfaces and stairs at BNB projects and offices.

# 3.0 Responsibility

## 3.1 Project Management

3.1.1. BNB Project Management & Supervision are responsible for preplanning walking and working surfaces and stairways for each project. For example, the use of ladders to access work areas on different levels should be identified during preconstruction, so effective controls such as a temporary stair tower may be put in place during construction. During construction, BNB Project Management & Supervision are responsible for inspecting walkways, stairs, and other surfaces to ensure a safe workplace.

#### 3.2 Workers

3.2.1. Workers are expected to maintain all walkways and stairs in a safe condition throughout the workday and report any issues to management. Work areas must be cleaned up at a pace consistent with production and waste-generating activities. If their work will close an emergency exit or walkway, they must work with BNB Project Management & Supervision.

#### 4.0 Definitions

- 4.1. Debris Materials, supplies, equipment, trash, etc. that have accumulated during work activities.
- 4.2. **Floor Holes** an opening measuring less than twelve inches but more than one inch in its least dimension in any floor, roof, platform, or surface through which materials but not persons may fall, such as a belt hole, pipe opening, or slot opening.
- 4.3. **Floor Openings** an opening measuring twelve inches or more in its least dimension in any floor, roof, platform, or surface through which persons may fall.
- 4.4. Unprotected sides and edges means any side or edge (except at entrances to points of access) of a stairway where there is no stair rail system or wall 36 inches (.9 m) or more in height, and any side or edge (except at entrances to points of access) of a stairway landing, or ladder platform where there is no wall or guardrail system 39 inches (1 m) or more in height.
- 4.5. **Unstable Ground –** earth material that because of its nature or the influence of related conditions cannot be depended upon to remain in place without extra support.
- 4.6. Walking and Working Surface any area including, but not limited to, floors, a roof surface, bridge, the ground, and any other surfaces whose dimensions are forty-five inches or more in all directions, through which workers can pass or conduct work.
- 4.7. **Wall opening** an opening at least thirty inches high and eighteen inches wide, in any wall or partition, through which persons may fall, such as an opening for a window, a yard arm doorway, or chute opening.

#### 5.0 Procedure

# 5.1 General

- 5.1.1. Walkways, stairways and roadways shall be kept clear to allow the safe movement of persons, material and equipment.
- 5.1.2. Electrical cords, hoses, ropes, conduit, pipe and other hazards shall not be placed in walkways, stairways and work areas in such a manner as to create a tripping hazard. Examples of acceptable



"Freedom from Danger"

- methods for avoiding a tripping hazard include: taping the items down, running the items along the area edge or barricading the area.
- 5.1.3. Impalement protection must be installed on rebar or other similar objects in walkways.
- 5.1.4. Barricades, fencing, and other materials in public areas can't have hardware, locks, protrusions, or irregular surfaces on the public side that a person could strike against, or snag/catch their clothes or body parts on.
- 5.1.5. Fencing shall be secure. Fence bases that have the potential to cause a tripping hazard shall be labeled, coned and secured.
- 5.1.6. Minimum 28-inch wide aisles will be provided at all times
- 5.1.7. Emergency exits and evacuation routes shall be clearly marked and kept clear at all times
  - 5.1.7.1. A clean work area prevents slips, trips and falls and helps safety and production.
  - 5.1.7.2. Clean as you go and at the end of each day.
  - 5.1.7.3. Materials must be stored in an orderly manner.
  - 5.1.7.4. Spills and leaks are to be cleaned up immediately.
  - 5.1.7.5. Round containers can be trip hazards and can be easily kicked off a floor.
  - 5.1.7.6. When a building or structure has only one point of access between levels, that point of access shall be kept clear to permit free passage of employees. When work must be performed or equipment must be used such that free passage at that point of access is restricted, a second point of access shall be provided and used.
  - 5.1.7.7. When a building or structure has two or more points of access between levels, at least one point of access shall be kept clear to permit free passage of employees.

## 5.1.8 Open Holes

- 5.1.8.1. Floor hole and floor opening covers shall be secured against displacement and adequately marked with the word "Hole" or "Cover".
- 5.1.8.2. All covers must be designed to support without failure 4 times the intended load.
- 5.1.8.3. Hole covers need a tapered/beveled edge to be flush with the existing surface to minimize trip hazards.
- 5.1.8.4. Cover and secure roof/floor openings wider than 2" and never leave them unprotected and/or unattended.
  - 5.1.8.4.1. Guardrails can be used in lieu of covers.
  - 5.1.8.4.2. Equipment should not travel over hole covers—hole covers may be constructed to prevent equipment from being able to travel over the cover.

#### 5.1.9 Cords, hoses, lines, etc.

- 5.1.9.1. Cords, hoses, etc. in public areas must have ADA-compliant covers to protect them from damage and give safe passage to the public.
- 5.1.9.2. Correct tripping hazards such as cords, hoses or debris in work areas or paths of travel.
  - 5.1.9.2.1. Extension cords, hoses, welding leads, etc., must be run safely overhead in all stairs, aisles, and exit areas.

#### 5.1.10 Elevated Walking and Working Surfaces

- 5.1.10.1. When working/walking surfaces are 6' CA / 4' WA or greater in height, proper fall protection methods must be used.
  - 5.1.10.1.1. BNB will approve perimeter access points for material handling. Personal fall protection must be put in place before cables or rails are taken down, or holes uncovered. Barricade the area, place signage, and leave a spotter.
  - 5.1.10.1.2. Barricades must be a minimum of 10' from edges.



"Freedom from Danger"

- 5.1.10.2. Never remove guardrails or warning barricades without permission from BNB Project Management & Supervision.
- 5.1.10.3. Railings and toe boards shall be provided along all unprotected and open sides, edges, and surfaces 6' above ground levels.

#### 5.1.11 Guardrails

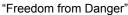
5.1.11.1. Guardrails must be provided at floor openings, open sides, and/or leading edges or personal fall protection must be used.

# 5.1.11.2. Guardrails or wire cables must follow these requirements:

- 5.1.11.2.1. shall have a vertical height within the range of 42 inches to 45 inches from the upper surface of the top rail to the floor, platform, runway, or ramp level. (Note: the permissible tolerance on height dimensions is one inch).
- 5.1.11.2.2. The maximum deflection for the top rail when a load of 200 pounds is applied in any direction at any point on the top rail shall not exceed 3 inches in any direction.
- 5.1.11.2.3. Mid-rail/cable and toe boards must be installed and able to withstand 150 lbs. CA / 200 lbs. WA
- 5.1.11.2.4. Guardrails or wire cables will not be used for anchoring personal fall arrest/restraint.
- 5.1.11.2.5. Upright supports for a wood guardrail system shall be spaced no greater than every 8 ft. on center.

# 5.1.12 Stairways

- 5.1.12.1. Temporary stair towers or prefabricated stairs should be used to access different building levels.
- 5.1.12.2. Never use stairs and ramps that are incomplete, incorrectly constructed, improperly installed, or damaged.
- 5.1.12.3. Stairs, ladders, and ramps must be inspected before use.
- 5.1.12.4. A stairway or ladder shall be provided at all personnel points of access where there is a break in elevation of 19 inches or more, and no ramp, runway, sloped embankment, or personnel hoist is provided. Stairways must extend to the uppermost floor that has been planked or decked if steel framed.
- 5.1.12.5. Stair steps must be illuminated with at least 5-foot candles of light
- 5.1.12.6. Stairway openings must be guarded on all sides except the entrance.
- 5.1.12.7. Snow and Ice must be removed from stairs before they are allowed to be used.
- 5.1.12.8. Stairways shall be at least 24 inches in width and shall be equipped with stair rails, handrails, treads, and landings.
- 5.1.12.9. Railings and toe boards shall be installed around stairwells.
- 5.1.12.10. Temporary stairways that will not be a permanent part of the structure on which construction work is being performed shall be at least 24 inches in width. The stairway shall have landings at each floor, or level, of not less than 30 inches in the direction of travel and extend at least 24 inches in width at every 12 feet or less of vertical rise.
- 5.1.12.11. Stairs shall be installed between 30° and 50° from horizontal.
- 5.1.12.12. Unprotected sides and edges of stairway landings shall be provided with railings.
- 5.1.12.13. Metal pan landings and metal pan treads, when used, shall be secured in place before filling with concrete or other material.
- 5.1.12.14. All parts of stairways shall be free of hazardous projections, such as protruding nails.





5.1.12.15. Slippery conditions on a stairway shall be eliminated before the stairway is used to reach another level.

# 5.1.12.16. Stairways having four or more risers or rising more than 30 inches (76 cm), whichever is less, shall be equipped with:

- 5.1.12.16.1. At least one handrail; and
- 5.1.12.16.2. A stair rail consisting of a top rail and mid-rail along each unprotected side or edge.
- 5.1.12.16.3. The height of stair rails shall be not less than 36 inches from the upper surface of the stair rail to the surface of the tread, in line with the face of the riser at the forward edge of the tread.
- 5.1.12.16.4. Mid-rails shall be located at a height midway between the top edge of the stair rail and the stairway steps.
- 5.1.12.16.5. Screens, mesh, or other material, when used in lieu of mid-rails, shall extend from the top rail to the stairway step, and along the entire opening between top rail supports.
- 5.1.12.16.6. Handrails and the top rails of stair rails shall be capable of withstanding, without failure, a force of at least 200 pounds (890 n) applied within 2 inches of the top edge, in any downward or outward direction, at any point along the top edge.
- 5.1.12.16.7. Stair and handrails shall be so surfaced as to prevent injury to employees from punctures or lacerations, and to prevent snagging of clothing.
- 5.1.12.16.8. Handrails shall provide an adequate handhold.
- 5.1.12.16.9. Except during stairway construction, foot traffic is prohibited on stairways with pan stairs where the treads and/or landings are to be filled in with concrete or other material at a later date, unless the stairs are temporarily fitted with wood or other solid material at least to the top edge of each pan.
- 5.1.12.16.10. Except during stairway construction, foot traffic is prohibited on skeleton metal stairs where permanent treads and/or landings are to be installed at a later date, unless the stairs are fitted with secured temporary treads and landings long enough to cover the entire tread and/or landing area.
- 5.1.12.16.11. Treads for temporary service shall be made of wood or other solid material, shall cover the full width and depth of the stair and shall be supported to prevent undue deflection.

# 5.1.13 Ramps

- 5.1.13.1. Ramps must have non-skid surfaces.
- 5.1.13.2. Ramps or runways shall be not less than 20 inches in width and shall be secured and supported so as to avoid deflection and springing action.
- 5.1.13.3. Securely fastened cleats or other means shall be used on inclined runways that are sloped two feet in 10 feet or more to improve the footing. Where cleats are used, they shall be eight inches or more in length and not more than 16 inches apart.
- 5.1.13.4. When planks are used for raised walkways, runways, or sidewalks, they shall be secured against displacement. Planks shall be uniform in thickness and all exposed ends shall be provided with beveled cleats to prevent tripping.
- 5.1.13.5. Wheelbarrow ramps over three feet high shall be not less than two feet, six inches wide and secured at each end to prevent ramp from sliding. Platform planks shall be firmly cleated together.

5.2 Hazards

# Health, Safety and Environmental Manual

"Freedom from Danger"

5.2.1. Potential hazards associated with inadequate walking/working surfaces and stairs may be trips, slips, falls, electrical shock, damage to equipment, etc.

#### 5.3 Hazard Controls

# 5.3.1 Engineering Controls

- 5.3.1.1. Personnel should locate their equipment and materials in areas where they will not protrude in walkways.
- 5.3.1.2. Instead of using ladders to access different levels, temporary or permanent stairways can be installed and used.

#### 5.3.2 Administrative Controls

5.3.2.1. Housekeeping must be sufficient throughout the workday and conducted in accordance with Housekeeping. Inspections should be conducted daily to ensure walking and working surfaces are kept in proper condition. Signage may be posted to remind workers to keep walkways clear.

# 5.3.3 Personal Protective Equipment

5.3.3.1. All personnel must wear sturdy boots with ankle protection and hard soles. No running shoes of any kind are permitted on work sites, NO SAFETY TOE TENNIS SHOES ALLOWED.

# 5.3.4 Training

5.3.4.1. Personnel will receive site-specific training on walking and working surfaces during New Hire Orientation. In addition, employees who use stairways should receive additional training as necessary.

# 6.0 References

FED / OSHA 29 CFR 1926 Subpart X

FED / OSHA 29 CFR 1910 Subpart D & I – Walking Working Surfaces and Personal Fall Protection Systems

CAL / OSHA T8 Subchapter 4 A17 - Construction Safety Orders

<u>L&I WAC 296-155-24609 – Walking & Working Surfaces</u>

L&I WAC 296-800 - Core Safety

#### 7.0 Attachments

Fall Protection Plan

Pre-Task Plan

**Demolition Permit** 

Aerial Work Platform Inspection Checklist

Scaffolding Inspection Checklist



"Freedom from Danger"

# Welding, Cutting & Hot Work

# 1.0 Purpose

1.1. Each year numerous deaths from explosions, electrocutions, asphyxiation, falls and crushing injuries are associated with welding activities. In addition, numerous health hazards are associated with exposure to fumes, gases, and ionizing radiation formed or released during welding, cutting, and brazing, including heavy metal poisoning, lung cancer, metal fume fever, flash burns, and welder's flash (burn to eyes). Diligent and proper enforcement of this standard will protect our work, property, and the ongoing operations of our projects.

# 2.0 Scope

2.1. This standard applies to welding, cutting, grinding, and other hot-work related activities that take place on BNB projects. Hot work activities consist of open flames, heat, arcs, and / or sparks.

# 3.0 Responsibility

# 3.1 Project Management

3.1.1. BNB Project Management is to convey the requirements of this program to BNB personnel or subcontractors who engage in hot-work operations prior to the start of their work. Project Management must ensure that adequate HS&E documentation has been submitted, including a Hot-Work Permit, Respirator Fit Testing Data (if applicable), Pre-Task Plan, and any Air Monitoring documentation associated with the work. Project Management must also check with local municipalities pertaining to hot work permitting.

# 3.2 Supervision

3.2.1. Supervision should understand safe practices and enforce company safety policies and procedures associated with hot-work operations. Supervisors are to ensure a Hot-Work Permit has been completed and reviewed by BNB prior to the start of work. Also, supervision must ensure that hot-work operations are carried out in compliance with the requirements of the Hot-Work Permit.

# 3.3 Workers

3.3.1. Workers must be responsible for safe work practices related to Hot-Work operations. Shall operations not be performed safely with controlled hazards; workers shall cease all hot work operations. Equipment operators should tag and remove defective equipment. Repairs shall be made only by qualified personnel and in accordance with the manufacturer's recommendations.

#### 4.0 Definitions

- 4.1. **Competent Person** One who can identify 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
- 4.2. Hydraulic Back-Pressure Valve / Hydraulic Seal / Hydraulic Flash Arrester / Hydraulic Valve and Backflow Check Valve Terms used interchangeably to mean a device designed and constructed to prevent a flash-back from reaching a fuel gas source, manifold or cylinder and to prevent accidental mixing of fuel gas and oxygen by reserve flow.
- 4.3. Welder and Welding Operator Any operator of electric or gas welding and cutting equipment
- 4.4. **Qualified Person, Attendant or Operator** A person designated by the employer who by reason of training, experience, or instruction has demonstrated the ability to safely perform all assigned duties and, when required, is properly licensed in accordance with federal, state, or local laws and regulations
- 4.5. Fire Watch An individual listed on the Hot-Work Permit with required training on the inspection and use of fire-fighting equipment. The Fire Watch is to continuously monitor the work area during Hot-Work and for 30 minutes after the Hot-Work is completed



"Freedom from Danger"

- 4.6. **Hot Work** Any work involving burning, welding, or similar operations as defined above that is capable of initiating fires or explosions
- 4.7. Hot-Work Permit (HWP) A multi-part form consisting of instructions, identification of who will be involved in the Hot-Work operations, location of the Hot-Work operations, the nature of the Hot-Work operation, and precautions to be taken prior to and during Hot-Work operations

# 5.0 Procedure

# 5.1 General Procedures

- 5.1.1. Refer to the <u>Confined Spaces policy</u> for ventilation and other requirements for hot work in confined spaces.
- 5.1.2. Inspect the immediate work area and areas adjacent, beneath and above the immediate work area for combustible and/or flammable materials or liquids.
- 5.1.3. Cover all wood planking, scaffolds, wooden forms, and flammable and/or combustible materials or liquids within 35ft. of the work area that cannot be removed, with approved fire-retardant blankets, pads, curtains, covers and/or shields.
- 5.1.4. When hot work is performed at an elevated location, consider sparks or slag that can fall and land under the hot work operation.
- 5.1.5. At least one fully charged and operable fire extinguisher that is appropriate for the type of possible fire must be immediately available at the hot work location.
- 5.1.6. Adequate ventilation is required for all hot work operations.
- 5.1.7. The floor is swept clean within 35ft. of the work area.
- 5.1.8. Combustible floors are protected with approved fire-retardant blankets, pads, curtains, covers and/or shields.
- 5.1.9. Special precautions should be taken for heating pipes or other metal that is in contact with combustibles, walls, partitions, ceilings, or roofs.
- 5.1.10. Sprinkler heads and/or sensors must be protected if hot work is done in close proximity to an automatic fire detection or suppression system. Systems may need to be placed in test mode during hot work activities.

#### 5.1.11. Hot work is not allowed in the following areas:

- 5.1.11.1. In areas not authorized by BNB Management.
- 5.1.11.2. In the presence of explosive atmospheres (e.g. gases, vapors, liquids, or dusts).
- 5.1.11.3. In areas where explosive atmospheres could potentially develop.
- 5.1.11.4. In areas with an accumulation of combustible dusts.

## 5.2 Fire Watch Procedures

Rev.1.1.2023

#### 5.2.1. The fire watch must:

- 5.2.1.1. See <u>Fire Prevention Policy</u> for more information.
- 5.2.1.2. Be familiar with the Project Specific Fire Prevention Plan.
- 5.2.1.3. Be aware of the inherent hazards of the work area and of the hot work.
- 5.2.1.4. Stop hot work operations if unsafe conditions develop and shall notify management and the supervisor for reassessment of the conditions.
- 5.2.1.5. Have fire-extinguishing equipment readily available and is to be trained in its' use.
- 5.2.1.6. Be familiar with the facilities and procedures for sounding an alarm in the event of a fire.
- 5.2.1.7. Watch for fires in all exposed areas.
- 5.2.1.8. Extinguish fires only when the fires are within the capacity of the fire-extinguishing equipment available and sound an alarm according to the Project Specific Fire Prevention Plan.



"Freedom from Danger"

- 5.2.1.9. Follow specific Hot Work Permit instructions.
- 5.2.1.10. Additional fire watch personnel might be necessary when working in close proximity to open shafts, elevated heights, or where sparks can travel through openings.

# 5.3 Hot-Work Permits (HWPs)

# 5.3.1. HWPs shall be completed:

- 5.3.1.1. For welding, cutting, grinding, and other hot-work activities.
- 5.3.1.2. Prior to hot work activities commencing.
- 5.3.1.3. For up to one work shift with the exception of exterior construction such as steel erection or reinforcing steel which may be completed for up to one week.

#### 5.3.2. HWP Process

- 5.3.2.1. Personnel who are to engage in hot work obtain a permit from BNB.
- 5.3.2.2. Personnel completes permit section 1.
- 5.3.2.3. Personnel gives completed permit to BNB Supervisor.
- 5.3.2.4. BNB Supervisor verifies adequacy of the permit.
- 5.3.2.5. BNB Supervisor and personnel sign Part 1.
- 5.3.2.6. BNB Supervisor retains Part 1.
- 5.3.2.7. Personnel takes Part 1A and retains it for records.
- 5.3.2.8. Personnel fills out and displays permit at the location of the hot work.
- 5.3.2.9. BNB Supervisor to retain HWP until conclusion of the project.

#### 5.4 Gas Welding and Cutting Operations

# 5.4.1. Personnel conducting Gas Welding and Cutting Operations must:

- 5.4.1.1. Inspect torches, hoses, valves and cylinders prior to use and immediately remove defective equipment from service.
- 5.4.1.2. Keep oxygen fittings, cylinders, caps, couplings, regulators, hoses, and other apparatus away from and free of oil and grease. Do not handle oxygen cylinders while wearing oily gloves.
- 5.4.1.3. Ensure flashback arrestors/check valves are installed at all oxygen and fuel gas regulator gauges.
- 5.4.1.4. Use only hose couplings that cannot be unlocked or disconnected by means of a straight pull.
- 5.4.1.5. Keep hoses clear of walkways, ladders, and stairways.
- 5.4.1.6. Use a spark lighter (striker) to light torches. Do not use matches and/or lighters.
- 5.4.1.7. Do not strike an electrode against a cylinder to strike an arc.
- 5.4.1.8. Ensure that hot sparks, hot metal or cut pieces do not fall on cylinders, hoses, machinery, combustible material, legs, feet, or persons below.
- 5.4.1.9. Shut off cylinder valves and bleed regulators and hoses at the end of each shift.

# 5.5 Arc Welding and Cutting Operations

# 5.5.1. Personnel conducting arc welding and cutting activities must:

- 5.5.1.1. Inspect equipment prior to use and immediately remove damaged equipment from service.
- 5.5.1.2. Use and position screens or shields properly in order to protect workers and the public from arc ray exposure during Arc Welding and Cutting Operations.
- 5.5.1.3. Never overload welding cables or operate with poor connections.



"Freedom from Danger"

- 5.5.1.4. Never strike an electric arc on a gas cylinder.
- 5.5.1.5. Use only properly designed metal electrode holders.
- 5.5.1.6. Never dip hot electrode holders in water.
- 5.5.1.7. Dispose of discarded electrode stubs properly, as they can create a slip/trip/fall hazard.
- 5.5.1.8. Ensure that the frame of the welding machine is properly grounded.
- 5.5.1.9. Welding/cutting/ground cables must be in operable condition with no visible damage.
- 5.5.1.10. Never attach a ground cable to a pipeline containing gases or flammable liquids.
- 5.5.1.11. Keep cables clear of walkways, ladders, and stairways. String all cables overhead with non-metallic hangers if needed.
- 5.5.1.12. Ensure that cables are protected from equipment damage (e.g. forklifts, scissor lifts, etc.).
- 5.5.1.13. Locate grounds as close to the work location as possible to prevent arcing.
- 5.5.1.14. Stop operations if unsafe conditions develop and notify management and the supervisor for reassessment of the conditions.

#### 5.6 Cylinder Handling

# 5.6.1. Personnel handling cylinders must:

- 5.6.1.1. Store, move or use cylinders in an upright position.
- 5.6.1.2. Close valves, remove regulators, and replace valve safety caps before moving or storing.
- 5.6.1.3. Move cylinders by tilting and rolling them on their bottom edges; by use of a bottle cart; or with motorized equipment. Never lay cylinders on their sides and roll them.
- 5.6.1.4. Store Oxygen cylinders separated from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of 20 feet or by a noncombustible barrier at least 5 feet high having a fire-resistance rating of at least one-half hour.
- 5.6.1.5. Never use cylinders as rollers or supports whether full or empty.
- 5.6.1.6. Never drop cylinders or permit them to strike one another violently, even when empty.
- 5.6.1.7. Use bottle carts, chains, or other steadying devices to keep cylinders from being knocked over while in use.
- 5.6.1.8. Ensure cylinders are marked with the chemical or trade name of the gas.
- 5.6.1.9. Keep storage areas free of debris and other combustible materials.
- 5.6.1.10. Open cylinder valves slowly to prevent damage to the regulator.
- 5.6.1.11. Close and tighten the gland nut when the valve on a fuel gas cylinder is opened and there is a leak around the valve stem. If this action does not stop the leak, the cylinder shall be properly tagged, removed from the work area, and taken outdoors away from personnel and sources of ignition. The supplier shall promptly be notified of the leaking cylinder valve and the supplier's instructions shall be followed.
- 5.6.1.12. Position cylinders where they will not be struck by sparks, hot slag, or flame, and where they cannot become part of an electrical circuit.
- 5.6.1.13. Never take cylinders containing oxygen, acetylene into confined spaces.
- 5.6.1.14. Not use acetylene at a pressure in excess of 15 pounds per square inch gauge pressure.
- 5.6.1.15. Not use oxygen as a substitute for compressed air.
- 5.6.2. Before a regulator to a cylinder valve is connected, the valve shall be opened slightly and closed immediately ("cracking"). The person cracking the valve shall stand to one side of the outlet, not in front of it. Never crack a valve near ignition sources.
- 5.6.3. In the event that fuel gas should leak from the cylinder valve, rather than from the valve stem, and the gas cannot be shut off, the cylinder shall be properly tagged, removed from the work area, and taken

# Health, Safety and Environmental Manual

"Freedom from Danger"

outdoors away from personnel and sources of ignition. The supplier shall promptly be notified of the leaking cylinder valve and the supplier's instructions shall be followed.

#### 5.7 Hazards

5.7.1. Hazards related to hot work may consist of uncontrolled ignition of flammable gas, personnel or public injury, property damage, uncontrolled release of high-pressure gases, fire and/or explosion, electrical shock, struck-by, injury to eyes, skin, and lungs, and potential death.

#### 5.8 Hazard Controls

# 5.8.1. Engineering Controls

- 5.8.1.1. If possible, eliminate the presence of flammable/combustible materials during the design phase at or around planned welding activities to mitigate potential fire hazards during construction.
- 5.8.1.2. Alternate methods to hot work should be considered where practical. For example, repetitive cutting of metal studs may be performed at a central location where no combustibles are present, bolting in lieu of welding, or prefabrication offsite.

#### 5.8.2. Administrative Controls

- 5.8.2.1. Combustibles should be moved to a designated safe distance from the work or have combustibles properly shielded against ignition, if the work cannot be moved.
- 5.8.2.2. If fire hazards cannot be removed, guards or fire blankets should be used to confine the heat sparks and slag and to protect the immovable fire hazards.
- 5.8.2.3. Make sure that the welding area is watched for one-half hour after welding is completed to ensure that no sparks or smoldering fires are present.
- 5.8.2.4. Complete hot work permits and assign fire watch as necessary.

#### 5.9 Personal Protective Equipment

# 5.9.1. Welders must wear:

- 5.9.1.1. Non-flammable gloves with gauntlets
- 5.9.1.2. Appropriate foot protection
- 5.9.1.3. Aprons (leather) and or shirts that have leather sleeves and collars
- 5.9.1.4. Helmets, hoods, and face shields designed to attach to a standard hardhat
- 5.9.1.5. Eye protection
- 5.9.1.6. Cutting goggles must be worn with oxyacetylene cutting activities
- 5.9.1.7. Respiratory protection:
- 5.9.1.8. Outdoors: Respirators are required for any operation involving stainless steel, beryllium, cadmium, lead, or mercury. For other materials, respirators may be required when natural or mechanical ventilation is insufficient to prevent exposure to airborne contaminants.
- 5.9.1.9. Indoors: Respirators shall be used when local exhaust or mechanical ventilation is not feasible or able to prevent listed exposure limits.
- 5.9.1.10. Enclosed spaces: Supplied-air respirators shall be used when local exhaust ventilation is not an effective means for preventing potentially hazardous exposures.

#### 5.10 Training

# Health, Safety and Environmental Manual

"Freedom from Danger"

5.10.1. Only authorized and trained individuals shall be permitted to perform hot work operations.

5.10.2. Fire watch personnel must be trained in the use of fire extinguishing equipment and be familiar with the Project Specific Fire Prevention Plan. Personnel performing hot work activities must have adequate training and experience to perform their duties safely. Personnel operating arc welding equipment and gas-shielded welding equipment must be competent. Personnel handling fuel gas must be instructed on safe practices.

# 6.0 References

FED / OSHA 1926 Subpart J - Welding and Cutting

FED / OSHA 1910.251-255 - Welding, Cutting, and Brazing

CAL / OSHA T8CCR Subchapter 7 – General Industry Safety Orders

L&I WAC 296-24-680 - Welding, Cutting, and Brazing

L&I WAC 296-800 - Core Safety

American Welding Society Standards

# 7.0 Attachments

Hot-Work Permit

Pre-Task Plan

**Demolition Permit** 

Confined Space Entry Permit



# Wildfire Smoke & Outdoor Air Quality

# 1. Purpose

1.1. Air quality can be negatively impacted by wildfires, SMOG, agricultural activities, and other atmospheric emissions. This Policy is intended to provide a guideline to monitor, evaluate and respond to changing conditions as a result of environmental impacts such as wildfires which may affect the Safety and Health of our employees.

# 2. Scope

**2.1.** This section applies to workplaces where the current Air Quality Index (AQI) for PM2.5 is 151 or greater in California or 69 or greater in Washington, regardless of the AQI for other pollutants, **and where BNB** should reasonably anticipate that **our** employees may be exposed to atmospheric contaminants such wildfire smoke, SMOG, agricultural activities and other contaminants.

# 2.2. The following workplaces and operations are exempt:

- **2.2.1.** Enclosed buildings or structures in which the air is filtered by a mechanical ventilation system and the employer ensures that windows, doors, bays, and other openings are kept closed to minimize contamination by outdoor or unfiltered air.
- 2.2.2. Enclosed vehicles in which the air is filtered by a cabin air filter and the employer ensures that windows, doors, and other openings are kept closed to minimize contamination by outdoor or unfiltered air.
- **2.2.3.** BNB demonstrates that the concentration of PM2.5 in the air does not exceed a concentration that corresponds to a current AQI of 151 or greater by measuring PM2.5 levels at the jobsite location.
- 2.2.4. Employees exposed to a current AQI for PM2.5 of 151 or greater for a total of one hour or less during

# Responsibility

# 3.1. Project Management & Supervision

3.1.1. BNB management and supervision will be responsible for relaying AQI information when it is at or exceeds 151 in California or 69 in Washington. Management and supervision are also responsible for ensuring that the monitoring of the current air quality index for PM 2.5 is less than 151 (CA) or 69 (WA). However, if the air quality is at or greater than 151, regardless of the AQI for other pollutants, voluntary respirator use of the N95 or equivalent APF 10 will be provided along with the Voluntary Respirator Use Form.

# 3.2. Workers

3.2.1. All employees working on a BNB project are highly encouraged to utilize available PPE provided while working during wildfire smoke and other air quality contaminant events and to inform BNB management of air quality hazards at the jobsite. This includes worsening of air quality and any adverse symptoms that may be the result from unhealthy or hazardous air quality such as asthma attacks, difficulty breathing, and chest pain. The "Voluntary Respirator Use Form" must be completed prior to donning any supplied respirator.

# 4. Definitions

**4.1.** Current Air Quality Index (Current AQI). The method used by the U.S. Environmental Protection Agency (U.S. EPA) to report air quality on a real-time basis. Current AQI is also referred to as the "NowCast," and represents data collected over time periods of varying length in order to reflect present conditions as accurately as possible.



- **4.2.** Washington Air Quality Advisory (WAQA) The method used by the Washington State Department of Ecology to report air quality on a real-time basis. It represents data collected over time periods of varying length in order to reflect present conditions as accurately as possible.
  - **4.2.1.** The current AQI is divided into six categories as shown in the table below, adapted from Table 2 of Title 40 Code of Federal Regulations, Part 58, Appendix G.

Air Quality Index (AQI)	
Categories for PM2.5	Levels of Health Concern
0 to 50	Good
51 to 100	Moderate
101 to 150	Unhealthy for Sensitive Groups
151 to 200	Unhealthy
201 to 300	Very Unhealthy
301 to 500	Hazardous

- **4.3. NIOSH**. The National Institute for Occupational Safety and Health of the U.S. Centers for Disease Control and Prevention. NIOSH tests and approves respirators for use in the workplace.
- **4.4. PM2.5.** Solid particles and liquid droplets suspended in air, known as particulate matter, with an aerodynamic diameter of 2.5 micrometers or smaller.
- **4.5.** Wildfire Smoke. Emissions from fires in "wildlands," as defined in Title 8, section 3402, or in adjacent developed areas.

# 5. Procedure

# 5.1. Atmospheric Monitoring

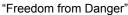
5.1.1. BNB shall determine employee exposure to PM2.5 for jobsites covered by this section before each shift and periodically thereafter, as needed to protect the health of the employee, by any of the following methods:

# 5.1.2. California or Other Regions Not Regulated by Local Authorities

- 5.1.2.1. Check AQI forecasts and the current AQI for PM2.5 from any of the following: <u>U.S. EPA AirNow website</u>, U.S. Forest Service Wildland Air Quality Response Program website, California Air Resources Board website, local air pollution control district website, or local air quality management district website; or
- 5.1.2.2. Obtain AQI forecasts and the current AQI for PM2.5 directly from the EPA, California Air Resources Board, local air pollution control district, or local air quality management district by telephone, email, text, or other effective method.

#### 5.1.3. Washington

- 5.1.3.1. Check PM2.5 forecasts and the current PM2.5 from any of the following: Washington Air Quality Advisory website, Air Quality WA mobile app, Washington Smoke Information website, U.S. EPA AirNow website, EPA AirNow mobile app, U.S. Forest Service AirFire website, Local Clean Air Agency website; or
- 5.1.3.2. Obtain PM2.5 forecasts and the current PM2.5 directly from the Department of Ecology, Local Clean Air Agency, U.S. EPA, EPA EnviroFlash.info, or local clean air agency by telephone, email, text, or other effective method; or





- 5.1.3.3. Measure PM2.5 levels at the work location in accordance with Appendix A in WAC Chapter 296-62-085.
- 5.1.3.4. If an index such as WAQA or AQI are used, the employer must use following table to find the equivalent WAQA or AQI for PM2.5.

NowCast PM <sub>2.5</sub> in Micrograms per Cubic Meter (μg/m <sup>3</sup> )	NowCast Washington Air Quality Advisory (WAQA)	NowCast Air Quality Index (AQI)
$20.5 \mu g/m^3$	101	69
55.5μg/m <sup>3</sup>	173	151

# 5.2. Communicating to employees

- 5.2.1. BNB Safety Department will disseminate air quality information on a daily basis to effectively communicate the hazards of unhealthy or hazardous air quality to all affected employees. Employees are encouraged to inform BNB supervision of unhealthy or hazardous air quality at the jobsite. The communication shall include the following procedures:
  - 5.2.1.1. Informing employees of the current AQI for PM2.5 prior to the start of work.
  - 5.2.1.2. Provide protective measures to employees to reduce their unhealthy or hazardous air quality exposures.
  - 5.2.1.3. Encouraging employees to inform their employer of worsening air quality; and any adverse symptoms that may be the result of unhealthy or hazardous air quality exposure such as asthma attacks, difficulty breathing, and chest pain.

# 5.3. Engineering Controls

5.3.1. BNB shall reduce employee exposure to PM2.5 to less than a current AQI of 151 by engineering controls whenever feasible, for instance by providing enclosed buildings, structures, or vehicles where the air is filtered. If engineering controls are not sufficient to reduce exposure to PM2.5 to less than a current AQI of 151, then the BNB shall reduce employee exposures as much as feasible. In Washington this will be considered and encouraged at AQI 69, and mandatory at 151.

#### 5.4. Administrative Controls

**5.4.1.** Whenever engineering controls are not feasible or do not reduce employee exposures to PM2.5 to less than a current AQI of 151, BNB shall implement administrative controls, if practicable, such as relocating work to a location where the current AQI for PM2.5 is lower, changing work schedules, reducing work intensity, or providing additional rest periods. In Washington this will be considered and encouraged at AQI 69, and mandatory at 151.

## 5.5. PPE

**5.5.1.** When required by this policy a N95 respirator equivalent APF 10 or higher shall be provided for voluntary use. (See Voluntary Respirator Use Form)

# 5.6. Training

- 5.6.1. As required in our "Freedom from Danger", BNB shall provide employees with effective training and instruction.
  - 5.6.1.1. For California employees training requirements shall be in accordance with <u>CSO 5141.1</u> <u>Appendix B</u>
  - 5.6.1.2. For Washington employees training requirements shall be in aligned with the WAC 296-62-085 Appendix B

# Health, Safety and Environmental Manual

"Freedom from Danger"

- **5.6.2.** Training topics for all employees will include, at a minimum:
  - 5.6.2.1. The health effects of wildfire smoke
  - 5.6.2.2. The right to obtain medical treatment without fear of reprisal
  - 5.6.2.3. How employees can obtain the current concentration of PM2.5 in the air
  - 5.6.2.4. The requirements of WAC 296-62-085 wildfire smoke rule (for projects in Washington)
  - 5.6.2.5. The employer's methods to protect employees from wildfire smoke
  - 5.6.2.6. The importance, limitations, and benefits of using a respirator when exposed to wildfire smoke
  - 5.6.2.7. How to properly put on, use, and maintain the respirators provided by the employer
- **5.6.3.** Supervisor Training will be provided to all supervisors prior to supervising employees performing work that exposes the worker to PM 2.5 that exceed their respective region's threshold for implementing worker protections (AQI 151/69). Supervisors will be trained in the following topics:
  - 5.6.3.1. The procedures the supervisor must follow to implement the applicable provisions of WAC 296-62-085 Wildfire Smoke or CSO 5141.1
  - 5.6.3.2. he procedures the supervisor must follow if an employee exhibits adverse symptoms of wildfire smoke exposure, including appropriate emergency response procedures; and
  - 5.6.3.3. Procedures for moving or transporting employees to an emergency medical service provider, if necessary. Local emergency facilities are located in each projects Site Specific Safety Plan and Crisis Management Plan.

# 5.7. Medical procedures in place for treatment of related symptoms

- **5.7.1.** If an employee has any of the following symptoms stated below that may be related to the exposure of unhealthy or hazardous air quality, they will need to report such symptoms their immediate supervisor:
  - 5.7.1.1. Irritation to the lungs
  - 5.7.1.2. Persistent coughing
  - 5.7.1.3. Phlegm, wheezing, or difficulty breathing
- **5.7.2.** Upon notification of symptoms from an employee, the supervisor will monitor the employee to determine if medical attention is necessary. If medical attention is necessary, the supervisor will implement the BNB Crisis Management Plan reporting and response procedures and facilitate the appropriate medical attention. Employees will not be penalized for seeking medical attention.

# 5.8. Notifications and Responses

**5.8.1.** Supervisors will report directly to the assigned BNB safety professional if they have an employee report symptoms related to wildfire smoke exposure.

# 6. References

- 6.1. CAL / OSHA Subchapter 7. General Industry Safety Orders
- 6.2. Appendix B to Section 5141.1
- 6.3. Group 16. Control of Hazardous Substances
- 6.4. Article 107. Dusts, Fumes, Mists, Vapors and Gases

# 7. Attachments

- **7.1.** BNB Respiratory Protection Program
- 7.2. Air Quality Guide for Particle Pollution
- 7.3. Voluntary Respirator Use Form



"Freedom from Danger"

# Working over Water

# 1.0 Purpose

1.1. This policy provides guidelines and recommendations for construction work carried out on, adjacent to or over water where hazard to personnel exists.

## 2.0 Scope

This policy applies to all BNB projects where personnel are potentially exposed to hazards while working over water.

## 3.0 Responsibility

# 3.1 Project Management

- 3.1.1. BNB Project Management & Supervision are responsible for conducting a preconstruction risk assessment to identify work tasks that may be adjacent to or over water where hazards to personnel exists. Control measures must be identified and followed up with to ensure implementation in the field. It is the responsibility of BNB Project Management & Supervision to ensure that these conditions are satisfied to prevent unprotected working over water.
- 3.1.2. It is the responsibility of BNB Project Management & Supervision to ensure that personnel potentially exposed to working over water have and follow an adequate Site-Specific Working over Water Plan (WOW Plan). Submittals that must be received and reviewed by BNB Project Management & Supervision consist of:
  - 3.1.2.1. Site-Specific Working over Water Plan
    - 3.1.2.1.1. Job/Activity Hazard Analysis (JHA)
    - 3.1.2.1.2. Pre-Task Plan (PTP)
    - 3.1.2.1.3. Competent Person
    - 3.1.2.1.4. Responsibilities
    - 3.1.2.1.5. Rescue equipment and procedures
    - 3.1.2.1.6. Lifesaving equipment to be used
    - 3.1.2.1.7. Fall protection measures
    - 3.1.2.1.8. Proof of training on:
      - 3.1.2.1.8.1. The employer's safety programs and procedures
      - 3.1.2.1.8.2. Fall awareness for working over water
      - 3.1.2.1.8.3. Equipment to be used (use, installation, maintenance, storage, etc.)
      - 3.1.2.1.8.4. Competent person
      - 3.1.2.1.8.5. OSHA 30
      - 3.1.2.1.8.6. CPR and First Aid
      - 3.1.2.1.8.7. Site-specific hazards
      - 3.1.2.1.8.8. Rescue equipment and procedures
      - 3.1.2.1.8.9. Lifesaving and personal protective equipment
  - 3.1.2.2. Lastly, BNB Project Management & Supervision must "inspect what we expect" by monitoring field conditions to ensure that Working over Water Plans are adequate and appropriately followed.

#### 3.2 Workers

3.2.1. Workers engaged in working over water are responsible for following their employer's safety program, procedures, and WOW Plan. Foremen are responsible for ensuring JHAs and daily pre-task plans are

# Health, Safety and Environmental Manual

"Freedom from Danger"

conducted, understood, and followed by their crew members. Competent persons are responsible for ensuring that their WOW Plan is adequate, amended as needed, communicated, and followed by crew members.

#### 4.0 Definitions

- 4.1. **Barge** An unpowered, flat bottom, shallow draft vessel including scows, car floats and lighters. For purposes of this section, the term does not include ship shaped or deep draft barges.
- 4.2. Body harness Straps which may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, shoulders, chest and pelvis with means for attaching it to other components of a personal fall arrest system.
- 4.3. **Bulwark –** The side of a ship above the upper deck.
- 4.4. **Coamings -** A raised border around an opening in a deck, roof, or floor, designed to prevent water from running below.
- 4.5. **Competent Person** Purposes of this part means a person who is capable of recognizing and evaluating employee exposure to hazardous substances or to other unsafe conditions and is capable of specifying the necessary protection and precautions to be taken to ensure the safety of employees as required by the particular regulation under the condition to which it applies.
- 4.6. **Gangway** Any ramp-like or stair-like means of access provided to enable personnel to board or leave a vessel including accommodation ladders, gangplanks and brows.
- 4.7. Gunwale The upper edge of the side or bulwark of a vessel.
- 4.8. **Jacob's ladders** A hanging ladder having ropes or chains supporting wooden or metal rungs or steps.
- 4.9. **Lifeline** A component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.
- 4.10. Lower levels Those areas or surfaces to which an employee can fall. Such areas or surfaces include but are not limited to ground levels, floors, ramps, tanks, materials, water, excavations, pits, vessels, structures, or portions thereof.
- 4.11. Personal fall arrest system a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, body belt or body harness and may include a lanyard, a deceleration device, a lifeline, or a suitable combination of these. As of January 1, 1998, the use of a body belt for fall arrest is prohibited.
- 4.12. Positioning device system A body belt or body harness system rigged to allow an employee to be supported at an elevated vertical surface, such as a wall or window, and to be able to work with both hands free while leaning.
- 4.13. Qualified person A person who by possession of a recognized degree or certificate of professional standing, or who, by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems related to the subject matter and work.
- 4.14. **Restraint (tether) line** A line from an anchorage, or between anchorages, to which the employee is secured in such a way as to prevent the employee from walking or falling off an elevated work surface. Note: A restraint line is not necessarily designed to withstand forces resulting from a fall.
- 4.15. Rope grab A deceleration device which travels on a lifeline and automatically, by friction, engages the lifeline and locks so as to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/level locking or both.
- 4.16. **Skiff** A flat-bottomed open boat of shallow draft, having a pointed bow and a square stern and propelled by oars, sail, or motor.
- 4.17. Vessel Every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water, including special purpose floating structures not primarily designed for or used as a means of transportation on water.

# 5.0 Procedure

# 5.1 Protection against drowning

5.1.1. When work is being carried out in an exposed position where there is a foreseeable risk of falling into water and it is impracticable to provide guardrails at the edges over water, personnel must wear a lifejacket or use a buoyancy aid. Rescue equipment should be provided.



"Freedom from Danger"

- 5.1.2. Guardrails and toeboards should be installed at edges where persons are liable to fall from height or into water. The guardrails should have adequate strength and should be securely fixed to a height between 39-45 inches above the ground or floor.
- 5.1.3. A minimum of two workers is required for operations when water is entered.

#### 5.1.4 Elevated Work Platforms

5.1.4.1. The design, construction, and use of elevated work platforms should comply with Scaffolds. Every edge of an elevated work platform from which a person might fall into water should be guard railed.

## 5.1.5 Mobile Equipment

- 5.1.5.1. If equipment is used on a site near water, concrete barricades should be installed at the water's leading edges whenever practicable.
- 5.1.5.2. During earth filling work (e.g. reclamation work) in which installation of concrete barricades is impracticable, equipment should not get near the edge of a temporary earth slope. The distance between any wheel of the equipment and the edge of the slope should not be less than ten feet. The fill materials deposited by the equipment should be spread and compacted by crawler track-mounted equipment, such as a bulldozer.
- 5.1.5.3. When crawler track-mounted equipment works at the edge of a permanent slope, overhanging of any part of the crawler track should not be permitted.
- 5.1.5.4. When operating aerial work platforms near or over water, lift occupants are not required to tie off because in the event that an error occurred that resulted in the employees being in the water, being tied-off would exacerbate the drowning hazard.

## 5.1.6 Concrete Barricades

5.1.6.1. When concrete barricades are required, they should be substantially constructed to a height at least 42 inches above the working surface, at a distance of at least ten feet from the edge near water.

# 5.1.7 Edges over water (i.e., leading edges, wall/floor openings, unprotected edges)

5.1.7.1. Every edge over water where a person is liable to fall from height or into water, should be provided with guardrails and toeboards. Please reference Walking and Working Surfaces and Fall Protection for additional information.

# 5.1.8 Safety Nets

- 5.1.8.1. Provisions to eliminate the risk of falling should always be the first consideration. However, if this is not practicable, use of suitable and adequate safety nets, harnesses, and lanyards attached continuously to a suitable and secure anchorage should be considered.
- 5.1.8.2. A safety net should be installed as close as possible to the working level and in compliance with the level specified by the manufacturer. Manufacturer's recommended procedures must be followed for assembly and disassembly.

# 5.1.9 Safe means of access and egress

5.1.9.1. Every means of access and egress should be kept safe. Every edge from which a person might fall from height or into water should be provided with guardrails and toeboards. The



"Freedom from Danger"

- means of access and egress should also be clear of any cargo lifting area and so located that no suspended load passes over it.
- 5.1.9.2. Every opening affecting safe use of the means of access and egress should either be fenced or be securely covered. If a means of access has been rendered unsafe for any reason, a controlled access zone must be established (i.e., physical barriers should be erected and warning notices prohibiting its use should be posted at every approach).
- 5.1.9.3. The means of access and egress and its immediate approaches should have non-slippery surfaces and should so far as is reasonably practicable be gritted. It should be kept free from any slippery material, obstruction or hazard caused by projecting fixtures or fittings. If such fixtures or fittings cannot be removed immediately, it should be suitably fenced off, painted or marked to alert users of the access and egress.
- 5.1.9.4. The means of access and egress should be kept in position as long as it is required. It should be well lit and properly maintained. At least two satisfactory means of escape should be available for use in an emergency.

# 5.1.10 Access to and from Vessels, Wharves, Floats, Barges, and/or Boats

- 5.1.10.1. Ramps for access of vehicles to or between barges shall be of adequate strength, provided with side boards, well maintained, and properly secured.
- 5.1.10.2. Unless employees can step safely to or from the wharf, float, barge, or river towboat, either a ramp or a safe walkway shall be provided.
- 5.1.10.3. When dredge discharge pipelines are used as walkways, they shall be provided with a flat surface walkway at least 12 inches wide, anchored to the pipeline to prevent displacement. A railing providing at least a single rail or taut rope 42 to 45 inches high shall be provided along one side. When rope is used, it shall be at least as strong as 3/4-inch diameter Manila or at least 3/8-inch diameter wire rope, or equivalent.
- 5.1.10.4. Catwalks or platforms shall be at least 20 inches wide with railings provided at all locations over bodies of water more than 4 feet deep. Planks for such use at those locations subject to immersion shall be rough sawn and treated to resist rot. Railings shall be installed.
- 5.1.10.5. When the upper end of the means of access rests on or is flush with the top of the bulwark, substantial steps properly secured and equipped with at least one substantial hand rail not less than thirty-four (34) inches or more than thirty-eight (38) inches above the tread nosing shall be provided between the top of the bulwark and the deck.
- 5.1.10.6. Obstructions shall not be laid on or across the gangway, ramp, catwalk or other means of access. The means of access shall be adequately illuminated for its full length.
- 5.1.10.7. Jacob's ladders shall be of the double rung or flat tread type. They shall be well maintained and properly secured. A Jacob's ladder shall either hang without slack or be pulled up entirely.

# 5.1.11 Working Surfaces of Barges

- 5.1.11.1. Employees shall not be permitted to walk along the sides of barges with coamings more than 5 feet high unless there is a 3-foot clear walkway or a grab or a taut hand line is provided.
- 5.1.11.2. Decks and other working surfaces shall be maintained in a safe condition.
- 5.1.11.3. Employees shall not be permitted to pass fore and aft, or over, or around deck loads, nor shall employees be permitted to walk over deck loads from rail to coaming, unless there is a safe passage.
- 5.1.11.4. If it is necessary for an employee to stand at the outboard or inboard edge of the deck load where less than 36 inches of bulwark, rail, coaming, or other protection exists, the



"Freedom from Danger"

employee shall be provided with a suitable means of protection against falling from the deck load.

#### 5.1.12 Rescue Procedures

- 5.1.12.1. A rescue team should be organized to deal with emergency situations, such as incidents. Every member of the team should be trained in rescue and emergency procedures. At least one of the members should be certified in CPR and First Aid.
- 5.1.12.2. First aid supplies, a stretcher, and a portable AED should be provided and kept readily accessible for emergency use.

# 5.1.12.3. Notices in English and the predominant language should be posted in prominent positions, especially at edges near water, stating the following:

5.1.12.3.1.	the locations and types of the rescue and life-saving equipment;
5.1.12.3.2.	the location of the room, if any, for treatment of injuries;
5.1.12.3.3.	the names of members of the rescue team; and
5.1.12.3.4.	the means of communication.

# 5.1.13 Emergency procedure

5.1.13.1. Emergency procedures should be identified in BNB's Crisis Management Program and the WOW plan.

# 5.1.13.2. The procedures should be expressed clearly in writing and should at least include the following:

5.1.13.2.1.	sounding the alarm for emergency including calling the police by dialing '911';				
5.1.13.2.2.	activating the rescue team;				
5.1.13.2.3.	dealing with emergency situations;				
5.1.13.2.4.	providing and using emergency and first aid facilities;				
5.1.13.2.5.	stating routes for rescue operation if necessary; and				
5.1.13.2.6.	sending rescued persons to hospital for medical treatment due to immersion in				
water (	water (possibly polluted) or injury.				

- 5.1.13.2.7. BNB's Crisis Management Plan and the WOW plan's emergency procedures should be posted in prominent locations.
- 5.1.13.2.8. All personnel should be trained on the emergency procedures. Drills and practices should be held regularly so as to ensure that all personnel are familiar with the emergency procedures.
- 5.1.13.2.9. The emergency procedures should be updated regularly so as to suit the progress of construction work. Drills and practices held can also help to identify the areas of weakness for improvement.

#### 5.1.14 Rescue equipment

- 5.1.14.1. The following safety devices shall be provided for and used by employees at those locations where the danger of drowning exists. EXCEPTION: Where employees are 100% protected by railings, nets, personal fall arrest, etc.
- 5.1.14.2. Employees shall be required to wear U. S. Coast Guard approved personal flotation devices that are marked or labeled Type I PFD, Type II PFD, or Type III PFD, or a U.S. Coast Guard approved Type V PFD that is marked or labeled for use as a work vest for commercial use or for use on vessels.

# Health, Safety and Environmental Manual

"Freedom from Danger"

- 5.1.14.3. U. S. Coast Guard approved 30-inch ring buoys with at least 150 feet of 600-pound capacity line shall be readily available for emergency rescue operations. Distance between ring buoys shall not exceed 200 feet.
- 5.1.14.4. One or more lifesaving boats, either manually or power-operated, shall be provided and readily accessible at all times. Lifesaving boats shall be properly maintained, ready for emergency use and equipped with oars and oarlocks attached to the gunwales, boathook, anchor, ring buoy with 50 feet of 600-pound capacity line and two life preservers. Oars are not required on boats that are powered by an inboard motor.
- 5.1.14.5. Where, because of swift current, lifeboats cannot be used, a line shall be stretched across the stream with tag lines or floating planks trailing in the water at intervals not to exceed 6 feet. If this is impracticable, some other arrangement for providing effective lifelines near the water surface shall be provided.
- 5.1.14.6. The employer shall ensure that there is in the vicinity of each barge in use at least one portable or fixed ladder which will reach from the top of the apron to the surface of the water. If the above equipment is not available at the pier, the employer shall furnish it during the time that the barge is in use.
- 5.1.14.7. All items of rescue equipment provided should be checked daily so as to ensure that they are in their proper locations and in good serviceable condition. All personnel should be informed of the functions and limitations of each item of equipment and be trained on how to use it properly.
- 5.1.14.8. Buoyant lifelines should be fiber ropes made of polypropylene with nominal diameter not less than 5/16" (8mm).
- 5.1.14.9. Grab lines should be provided where practicable, for the purpose of giving a person in water something to grab onto in emergency. The grab line provided should be of buoyant type and of sufficient length to accommodate high and low tides. A marker float at the free end of the grab line should be provided and trailing ends of undue length should be avoided so as to prevent the boats nearby from coming in contact with the grab line.
- 5.1.14.10. Lifebuoys, each fitted with a buoyant lifeline should be set at suitable locations but not exceeding 165 feet (50m) intervals along the edges over water where work is being carried out. Each buoyant lifeline should be knotted at every 10 feet (3m) to assist handhold and have a length of about 100 feet (30m).
- 5.1.14.11. The lifebuoys should be constructed of either cork with canvas covering, or of polyurethane foam with a rigid PVC cover. It is normally of 30 inches (760mm) outside diameter and 18 inches (455mm) inside diameter. For night work, a self-activating light should be fitted to it.
- 5.1.14.12. Rescue lines should be provided where practicable. Each rescue line should at least consist of a buoyant lifeline and a floatation device. Throwing the device out to a person in water can allow the person to grab the lifeline and he/she can be hauled to safety.
- 5.1.14.13. To achieve the best result, a lifebuoy or rescue line should be thrown as near as possible to a person in the water. If a tide is running, it should be thrown on the upstream side.
- 5.1.14.14. At least one rescue boat should be provided and kept ready for immediate use whenever personnel are employed to work over or adjacent to turbulent or tidal water where rescue of them would have to be carried out by boat. The rescue boat may be a rigid or an inflatable vessel. It should be properly maintained so that it is operational at any time and in good condition.
- 5.1.14.15. The rescue boat should be power-driven with a fixed self-starting engine. Effective two-way radio communication should be set up between the rescue boat and the management on the shore. If night work is to be carried out, a powerful swivel-mounted spotlight should be installed on the rescue boat so that any person fallen into water can be spotted easily.
- 5.1.14.16. The rescue boat should be fitted with grab lines and provided with at least one lifebuoy fitted with a minimum 50 feet (15m) long buoyant lifeline. For a large rescue boat, it should also



"Freedom from Danger"

- be provided with an overside boarding ladder or equivalent means to help rescue any unconscious person from the water.
- 5.1.14.17. The rescue boat should be marked clearly to show its intended use and it should not be permitted to use as a working vessel or an ordinary means of transport. First aid equipment including a bulb syringe for clearing a person's airway and blankets for covering the rescued person should be provided. The first aid equipment should be suitably protected from getting wet
- 5.1.14.18. The rescue boat should be manned by competent boatmen who should be trained in rescue and emergency procedures and should have completed a course in CPR/first aid. The boatmen should be competent in swimming, and they should be at least equipped with buoyancy aids while they are patrolling on board. So far as is reasonably practicable, there should be at least two boatmen on a rescue boat so that one is always free to rescue the person in water.

#### 5.2 Hazards

#### 5.2.1. The following is a list of construction scopes where water may be a potential hazard:

- 5.2.1.1. Bridge building
- 5.2.1.2. Marine works (i.e., wharfs, barges, decks, etc.)
- 5.2.1.3. Machinery or pipework installations over water
- 5.2.1.4. Dams, dykes, retaining walls, etc.

### 5.2.2. "Water" does not have to be just seawater, either. It can include any work on, over, or adjacent to:

- 5.2.2.1. Rivers or streams
- 5.2.2.2. Lakes or lagoons
- 5.2.2.3. Water storage areas
- 5.2.2.4. Sewage processing plants and pipelines
- 5.2.2.5. Sediment ponds
- 5.2.2.6. Etc.
- 5.2.3. The one major hazard involved in any of these examples is the possibility of a fall into the water, and drowning. Work on wastewater systems or locations (i.e., sewage plants, outlets, etc.) also presents health hazards which must be recognized.
  - 5.2.3.1. Work over stagnant water, sewage ponds, or in fact any contaminated water, presents special hazards. Should it be necessary, personnel will be inoculated against the several diseases which can be prevalent in these conditions, before starting on the job. ANY injury where the skin is broken, no matter how slight, MUST be treated with disinfectant immediately. Water quality even in rivers cannot be guaranteed.
  - 5.2.3.2. Hazards also exist in the use of machinery on barges, wharfs, decks, etc. where stability becomes a major issue. A barge (unless it is a jack-up type) makes an unstable base, especially when operating machinery. Be careful of loading, and watch weight distribution. In these conditions, personnel MUST be aware of the hazards created with water swell.
  - 5.2.3.3. Working on any site will usually involve wearing a tool belt and often heavy clothing, all of which will weigh a person down and make getting back to the surface very difficult.
  - 5.2.3.4. Several areas along the coast have large tidal rises and falls. This can mean a carefully planned work sequence is needed to ensure that nobody gets trapped by a rising tide. NOAA



"Freedom from Danger"

- (National Oceanic and Atmospheric Administration), local newspapers, etc. have detailed tide tables.
- 5.2.3.5. Especially at rivers and earth-bank canals, erosion can create hazards by undercutting and washing away the banks. What may have been a safe working area one day, could be hazardous after overnight rain.
- 5.2.3.6. Heavy rain in the catchment/basin area of a river can lead to river levels rising suddenly, and the water flow speeding up dramatically. This can apply quite some distance from the rain area, and with little warning.
- 5.2.3.7. (This can also affect falsework, scaffolding and temporary structures!)
- 5.2.3.8. Working alongside or over sea water can expose personnel and their equipment to the effects of salt spray. This can have a serious effect on skin and clothing, metal tools, and especially electrical equipment. Skin care is essential, as is clean and dry clothing and footwear.
- 5.2.3.9. Tools and metal items will need regular cleaning, and protection with a spray such as WD40 or similar lubricant. Salt can severely corrode and rust metals.
- 5.2.3.10. Tidal surges and boat wakes can create trapping hazards when working on barges or working platforms alongside piles, wharves, fixed access ladders, etc.
- 5.2.3.11. Any work where water and electricity have the potential to mix, require careful planning and operation.
- 5.2.3.12. The power supply to the job will have been determined to provide the safest possible conditions, and personnel MUST use any protective systems provided such as ground fault circuit interrupter, etc. Pay special attention to cord insulation and wrap cord connections with a waterproofing medium.
- 5.2.3.13. Use a tether device with power tools to stop them from falling into the water if they are dropped. NEVER use a power tool near any breaking waves.
- 5.2.3.14. Personnel must be aware that working over water can make footing slippery and hazardous. Be prepared for these conditions and ensure that personnel are always using the necessary safety equipment.
- 5.2.4. Potentially hazardous or unfavorable site conditions which will likely affect the safety of the workplace should be considered in the planning and design of the construction project.

#### 5.2.4.1. These may include the following:

- 5.2.4.1.1. sites with strong tides, winds or waves;
- 5.2.4.1.2. sites which are too remote from the city center or hospitals;
- 5.2.4.1.3. sites which have restricted space for maneuvering, such as those for temporary storage:
- 5.2.4.1.4. the activities of other contractors including sub-contractors within the sites;
- 5.2.4.1.5. adjacent maritime activities; and
- 5.2.4.1.6. emission of noise, toxic gases, harmful chemicals or dust from processes on or around the sites
- 5.2.5. Weather conditions that could have an adverse effect on the work over water include rain, high wind or typhoon, and those causing poor visibility, such as fog, marine layer, mist or glare.

#### 5.3 Personal Protective Equipment

5.3.1. Life vests are required when personnel are within six feet of the water's edge except when 100% fall protection is in place (i.e., guardrails, personal fall arrest systems, etc.) or when personnel are inside of equipment/machinery.

# Health, Safety and Environmental Manual

"Freedom from Danger"

- 5.3.2. Footwear with non-slippery soles should be worn while at work near water.
- 5.3.3. Employees working over or near water, where the danger of drowning exists, shall be provided with U.S. Coast Guard-approved life jacket or buoyant work vests. Prior to and after each use, the buoyant work vests or life preservers shall be inspected for defects which would alter their strength or buoyancy. Defective units shall not be used.
- 5.3.4. Personnel who have a foreseeable risk of falling into water should wear a lifejacket. Buoyancy aids are considerably inferior in performance to lifejackets. Use of a buoyancy aid will only be appropriate if the wearer is a proficient swimmer working close to the shore and he/she will unlikely be incapacitated by the environment. Instructions on the suitability of the equipment for specific situations should be sought from the manufacturers.
- 5.3.5. A lifejacket or buoyancy aid should fit the wearer and should allow the wearer freedom in action and movement. It should not unduly restrict his/her vision, hearing or breathing, nor contain any component causing injury to the wearer in normal use.
- 5.3.6. The lifejacket or buoyancy aid should have distinctive and easily visible color. Retro-reflective material should also be affixed on its surface which is normally above the water when it is in use. Its protective cover should be made of robust material which is resistant to abrasion, puncture and molten metal splash.
- 5.3.7. The lifejacket or buoyancy aid should preferably be provided with a whistle (for day work) and/or a self-activating light (for night work) which can aid in locating the wearer to facilitate rescuing.
- 5.3.8. The lifejacket or buoyancy aid should be properly maintained in a good serviceable condition. Prior to and after each use, it should be checked by the user for defect which might alter its strength or buoyancy. Any defect observed should be reported to the appropriate supervisor. Defective units should not be used.

#### 5.4 Training

5.4.1. All employees who are placed in a work situation where there is potential exposure to working over water must be trained on the PTP / JHA related to the work. Employees must have also gone through the <u>Site-SpecificOrientation</u>.

# 6.0 References

FED/OSHA 29 CFR 1926.106 Subpart E - Personal Protective and Life Saving Equipment

CAL/OSHA T8 CCR Subchapter 4 Article 13 – Work over or near Water

L&I WAC 296-155-200 through 296-155-240 - Personal Protective and Life Saving Equipment

# 7.0 Attachments

**JHA** 

Pre-Task Plan

Fall Protection Work Plan



# **Attachments**



# HIGH-LIFT POLICY

Eode#	Oper-19A
Rev.	O
Date	June-2018
Original Date	June-2018

# Aerial Work Platform (Scissor Lift/Boom Lift) Inspection

Company Name	Contact Number		
Type of Lift	Model or Equip Number		

DATE		MON	TUE	WED	THU	FRI	SAT	SUN
Initia	ls of person performing inspection							
Has ti	he operator been instructed in the safe operation of this type of lift?	YIN	Y/N	Y/N	Y/N	YIN	YIN	Y/N
	ection Item & Description Fail Status	P/F	P/F	P/F	P/F	P/F	P/F	P/F
1	Operating and emergency controls are in proper working condition EMO button or Emergency Stop Device.						1	
2	Upper drive control interlock mechanism is functional (i.e., foot- pedal, spring lock, or two hand controls).			7				
3	Emergency lowering function operates properly							
4	Lower operating controls successfully over-ride the upper controls.	-	E - 1	. = =				
3	Both upper and lower controls are adequately protected from inadvertent operation.		ij					
6	Control panel is clean & all buttons/switches are clearly visible (no fire proofing, paint over spray, etc.)			Ŧ	F 3			
7	All switch & mechanical guards are in good condition and properly installed.							
- 8	All Safety Indicator lights work.		Y	Y = =				
9	Drive controls function properly & accurately labeled (up, down, right, left, forward, back).							
10	Motion alarms are functional							
-11	Safety decals are in place and readable.		-	>				
12	All guardrails are sound and in place, including basket chains,		= 1	2 - =	= =			
13	Work platform & extension slides are clean, dry, & clear of debris.			7. 3				
14	Work platform extension slides in and out freely with safety locking pins in place to lock setting on models with extension platforms.	EI					=1	
15	Inspect for defects such as cracked welds, fuel leaks, hydraulic leaks, damaged control cables or wire harness, etc.							
16	Tires and wheels are in good condition, with adequate air pressure if pneumatic.	E		TE E	==			
17	Braking devices are operating properly.		$\gamma = i$	72.2				
18	The manufacturer's operations manual is stored on unit.							1

Workplace Assessment

Survey work area for potential hazardous operating conditions prior to use of Ensure all the hazards identified are addressed in pre task planning with suffice to mitigate the hazards and or risks		giçs	Are (	Conditio	ns Prese	nt 🗹	
Floor conditions: Drop offs, holes, uneven surfaces, sloped floors, etc.	0	-0	0	0	0	0	0
Housekeeping: debris, floor obstructions, cords, construction material/ supplies, etc.	0	0	0	0	0	0	0
Hazardous Energy: Electrical power cables or panels, chemical lines, gas lines, drain lines, utilities, etc.	0	0	0	O	o	0	0
Overhead obstructions; tight working conditions, adjacent structures, pipe racks, ceiling grids, etc.	0	0	Ö	0	0	0	Ó



# **Alternative Methods Documentation Form**

-	Cod: Op	er-9C
	Rev.0	Dec-18

Use with Chapter 296-809 WAC, Confined Spaces

Location of the Space			
Entry Date:	Entry Duration:		
List of Entrants			
			-
List of Physical Hazards in the space	List of (Potential or Actual) Atm space	ospheric Haza	ards in the
List each action taken to eliminate	physical and atmospheric hazard	ls in the space	
Action:	Description:		
	Ventilation		
Is forced air ventilation required?		1	
If "Yes", specify the type of ventilation (I.E. Local exhaust). Are multiple units required?	Amount of ventilation (CFM or A	YES AC/Hr)	NO
	Air Monitoring		

B	N	B
BWI	(u)	ers

# **Alternative Methods Documentation Form**

7	Cod: Op	er-9C
١	Rev.0	Dec-18

Substance Monitored:	Unit:	Permissible Levels:		Monitoring Results:		
				Initial Test:	Peak Reading During Entry:	
Instruments used for Model Number or T		ing	Calibration	Calibratio	on Check	
Additional Notes abo	ut the space an	d entry (including w	hether evacuation	on was necess	ary)	
Person Responsible	for Ensuring t	he Space is Safe to	Enter:			
Name:		Job	Γitle:			
Signature:		2.				

# ASSURED GROUNDING POLICY

Project:	
Electrical sub responsible:	
Competent Person:	

The person above shall be designated as the competent person, pursuant to WAC 296-155-447. This person shall be capable of identifying hazards relating to grounding and shall have the authority to see that any corrections are made. The procedure described is suitable for compliance with the requirements of WAC 296-155-447. It is BNB's to establish and implement an Assured Grounding Conductor Program to test for continuous circuitry on:

- (a) Cord sets and receptacles **NOT** a part of the permanent wiring of buildings or structures.
- (b) All electrical equipment and tools used in processes of construction or alterations.

# POLICY

Ground Fault Circuit Interrupters (GFCI) are required by the codes for all 120 volt, single phase, 15-20 ampere receptacle outlets which are not a part of the permanent wiring of a building on a construction project. As an alternative to the Ground Fault Circuit Interrupter requirement, it will be the policy of the BNBuilders to instruct employees **NOT** to use any equipment that does not meet the requirements of the Assured Grounding Program.

# PROCEDURE

All equipment to be used shall be tested, identified and coded using the following procedures, with the exception of the "double insulated" system, which need not be tested.

# **TESTING**

- All equipment shall be tested before first use for grounding and continuity of the circuitry.
- Equipment returned to service following repairs shall be tested for continuity before being used.
- Tests shall be done quarterly, at intervals not exceeding one every three months.
- Tested equipment shall be identified by use of color-coding. Two (2) colors shall be used. First color
  to identify the quarter and the second to identify the month within the quarter.
- Equipment shall be visually inspected before use each day for external defects, including deformed or missing pins, insulation damage and indication of possible internal damage. Equipment shall not be used until repaired, retested and recorded.

# RECORDING

The tests shall be recorded on the safety inspections scheduled and retained at the jobsite!

EMPLOYER CP\_\_\_\_\_

1st Quarter - White - White/Yellow /Blue

2<sup>nd</sup> Quarter – Green - Green/Yellow /Blue

3rd Quarter - Red - Red/Yellow/Blue

4th Quarter - Orange - Orange/Yellow/Blue

# ASSURED GROUNDING COLOR CODING SCHEME

Month/ Quarter	Quarterly	Monthly
JANUARY	WHITE	WHITE
FEBRUARY		YELLOW
MARCH		BLUE
APRIL	GREEN	GREEN
MAY		YELLOW
JUNE		BLUE
JULY	RED	RED
AUGUST		YELLOW
SEPTEMBER		BLUE
OCTOBER	ORANGE	ORANGE
NOVEMBER		YELLOW
DECEMBER		BLUE

# **Assured Grounding Program**

# Policy:

Ground Fault Circuit Interrupters (GFCI) are required by the captioned codes for all 120 volt, single phase, 15-20 ampere receptacle outlets which are not a part of the permanent wiring of a building or structure of/ or on a construction project. As an alternative to the Ground Fault Circuit Interrupter requirement, it will be the policy of the undersigned to instruct employees **not** to use any equipment that does not meet the requirements of the Assured Grounding Program.

#### Procedure:

All equipment to be used on the construction site shall be tested, identified and coded using the following procedures, with the exception of the "double insulated" system, which need not be tested.

# Testing: ✓ All Equipment shall be tested before first use for grounding and continuity of the circuitry. ✓ Equipment returned to service following repairs shall be tested for the continuity before being used. ✓ Tests shall be done quarterly, at intervals not exceeding one every three months.

☑ Tested equipment shall be identified by way of color-coding. Two (2) colors shall be used. First color to identify the quarter and the second to identify the month within the quarter.

Equipment shall be visually inspected before use each day for external defects, including deformed or missing pins, insulation damage and indication of possible internal damage. Equipment shall not be used until repaired, re-tested and results recorded.

All tests shall be recorded and attached to the site-specific schedule and retained at the job site.

# ASSURED EQUIPMENT GROUNDING CONDUCTOR PROGRAM TRACKING FORM

COMPANY NAME:
COMPETENT PERSON:
JOB NAME OR NUMBER

LOCATION	DATE TESTED	ACTION, IF ANY	REASON- A-B-C-D	TESTED BY CP

\*REASON FOR TEST: A. BEFORE FIRST USE.

B. BEFORE EQUIPMENT IS RETURNED TO SERVICE FOLLOWING ANY REPAIRS

C. MONTHLY INSPECTION OR AFTER INCIDENT

D. QUARTERLY TESTING/INSPECTION

COMPANY AUTHORIZED SIGNATURE:

DIND		CONFINED SPA	CE ENTRY PE	RMIT			Cod: O	
MBUILLER			4				Rev.1	Dec-18
ompany			Project			Date		0
	Confined Space					Time		
ntry Superv						Signature		
	lant(s) Name(s)							
uthorized E	ntrant(s) Name(s)							
	If 'NO' to all questions	in Step 1 (below), ti		e entered using the	e Alternate	Entry Procedures	(Sign below).	
ame			Signature					
				NTIFY HAZARDS	_		_	_
	HAZARD	A	YES	NO	_	IAZARD	YES	NO
	tmosphere (including				Pre-Opening Hazards			_
	nverging walls or floo	ers		Flammables / Fire				
Engulfment / Entrapment			Toxic Gases / Corros					
Any other serious safety hazard			Hazardous Energy					
ype of serio	us nazaro				Conditions Outside			
YES' to any	question in section A (a	bove) the space mu	st be classified	as PERMIT		ling Objects		-
	her serious safety haza				Lighting .	/ Noise   Hazards		
easonably lik	ely to occur if specific o	ontrols are not appl	ed.		Other	i ridzafQ\$		1
			STEE T. JOE	(TIEV CONTRIOLS	other			4
	DDE ENTRY AIR TO	STING		OCEDURE	DONE	PROCE	DURE	DONE
GAS	ACCEPTABLE	READING	Pre-Entry C	22777 7 110	DOINE	Lighting / Hear	6.100	
Oxygen	19.5-23.5%	READING		Entry Reading	-	Thermal Protec		1
LEL	<10%			leanout Electrical		Hydraulic Prote		
Toxics	<pel td="" tlv<=""><td></td><td></td><td>Purge Time</td><td></td><td>Radiation Prote</td><td>27.2.7</td><td></td></pel>			Purge Time		Radiation Prote	27.2.7	
Other	SPEET ILV		Lock out/ T					
ate of last	stiheation		Mechanica		1	Traffic Control / Barricading Pneumatic Isolation		1
est Instrum			Fall Protect			Hot Work	1001	1
C3t IIIstruii	CITE BITTE II	570.0		COLURED EQUIPA	ARTON	HOL WOLK		4
E	QUIPMENT	REQU		EQUIPM			REQUIRED	
entilator	ZOIL MEIG	nego	inco_	PPE	-141		negomen	
espirator				Body Prote	ection			
tmospheric	Monitor			Hearing pro				-
				Spark-proo				
locking nev				apara proc				
locking dev larness			- 5	Ladder/ Safe				
arness				Ladder/ Safe	access			
larness ripod - Eme	rgency Escape			Fire Exting	access uisher			
arness ripod - Eme iround Faul	rgency Escape t Provided			Fire Exting Lightin	access uisher			
arness ripod - Eme iround Faul	rgency Escape	STEP 4 - VPRIEY	ACCEPTABLE 6	Fire Exting Lightin Other	e access uisher ng	PLACE		
arness ripod - Eme iround Faul	rgency Escape t Provided rafe radio / phone	STEP 4 - VERIEY	A STATE OF THE OWNER,	Fire Exting Lightin	e access uisher ng r VS ARE IN	C. E. Albertan Co.		L DONE
arness ripod - Eme iround Faul ntrinsically s	rgency Escape Provided rafe radio / phone ACTION		ACCEPTABLE E	Fire Exting Lightin Othe NTRY CONDITION	e access uisher Ig r VS ARE IN EQI	JIPMENT		DONE
arness ripod - Eme iround Faul ntrinsically s eview Perm	rgency Escape t Provided afe radio / phone ACTION aft with Attendant and		A STATE OF THE OWNER,	Fire Exting Lightin Other NTRY CONDITION All Safety Equi	e access uisher ng r VS ARE IN EQ	JIPMENT		DONE
arness ripod - Eme iround Faul ntrinsically s eview Perm ntry Permit	rgency Escape t Provided afe radio / phone ACTION aft with Attendant and Posted at Portal	d Entrant	A STATE OF THE OWNER,	Fire Exting Lightin Other NTRY CONDITION All Safety Equit MSDSs Review	e access uisher ig r VS ARE IN EQ pment Ava	JIPMENT pilable		DONE
arness ripod - Eme iround Faul ntrinsically s eview Perm ntry Permit reparation	rgency Escape t Provided afe radio / phone ACTION aft with Attendant and Posted at Portal / Isolation Procedures	d Entrant s Done	A STATE OF THE OWNER,	Fire Exting Lightin Othe NERY CONDITION All Safety Equit MSDSs Review Pre-Opening H	e access uisher ng r VS ARIE IN EQI pment Ava ed azards Elia	JIPMENT pilable		DONE
arness ripod - Eme iround Faul ntrinsically s eview Perm ntry Permit reparation raffic Contr	rgency Escape t Provided afe radio / phone  ACTION aft with Attendant and Posted at Portal / Isolation Procedures of / Barricading Done	Entrant s Done	A STATE OF THE OWNER,	Fire Exting Lightin Othe NTRY CONDITION All Safety Equit MSDSs Review Pre-Opening H Employees Tas	e access uisher Ig r NS ARE IN EQI pment Ava ed azards Elin k Trained	JIPMENT pilable minated		DONE
arness ripod - Eme round Faul rtrinsically s eview Perm ntry Permit reparation raffic Contr	rgency Escape t Provided safe radio / phone  ACTION at with Attendant and Posted at Portal / Isolation Procedures of / Barricading Done attrant Communicatio	Entrant s Done	A STATE OF THE OWNER,	Fire Exting Lightin Other NTRY CONDITION All Safety Equit MSDSs Review Pre-Opening H Employees Tas Atmospheric To	e access uisher us r VS ART IN EQU pment Avi ed azards Elir k Trained ests Satisf	JIPMENT pilable minated actory	āzards	DONE
arness ripod - Eme round Faul rtrinsically s eview Perm ntry Permit reparation raffic Contr	rgency Escape t Provided safe radio / phone  ACTION at with Attendant and Posted at Portal / Isolation Procedures of / Barricading Done attrant Communicatio	d Entrant s Done n Tested	DONE	Fire Exting Lightin Other NTHY CONDITION All Safety Equit MSDSs Review Pre-Opening H Employees Tas Atmospheric To Surrounding Area:	e access uisher  IB  VS ANE IN  EQI  pment Avi ed azards Elii k Trained ests Satisf s Free From	JIPMENT  initiable  minated  actory  Vapors and Other I	āzārds	DONE
arness ripod - Eme iround Faul ntrinsically s eview Perm ntry Permit reparation raffic Contr ttendant/E mergency S	rgency Escape t Provided safe radio / phone  ACTION at with Attendant and Posted at Portal / Isolation Procedures of / Barricading Done attrant Communicatio ervices	d Entrant s Done n Tested STEP 5 - PERF	DONE  ORM LOWIN	Fire Exting Lightin Other NTRY CONDITION All Safety Equit MSDSs Review Pre-Opening H Employees Tas Atmospheric To Surrounding Area:	e access uisher  NS ARE IN EQI pment Ave ed azards Elia k Trained ests Satisf s Free From	DIPMENT silable minated actory Vapors and Other H		
arness ripod - Eme iround Faul ntrinsically s eview Perm ntry Permit reparation raffic Contr ttendant/E mergency S GAS	rgency Escape t Provided afe radio / phone ACTION at with Attendant and Posted at Portal / Isolation Procedures of / Barricading Done attrant Communication ervices  ACCEPTABLE	d Entrant s Done n Tested	DONE	Fire Exting Lightin Other NTHY CONDITION All Safety Equit MSDSs Review Pre-Opening H Employees Tas Atmospheric To Surrounding Area:	e access uisher  NS ARE IN EQI pment Ave ed azards Elia k Trained ests Satisf s Free From	JIPMENT  initiable  minated  actory  Vapors and Other I	ázard5 TIME	
arness ripod - Eme iround Faul ntrinsically s eview Perm ntry Permit reparation raffic Contr ttendant/E mergency S GAS Oxygen	rgency Escape t Provided afe radio / phone  ACTION at with Attendant and Posted at Portal / Isolation Procedures of / Barricading Done attrant Communication ervices  ACCEPTABLE 19.5-23.5%	d Entrant s Done n Tested STEP 5 - PERF	DONE  ORM LOWIN	Fire Exting Lightin Other NTRY CONDITION All Safety Equit MSDSs Review Pre-Opening H Employees Tas Atmospheric To Surrounding Area:	e access uisher  NS ARE IN EQI pment Ave ed azards Elia k Trained ests Satisf s Free From	DIPMENT silable minated actory Vapors and Other H		DONE
arness ripod - Eme iround Faul ntrinsically s eview Perm ntry Permit reparation raffic Contr ttendant/E mergency S  GAS  Oxygen LEL	rgency Escape t Provided afe radio / phone  ACTION at with Attendant and Posted at Portal / Isolation Procedures of / Barricading Done attrant Communication ervices  ACCEPTABLE 19.5-23.5% <10%	d Entrant s Done n Tested STEP 5 - PERF	DONE  ORM LOWIN	Fire Exting Lightin Other NTRY CONDITION All Safety Equit MSDSs Review Pre-Opening H Employees Tas Atmospheric To Surrounding Area:	e access uisher  NS ARE IN EQI pment Ave ed azards Elia k Trained ests Satisf s Free From	DIPMENT silable minated actory Vapors and Other H		
arness ripod - Eme iround Faul irtrinsically s eview Perm ntry Permit reparation raffic Contr ttendant/E mergency S  GAS  Oxygen  LEL  Toxics	rgency Escape t Provided afe radio / phone  ACTION at with Attendant and Posted at Portal / Isolation Procedures of / Barricading Done attrant Communication ervices  ACCEPTABLE 19.5-23.5%	d Entrant s Done n Tested STEP 5 - PERF	DONE  ORM LOWING	Fire Exting Lightin Other NTRY CONDITION All Safety Equit MSDSs Review Pre-Opening H Employees Tas Atmospheric To Surrounding Area:	e access uisher  NS ARE IN EQI pment Ave ed azards Elia k Trained ests Satisf s Free From	DIPMENT silable minated actory Vapors and Other H		
arness ipod - Eme round Faul trinsically s eview Perm stry Permit eparation affic Contritendant/E mergency S GAS Oxygen LEL Toxics Other	rgency Escape t Provided afe radio / phone  ACTION at with Attendant and Posted at Portal / Isolation Procedures of / Barricading Done attrant Communication ervices  ACCEPTABLE 19.5-23.5% <10%	d Entrant s Done n Tested STEP 5 - PERF	DONE ORM CONTIN	Fire Exting Lightin Other Other NTRY CONDITION All Safety Equit MSDSs Review Pre-Opening H Employees Tas Atmospheric Ti Surrounding Area	e access uisher IIB I VS ARTEIN EQI pment Avi ed azards Elin k Trained ests Satisf s Free From NG DF EN	DIPMENT silable minated actory Vapors and Other H		



# CORE DRILLING/SAW CUTTING CHECKLIST

	AUTHORIZATION VALID FOR	ON	1	1	_ONLY.
	IDENTIFY LIVE UTILITY/PT CABLES				
ор	is core drilling/saw cutting checklist is required to be comeration(s). Identify utilities in the area (Electrical, Sprinkler Suc.). Applicable Job Hazard Analysis (JHA) and/or Pre-Task Pla	pply, Gas, Water Supply, Sani	tary/Sto	rm Sewe	r, Process Pipe
Pro	oject:				
Loc	cate/Scanner Receipt/Ticket # Date Scann	ed: / /			
o	Has the core or saw cutting location been reviewed and a	pproved by the structural eng	ineer or	architec	t?
	If available, have As-Builts and other drawings been review	wed to determine utility/drop	beam/f	T. cable	locations?
	Has imaging been done by 3 <sup>rd</sup> party to locate P.T. cables a ray/Other)	nd other utilities (in house sca	anning o	nly is NO	T allowed)? (GPR/X
U	Did BNB supervisor accompany scanner during scanning p	rocess?			
	Does imaging need to be conducted from the underside o	f slab? If so, did markings get	transfe	rred to th	te top side?
U	Is penetration laid out the correct distance away from PT	cable? (at least 3-inches away	1		
	Is penetration the correct distance away from rebar? (1-in	ich away, or approval from en	gineer t	o cut reb	ar)
	Is penetration the correct distance away from electrical co	Is penetration the correct distance away from electrical conduit? (at least 3-inches away)			
	Penetrations in slab greater than %-inch have been scanned by 3 <sup>rd</sup> party (This includes roto-hammering for anchors)				
	If there is electrical in the slab, has it been de-energized by the electrician, locked and tagged out?				
0	Have you checked to see if there are other utilities on the	underside of the slab you nee	ed to pro	stect?	
	가는 이렇게 어느 아내가 가게 다른 다음이 하는 것이 없어요. 그 아내는	2			
ū	마음을 하다면 하다는 이렇게 하다면 모양하다. 나는 바람들이 살아보는 사람들이 나를 하는데 하다는 사람들이 되었다. 그렇게 되었다면 하다 그렇게 되었다.				
			able 17		
0	Is the tool operator trained/certified/competent?  Are edges or openings protected by curbs or stop-logs to	acallant antilomant from a training	lea suo	مامة مناه	rea.
	Has a BNB supervisor walked, reviewed, and approved the supervisor's initials next to it)	현대는 많은 기가들이 가게 있는 것이다.	7		
Act	tivity Start Time:Schedule	Completion Time:			_
Co	ntractor Competent Person Assigned to Task (printname):				=
BN	Builders site supervisor has reviewed work plan (BNB Signa	ature):			
	Builders PM or Foreman has reviewed (Signature):				
	ctrical Supervisor has performed lockout tagout if necessar				
	te Reviewed: / / Reviewed with wh				



# CORE DRILLING/SAW CUTTING CHECKLIST

Contractor Signature:		Date:
	Drilling/Saw Cutting Checklist and understar this document, including the attached Job I	nd that I am required to carry out the above-described Hazard Analysis (JHA), and Pre-Task Plan.
Print Name	Signature	Company

If there is <u>ANY conflict</u> with the core or saw cut, **STOP**, and bring it to BNB's attention. This core or saw cut location should be reviewed with the engineer and architect before continuing. Options that may need to be discussed include but are not limited to; moving the core location, re-routing the system a different way, or surface mounting that particular system. All crews involved in the coring and saw cutting process shall review this document before they start their operations.



# Crane Pick Plan

Description of Load	
Project Name	
Project Address	
Date of Pick	
Crane Provider	
Owner	
Owner's Representative	
BNB Superintendent (Site Supervisor)	
BNB Project Manager	6
105 Marie 11 11 11 11 11 11 11 11 11 11 11 11 11	0
Contractor Responsible	
Contractor Superintendent	
Contractor Project Manager	
lft Director	
V/D Director (Mobile Crane)	
A/D Director (Tower Crane)	
	Narrative
Complete a detailed description of the pio	

# **Pick Permit**

Pick Plan Weights				
Load Block Ball Spreader Bar	lbs lbs lbs lbs	Wire Rope Rigging Deduction of Jib	Ubs O lbs Ibs	
		Total Load	0 lbs	
Has load weight been verified? How?	_	Yes	No	
Is this a tandem pick?		Yes	No	

	Crane Information		
Serial #	Outrigger Extension:	Full	
Crane Capacity		Half	
Boom Radius		N/A	
Boom Height		_	
Boom Angle	Lift Will Be:	Side	
Boom Length		Front	
Counterweight		Rear	
Parts of Line		-	
Line Capacity	On Crawlers	Extended	
		Retracted	·
Wind Speed Shutdown		N/A	
		_	·
	Crane Picks on Rubber Tires Are Not Allowed!		

Capacity Verification					
Total Load		0	lbs		
Crane Capacity			lbs		
Lifting Percentage of Crane Co	apacity:	#DIV/0!	]		
Pick Classification:	Normal Lift Critical Lift Engineered Lift	0% - 74% 75% - 89% 90% - 100%	<u> </u>		
Permit Completed By:					

# **Site Logistics**

Location of Pick Site Logistics Map Included? Crane Set Up On: Soil Bearing Pressure Max Load On Individual Outrigger Are Underground Utilities Present? List Utilities	Yes Soil	Yes	No Asphalt	No	Concrete
Are Overhead Utilities Present? List Utilities		Yes		No	
Proximity of Overhead Utilities to Pic	k				
Sketch Map of Pick if Not Included					

# **Rigging Information**

		Shack		
Type	Capacity	Qty	Weight	Total Weight
			<u> </u>	
			_	
			Shackle Weights	0
			Shackle Weights	ŭ
		Synthetic Stra	aps/Slings	
Type/Color	Configuration	Capacity Qty		Total Weight
yellow			•	
blue				
			Synthetic Weights	0
_		Wire R		
Type	Capacity	Qty	Weight	Total Weight
			<del>-</del>	
			<del>_</del>	
			Wire Rope Weights	0
			Time Hope Treights	•
		Chair	15	
Type	Capacity	Qty		Total Weight
			_	
			Chain Weights	0
Torri		Spreader		Tarabarata
Type	Capacity	Qty	Weight	Total Weight
			_	
			Spreader Bar Weights	0
			Spicadei bai Weigitts	Ū

Total Rigging Weight 0
------------------------

# **Rigging Diagram**

Is a Rigging Diagram included? Sketch Rigging Diagram if not included(Site	Yes te plan and vertical)	No

# Sign - Off

Contractor Responsible		
Contractor Superintendent		
Contractor Project Manager	3	= 11
Contractor Safety Manager	=	
(If Required)	-	
BNB		
BNB Superintendent		
BNB Project Manager		
Safety Director		
(If Required)		
10.000,000		

On-Site Pre-Pick Meeting	
Lift Director	
Crane Operator	
A/D Director (Mobile Crane)	
A/D Director (Tower Crane)	
Certified Rigger/Signal Person	
Crew Members	
The carrier	
14	
	-
16	
+	. 3
14 1	

# Crane Pick Plan Checklist



BNB	Yes	No	N/A	(Votes
Live Utility Map			1	
Underground Structures			71 = 17	
Soil Bearing Pressure		3444		
Overhead Utilities		152.11		
Barricade and Signage Required?	1	1 1 1 11	11 == 11 %	
Building Heights				

Responsible Contractor	788	No	N/A	Wotes
Detailed Narrative				
Load Weight Verification		1	1	
Site Logistics				
Crane Layout				
Rigging Diagram		117 11		
Identify Load Pick Points				
Does Load Include Oil/Coolant?		*		
JHA Complete?		1 1 1	( ) == == i(	
Engineering for Multiple Crane Pic		-7 = 11		
Hoisting Over Occupied Spaces?				
Hoisting in Close Proximity to Powe				
Hoisting Long Lead or High Value Ite				
Engineered Pick? - Stamped Calcs In	-			
Fall Protection Plan				

Crane Provider	Yes	No	N/A	Womes
Annual Crane Cert.				
Is Customer Named on Insurance Ce				
Crane Serial Number				
Crane Capacity				
Load Charts				
Crane Configuration		1 = 1		X
Boom Height/Angle			1	
Crane Radius				
Load Over Any Outrigger		100	1	
Crane Mats/Blocking/Steel Plates		1221		
Certified Crane Operator NCCCO Ca				
Certified Rigger Card		7 1 = 11		
Communication System?		1 7 7 1		
Lattice Boom Crane				
Erection/Dismantle Pla		7 - 11		2
Load Test Required		15.24		
On Site Inspection				



# DEMOLITION PERMIT

Date:	DECD	Comments
Good Faith Surv		
Did We Receive a Good Faith Survey?		
If Yes, Does It Satisfy Our Requirements?		
If Not, Need to Complete Material Sampling/Testing		
**Lab Equipment - Do We Have Documentation That It is Clean?		
Have We Sent Copy of Information to Subs / Employees?		
Is the Building Safe to Enter?		
Are There Specific Areas That Are Unsafe to Enter?		
PCB ballasts and fluorescent light bulb disposal Required?		
Type of Demolition		
Select Non Structural Demo?		
Structural Demo - Concrete, Roof, Steel, Wood?		
Lab/Specialty Equipment - Biohazards, Chemicals, Hazmat?		
Demo Methods - Labor, Heavy Equipment, Handtools?		
Building Structure Type		
**If Demo of Post Tension Concrete - Need to Verify Preventatative		
Measures and/or Destressing Plan		
HAZMAT Concerns?		
Is Building Safe for Equipment Weights? Structural Engineer to Review		
Noise / Vibration Concerns within Building?		
Noise Concerns in Neighborhood?		
Need Industrial Hygienist?		
Required Permits		
Does Demo Require City Permit?		
Abatement Permit?		
Noise Variance Permit?		
Street Use Permit?		

Emergency Evacuation Plan in Place?
Is There a Need for an L&I Consultation?
Existing Equipment Decommissioned (Tanks, HVAC Chemicals, Light Ballasts?)
Lockout Tag Out Program in Place?
**Hot Work Permits Required?
**Shutdowns Require MOP?
**Coordinated Shutdowns with Building Owner/Tenant?
**Fire Sprinkler Drained? Fire Watch Required?
**Fire Alarm System Shutdown or Put in Test?
**Electrical Sub Confirm Work Area Safe'd Off?
**Identified MEP Systems to Remain - Marked in Field?
JHA, PPE Assesment and Pretask Plans Completed?
Logistics Plan Completed?
Site Conditions Reviewed By BNB Safety Representative?
Site Specific Safety Plan Completed?
If Using Demo Subcontractor - Do We Have Sub Demo Work Plan?
Work Area
**Includes Identifying Any Electrical or Mechanical Room Outside of
**Need to Pot Hole to Confirm?
**Includes Utility Locates (Exterior & Interior) Subs to Call Dig Alert #?
**Includes Review of As-Builts & Tenant / Building Owner
**Includes Locations of All Shutoff Valves for Utilities
Live Utility Plan Completed and Reviewed with Subs?
Completed BNB Plumbing/Piping Demo Checklist? Separate Document
Completed BNB HVAC Demo Checklist? Separate Document
Completed BNB Electrical Demo Checklist? Separate Document
Internal checklist
Specialty PPE: High Visiblity Clothing, Kevlar Sleeves?
Shoring & Support Scaffold?
Temp Protection: Interior / Exterior, Safety Rails, Signage
Air Quality Plan: Air Sniffers, Fans, Fresh Air Supply, Exhaust?
Specialty Tools & Plans

Required Training		
2 Hr. Asbestos Awareness Training?		
Lead Awareness/RRP Training?		
Mold Awareness Training?		
Is There Any Other Training Needed for This Project?		
Sign off on Demolition	Signature	Date
BNB Safety Director or General Superintendent		
Site safety representative		
Foreman in charge	'	
Site Superintendent		



## **Electrical Demolition Work Plan**

The steps below are required to perform Make Safe Activities for demolition:

- Identify <u>all</u> electrical circuits feeding into or passing through the area / room if any
  conduit cannot be identified, bring it to the attention of BNB/ Owner for further review.
- Identify all electrical items and conduit for Lock Out Tag Out (LOTO) noted on the demolition plan
- 3. Submit LOTO circuit list to facilities (CMC)
- 4. Facilities & electrical contractor to LOTO all identified circuits (two locks)
- Verify Zero Energy
  - Identify required PPE
    - Arc Flash Protection Electrical contractor to identify OSHA PPE requirements based on activities
    - Shock Protection Hard hat, safety glasses, face shield, long sleeves,
       leather gloves, pants, work boots no high vis vest or polyester clothing
  - · Use Muti Meter at final termination verify zero reading
    - A Primary Authorized Person (PAP) and a separate reviewer (BNB) must witness the zero energy reading
    - Fill out and sign BNB's LOTO portion of the Electrical Demo Sign Off Check
       List
- Once zero energy is verified at the termination point, mark/ label within 6" in green tape or paint indicating demo.
- Continue through all remaining LOTO circuits repeating steps 5 & 6
- 8. Open all 'J' boxes or pull boxes on circuits/ conduit to demo leave boxes open
- Perform a redundant test using a pen type inductance tester where applicable –
  examples including but not limited to: 'J' boxes, pull boxes, found conductors, etc.,
  verifying each conductor again for zero energy shock protection PPE required
- 10. Label/ mark each conduit leg within 6" of the box green for demo or red to stay,
- 11. Pull conductors or wires as directed by the demo drawings. If wiring is to be coiled up for later use, label/ Tag the end of the wires with the corresponding LOTO information.
- Label/ mark conduits to demo every 15' and at both sides of the wall as required per demo drawings
- 13. Make a 6" visual cut or separation at both sides of walls as required.
- 14. A ring system must be utilized for the demo of the conduits. The ring slides forward along the conduit as demo progresses. Only the conduits with the ring may be cut.
- Once complete, fill out remaining portion of the BNB's Electrical Demo Sign off Check
   List and submit it to the superintendent.
- Post Demo signs in area Green is Go (demo), Red is Stay, No label STOP!
- 17. Demo all green labeled electrical items.



# ELECTRICAL DEMO SIGN OFF CHECK LIST

#### PROJECT NAME:

ISCIPLINE:	CONTRACTOR	RESPONSIBLE PERSON (Print Clearly)	DATE
lectrical - greater than 50V			
List circuits affected, Panels, MQCs, etc.			
Lock Out Tag Out Complete			
Witness			
Verification of Zero Energy in the field			
Widness			
Electrical - greater than 50V complete			
lectrical - less than 50V		,	
lectrical - less than 50V		T- T	
Security System			
Camérás			
Access Control			
Fire Alami			
Smake Delectors		1.1	
Duct Detectors		1.1	
HVAC Controls			
Telecom / Date			
Equipment Alarms / Monitoring Devices			
Miscellaneous			
Electrical - Less than 50V complete			
NB Quality Control			
-71.7.7.1	GREEN is GO	The second of	
ALL UTILITY LAYOUT/ LABELING MUST BE COMPLETE	(demo)	RED is STAY	

BY SIGNING THIS DOCUMENT YOU AGREE THAT YOU HAVE INSPECTED YOUR WORK IN THIS ROOM AND YOUR WORK IS COMPLETE AND PERFORMED CORRECTLY PER CONTRACT DRAWINGS, SPECIFICATIONS AND DEMO REQUIREMENTS. ALL SAFE OFF ACTIVITIES HAVE BEEN COMPLETED.

Green markings are required every 15 feet



# **HVAC Demolition Work Plan**

The steps below are required to perform Make Safe Activities for demolition:

- 1. Identify <u>all</u> HVAC systems feeding into or passing through the area / room
- 2. Verify all Fume exhaust ductwork has been cleaned and no hazardous chemicals are present
  - Obtain a written copy of proof from BNB
- 3. Identify all systems to demo for Lock Out Tag Out (LOTO) from the demolition plan
- Submit LOTO list to facilities (CMC)
- Facilities (CMC) & HVAC contractor to LOTO all identified systems (two locks)
- 6. Continue through all remaining LOTO of systems, repeating steps 5, 6 and 7.
- 7. Perform cut and capping activities.
- 8. If a Hot Work permit is needed:
  - · Verify approval and obtain a hot work permit
  - · Verify the fire alarm is on test
  - Using a dedicated fire watch (see BNB/CMC's Fire Watch requirements)
  - · Use a 20 lb dedicated fire extinguisher
- Label/ mark each end of the HVAC duct to be demo'd green for demo and red to stay.
- Label/ mark HVAC duct and equipment to demo every 15' and at both sides of the wall as required per demo drawings
- 11. Make a 6" visual cut or separation at both sides of walls or equipment as required.
- Once complete, fill out remaining portion of the BNB's HVAC Demo Sign off Check List and submit
  it to the superintendent.
- Post Demo signs in area Green is Go (demo), Red is Stay, No label STOP!
- 14. Demo all green labeled HVAC items.



# HVAC DEMO SIGN OFF CHECK LIST

PROJECT NAME:

ISCIPLINE:	CONTRACTOR	RESPONSIBLE PERSON (Print Clearly)	DATE
IVAC			
Supply		4.4	
Lock Out Tag Out Complete for each system		101	
Witness			
All HVAC Supply Cut and Cap/ Isolation/ Make Safe activities are complete			
Exhaust			
Lock Out Tag Out Complete for each system			
Witness			
All HVAC Exhaust Cut and Cap/ Isolation/ Make Safe activities are complete			
Fume Exhaust		3	
Lock Out Tag Out Complete for each system			
Witness			
All HVAC Fume Exhaust Cut and Cap/ Isolation/ Make Safe activities are complete			
All HVAC Cut and Cap / Isolation/ Make Safe activities are complete			
NB Quality Control		i i	
ALL UTILITY LAYOUT/ LABELING MUST BE COMPLETE	GREEN is GO (demo)	RED is STAY	П
COMPLETE	Violalia savaración al walls and systema la remain Isocial manuros ere requi ed every 15 feet	Use you danger laps to identify systems to remain Red Markings are required every 15 feet	

BY SIGNING THIS DOCUMENT YOU AGREE THAT YOU HAVE INSPECTED YOUR WORK IN THIS ROOM AND YOUR WORK IS COMPLETE AND PERFORMED CORRECTLY PER CONTRACT DRAWINGS, SPECIFICATIONS AND DEMO REQUIREMENTS. ALL SAFE OFF ACTIVITIES HAVE BEEN COMPLETED.

CC:

BNB File Subcontractors



# Plumbing / Piping Demolition Work Plan

The steps below are required to perform Make Safe Activities for demolition:

- Identify <u>all</u> plumbing/piping systems feeding into or passing through the area / room if any plumbing or piping cannot be identified, bring it to the attention of BNB/ CMC for further review.
- 2. Verify all piping has been cleaned and no hazardous chemicals are present
  - · Obtain a written copy of proof from BNB
- 3. Identify all systems for Lock Out Tag Out (LOTO) noted on the demolition plan
- Submit LOTO list to facilities (CMC)
- 5. Facilities (CMC) & plumbing/ piping contractor to LOTO all identified systems (two locks)
- 6. Verify Zero Energy
  - · Identify required PPE
  - · Is line breaking involved? If so, follow CMC's Line breaking procedures
  - Drain systems
    - A Primary Authorized Person (PAP) (CMC) will verify drain down of each system
    - Fill out and sign BNB's LOTO portion of the Plumbing / Piping Demo Sign Off Check
       List
- 7. Once system is drained, mark/ label cut and cap and valve locations with Red Danger Tape
- 8. Continue through all remaining LOTO of systems, repeating steps 5, 6 and 7.
- 9. Perform cut and capping or valve installation activities.
- 10. If a Hot Work permit is needed:
  - Verify approval and obtain a hot work permit
  - Verify the fire alarm is on test
  - Using a dedicated fire watch (see BNB/CMC's Fire Watch requirements)
  - Use a 20 lb dedicated fire extinguisher
- Label/ mark each end of the plumbing/ piping run to be demo'd green for demo and red to stay.
- Label/ mark plumbing/ piping to demo every 15' and at both sides of the wall as required per demo drawings
- Make a 6" visual cut or separation at both sides of walls or equipment as required.
- 14. A ring system must be utilized for the demo of the plumbing and piping. The ring slides forward along the plumbing or piping as demo progresses. Only the plumbing or piping with the ring may be cut.
- Once complete, fill out remaining portion of the BNB's Plumbing/ Piping Demo Sign off Check List and submit it to the superintendent.
- Post Demo signs in area Green is Go (demo), Red is Stay, No label STOP!
- Demo all green labeled plumbing and piping items.



# PLUMBING / PIPING DEMO SIGN OFF CHECK LIST

#### PROJECT NAME:

DISCIPLINE:	CONTRACTOR	RESPONSIBLE PERSON (Print Clearly)	DATE
Plambing			
List all systems affected			
Lock Out Tag Out Complete for each system			
Witness			
Verification of Zero Energy in the field			
Witness			
Miscellaneous			
All Plumbing Make Safe activities are complete			
iping			
List all systems affected			
Lock Out Tag Out Complete			
Witness		11	
Verification of Zero Energy in the field			
Witness			
Miscellaneous			
All Piping Make Safe activities are complete			
All Piping Make Safe activities are complete			

BY SIGNING THIS DOCUMENT YOU AGREE THAT YOU HAVE INSPECTED YOUR WORK IN THIS ROOM AND YOUR WORK IS COMPLETE AND PERFORMED CORRECTLY PER CONTRACT DRAWINGS, SPECIFICATIONS AND DEMO REQUIREMENTS. ALL SAFE OFF ACTIVITIES HAVE BEEN COMPLETED.

RNR	DETERMINATION OF CONTINUED FRACE		Cod: Oper-9A	
BREWLIGHTS-	DETERMINATION OF CONFINED SPACE	Rev.0	Apr-17	
	CONFINED SPACE DETERMINATION			
1	Is the space large enough and so configured to allow bodily entry?	Yes	No	
2	Is it not designed for human occupancy?	Yes	No	
3	Does the space have limited or restricted means of entry and exit?	Yes	No	
	PERMIT REDUIRED LOWEINED SPACE DETERMINATION			
To have the	rext step			
	PERMIT REQUIRED CONFINED SPACE DETERMINATION	Vac	. No	
4	Does the space contain or have the potential to contain a hazardous atmosphere?	Yes	No.	
4 5	Does the space contain or have the potential to contain a hazardous atmosphere?  Does the space contain or have the potential for engulfment or entrapment?	Yes	No	
4 5 6	Does the space contain or have the potential for engulfment or entrapment?  Does the space contain inwardly Converging Walls?	Yes Yes	No No	
4 5	Does the space contain or have the potential to contain a hazardous atmosphere?  Does the space contain or have the potential for engulfment or entrapment?	Yes	No	
4 5 6 7 8	Does the space contain or have the potential to contain a hazardous atmosphere?  Does the space contain or have the potential for engulfment or entrapment?  Does the space contain inwardly Converging Walls?  Does the space contain ANY OTHER serious recognized safety and health hazard?	Yes Yes Yes Yes	No No	



# DIG PERMIT

Code # Oper-12A Rev. 0 Date Jun-2018

AUTHOR	RIZATION DATE:\\ CONTRACTOR:
	ny type of excavation including, trenching, concrete cutting or ground penetration of any kind, is planned for a jobsite a <b>Dig Permit</b> will be ted. The following information will be addressed and authorized by site <b>Superintendent and Project Manager</b> prior to any excavation.
SECTIO	ON 1
Project:	
One Call	(811) Ticket # Date Called: / / 20 Past 45 days? Yes No
	locates and/or radar imaging (GPR) are required if dig/cut is located within property lines or building. Additional radar imaging required after a has been removed to ensure no utilities exist under slab location.
Excavati	ion Checklist
	Area of work is marked in white paint and marked on a copy of site Live Utility Map and dated (Attached)
	Area has been located by 811 and/or Private Locates (Private Locate Company/Contact:)
	Review area, Locates and mark-up with BNB Superintendent or Project Manager
	Review Live Utility Map posted in BNB Trailer
	JHA completed by subcontractor and reviewed by BNB supervision
EI.	All employees involved in excavation have signed attached attendance sheet.
	If NO utilities are within 10° of proposed excavation proceed to section 3 below.
SECTIO	ON 2
	litional requirements outlined below are required for any work operation taking place within 10 feet of any live utility (Electrical, Sprinkler
	ater Supply, Sanitary/Storm Sewer, Unknown, Etc.). This includes, but is not limited to trenching, excavating, and boring.
	Pot Hole / Hand Dig to Positively Find Utility
☐ YES	NO Hole cover protection required? If YES, Describe Method of Protection:
	Spotter/Observer must be used if using mechanized digging equipment within Tolerance Zone (only after potholing)
	Identify location of shut offs for utilities, water, gas, etc. and marked on a copy of the site Live Utility Map. (Attached)
	JHA complete by subcontractor and reviewed by BNB supervision
	Affected crew reviewed locates/radar imaging, and JHA the day of proposed excavation with BNB Supervision.
	All employees involved in excavation have signed attached attendance sheet (See page 2).
Activity	Description
Mitigation	on (How are you not going to hit or cause disruption?):
Phone h	numbers of utilities within 10° of excavating activities:
SECTIO	ON 3
	Start Date/Time: Schedule Completion Date/Time:
	for dig: Depth of dig:
	Locate on site Live Utility Map
Subcont	tractor and Competent Person Assigned to Task:
BNBuild	ers Representative (To be ansite during work):
This Live	e Utility Awareness Work Authorization and associated JHA, Locates, Live Utility Map have been reviewed and authorized by:
	Project Superintendent Date
	Project Manager Date



# DIG PERMIT

Code #	Oper-12A
Rev.	0
Date	Jun-2018

I have reviewed this Live Utility Awareness Work Authorization and understand that I am required to carry out the above-described works in accordance with this document, including the attached Job Hazard Analysis and MOP if within 10' of any live utility.

Authorized Participants: (Attach additional Authorized Participants on separate sheet if necessary)

Print Name	Signature	Company
Print Name	Signature	Company
Print Name	Signature	Company
Print Name	Signature	Company
Print Name	Signature	Сотрапу
Print Name	Signature	Company



# DRONE SURVEYING CHECKLIST

Miss	ion Planning	Pref	ight Inspection
.0	Check Airspace restrictions		Check Airframe
	Check for TFR's		Check batteries for damage
	Check weather forecast		Propellers(bendable,not cracked)
	Obtain authority to fly over site		Motor area (clear?)
	Obtain BNB Drone Permit		Camera & Gimbal (cleaned & free)
	Check system for updates	П	Controller (antenna extended)
	Create flight path		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	Save flight path offline		
		Fligh	t Prep
Pack	ting Checklist	U	Power on controller & aircraft
	Aircraft		Ensure SD card has enough space
	Flight batteries (charged)	ū	Check overall status (green Bar DJI App
	Controller (charged)	i ii	Select autopilot mission (map Pilot App)
	Tablet (charged)	ū	Ensure altitude is right for terrain
	Memory cards	0	Upload mission and press start
	Propellers		and the second second
	Tablet cables		Z4.45
	Operation checklists	Atter	Flight
Site	Prep	u	Power down & stow all equipment
.0	Check site for obstructions (trees, power lines, elevation change)	0	Log flight information in flight logs Download data
0	Check weather for suitability (wind speed, temperature, visibility)		
D	Verify Line of Sight(LOS) can be achieved		
D	Brief Forward Observer, maintain comms & eye communication		
	Set ground control points		
EX	Survey around control points as pended		



## **Dropped Object Prevention Evaluation**

Complete this evaluation to ensure overhead work is safely conducted. Immediate concerns should be addressed on the spot and documented. For jobs under construction, but not yet above-grade, review this evaluation with the project team to plan ahead and eliminate risk from falling materials.

Date of Evaluation:	
Project Name:	
Name of Evaluator:	

Critical Items	Yes, No, N/A
Is overhead protection free of gaps to prevent falling objects?	
Are Controlled Access Zones (CAZs) established below overhead work?	
Are tools tethered when working at height near the exterior/leading edge of a structure, shaft stairway?	
Do personnel working at leading edges only have the required tools in their tool belts, bags etc?	
Are persons authorized to work in CAZs (i.e., dismantling a scaffold or concrete deck form) paying attention to what is going on above them and using spotters when needed?  Are materials hoisted overactive work areas controlled? (i.e., loose pieces of material are secured, the	
workforce is warned via horn/whistle and they pay attention to the warning, operators avoid flying loads over personnel, etc).	
Do rigging/tag lines clear obstructions before operators are instructed to "take it away"?	
Do ground-floor entrances in and out of buildings or setbacks have adequate overhead protection?	
Are CAZs maintained with physical barriers and signage that identify who is controlling/restricting the area?	
If danger tape is used for a CAZ, is it only put up while the area is restricted and then taken down when the risk is removed? Is a spotter used to enforce CAZ when danger tape barricade system is not being used?	
Is good housekeeping in effect to prevent loose materials within 8 feet of open edges? Perimeter deck landings kept clear at all times?	
Non-Critical Items	Yes, No, N/A
Are trades scheduling work to prevent working over one another?	
During weekly toolbox meetings, is dropped object prevention addressed?	
Are all employees on crew trained in	
Are JHAs for subcontractors reviewed to ensure provisions for dropped-object protection?	
Do PTPs address overhead protection/dropped object prevention? Is BNB staff reviewing these PTPs?	

Comments:			
<del></del>			



# **Equipment Use Agreement and Indemnification**

Project Name ("Project")	
Date:	
Company:	

WHEREAS, the Parties to this Equipment and Use Agreement and Indemnification ("Agreement") hereby acknowledge that BNBuilders, Inc. ("BNB"), as General Contractor, will have, located on the Project site, various types of equipment to be used for the construction of the Project referenced above, including without limitation, tools, temporary structures, special cranes, hoists, forklifts, and lifts (together with any and all accessories, attachments, or similar items connected thereto, the "Equipment").

WHEREAS, the Parties to this Agreement hereby acknowledge that the Company stated above will, on occasion, use the Equipment provided by BNB. This Agreement supplements/supersedes any existing agreement between the parties with regard to Company's use of the Equipment.

#### IT IS AGREED AS FOLLOWS:

#### Article 1 - Approval

- 1.1 Use of the Equipment will be permitted only with the specific and written prior approval of BNB's Project Superintendent.
- 1.2 If written approval is granted. Company agrees not to loan, assign, or allow any third-party to use any Equipment without the specific and written approval of BNB's Project Superintendent. In such instances, any such third-party shall release, defend, and indemnify BNB to the same extent and for the same duration as Company is required to release, defend, and indemnify BNB under the terms of this Agreement.
- BNB reserves the right to remove any operator from the Equipment or take possession of the Equipment at any time and at its sole discretion.
- 1.4 BNB reserves the right to terminate this Agreement at any time and at its sole discretion.

#### Article 2 - Inspection

- 2.1 Upon signing this Agreement or using any Equipment, Company agrees to complete a full inspection of the Equipment by a qualified individual or individuals and will promptly report any problems or defects that it knows or reasonably should have known to BNB's Project Superintendent. Said report shall be in writing and signed by an authorized representative of Company.
- 2.2 At the moment Company, through any of its agents or employees, begins using any of the Equipment, it agrees that it has satisfied itself to the condition of the Equipment, accepts the Equipment "as is", and waives any and all rights to any claims or causes of action whatsoever as they may relate to defects or deficiencies with the Equipment.

#### Article 3 - Operation

3.1 Company shall: (i) use the Equipment solely in the conduct of its independent business activities; (ii) use and preserve the Equipment in a careful, proper, and lawful manner; (iii) at its own expense, keep the Equipment in good repair, condition, and working order; and (iv) not make any alterations to the Equipment.

- 3.2 Company agrees that the use of the Equipment will only be done by individuals that are employees of Company, have been trained in the use and operation of the particular piece of Equipment, and have been authorized to use the Equipment by BNB's Project Superintendent.
- 3.3 Company, through its agents and employees, agrees to abide by all of the safety rules, requirements, and instructions related to the Equipment being used.

#### Article 4 - Damage or Repairs

- 4.1 Company accepts responsibility for any damages or repair costs caused by the Company, its agents, employees, suppliers, or sub-company. Company shall bear the entire risk of loss, theft, damage or destruction of the Equipment from any cause whatsoever (a "Casualty Loss"), whether intentional or unintentional, during the term of this Agreement. In the event of a Casualty Loss, Company shall immediately notify BNB, and, at BNB's option: (i) repair or replace the Equipment with identical property in good condition with clear title thereto in BNB, at Company's sole expense; or (ii) pay to BNB the full value of the Equipment.
- 4.2 If damage to the Equipment or reconditioning costs are required for the Equipment and it is difficult to ascertain or assign to any specific user the cause of such Casualty Loss, then Company agrees to pay its pro-rata share of repair/reconditioning costs with any other users of the Equipment. The amount of the pro-rata share will be determined by BNB.

#### Article 5 - Waiver / Limitation of Liability

- 5.1 Company acknowledges that the Equipment subject to the terms of this Agreement is being provided at the Project site by BNB for the convenience of the Company. Company is not obligated in any way to use said Equipment. As such, Company agrees to waive any and all claims or causes of action whatsoever against the Owner or BNB that relate in any way to Company's use of Builder's' equipment.
- 5.2 In no event shall BNB be liable or responsible to Company or any other party for: (i) any loss, damage, or injury caused by, resulting from or in any way connected with the Equipment, its operation or its use, or (ii) any incidental, consequential, punitive, or special damages. Company acknowledges and assumes all risks inherent in the operation, use and possession of the Equipment from the time the Equipment is delivered to Company until the Equipment is returned to BNB and will take all necessary precautions to protect all persons and property from injury or damage from the Equipment.

#### Article 6 - Indemnification

- Washington State (the following provision shall apply in the State of Washington): To the fullest extent permitted by law, Company shall release, defend, indemnify and hold harmless the Owner, its agents and employees, and BNB, its agents and employees, from, for, and against all claims, damages, losses, actions proceedings, taxes, penalties, injuries, deaths, liabilities, and expenses, direct or indirect (including but not limited to costs and attorney's fees incurred on such claims, whether or not suit is initiated, and in proving the right to indemnification) ("Loss"), arising out of or resulting from Company, its agents and employees and anyone directly or indirectly employed by them, using and/or operating and/or accessing in any way the Equipment. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist. For the purposes of the foregoing indemnification provision only and to the fullest extent allowed by applicable law, Borrower specifically waives immunity it may be granted under the Washington State Industrial Insurance Act, RCW Ch. 51.04 or other employee benefit acts. This indemnity shall survive the expiration, termination, or cancellation of this Agreement.
- 6.2 Washington State (the following provision shall apply in the State of Washington): To the extent a court of competent jurisdiction determines this indemnity provision is subject to RCW 4.24.130, then Company's obligation to defend and indemnify BNB shall be limited as follows: with regard to the indemnity and defense obligations under Section 6.1 arise out of bodily injury to persons or damage to property, such indemnity and defense obligations shall arise regardless of whether such Loss is caused in part by the concurrent or partial negligence of BNB; however, Company shall not be liable to BNB for that portion of any such Loss for bodily injury to persons or damage to property incurred by BNB to the extent of BNB's negligence.
- 6.3 California State (the following provision shall apply in the State of California): To the fullest extent permitted by law, Company shall release, defend, indemnify and hold harmless the Owner, its agents and employees, and BNB, its agents and employees (collectively, the "Indemnified Parties"), from, for, and against all claims, damages, losses, actions proceedings, taxes, penalties, injuries, deaths, liabilities, and expenses, direct or indirect (including but not

limited to costs and attorney's fees incurred on such claims, whether or not suit is initiated, and in proving the right to indemnification) ("Loss"), arising out of or resulting from Company, its agents and employees and anyone directly or indirectly employed by them, using and/or operating and/or accessing in any way BNB's Equipment. Such obligation shall arise regardless of whether such claim, damage, loss, or expense is caused in part by the concurrent or partial negligence of an Indemnified Party; provided, however, to the extent required by Civil Code section 2782.05, Company's obligations hereunder shall not apply to the extent the Loss arises out of, pertains to, or relates to the active negligence or willful misconduct of an Indemnified Party. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist. The defense and indemnity shall survive the expiration, termination, or cancellation of this Agreement.

#### Article 7 - Miscellaneous

- 7.1 Assignment. Without BNB's prior written consent, Company shall not: (i) assign, encumber, or in any way dispose of any interest in this Agreement or the Equipment, or (ii) allow the Equipment to be used by anyone other than agents or employees of Company in accordance with the terms of this Agreement.
- 7.2 Ownership: The Equipment is, and shall remain, personal property, owned by BNB, and Company has no rights in the Equipment except as set forth herein.
- 7.3 Use in Independent Activities. Nothing in this Agreement shall be construed to provide for retention by BNB of any right to control, direct, supervise, or otherwise oversee the manner or method by which Company is utilizing the Equipment in its independent business activities or responsibility for the means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the work and services provided by Company.
- 7.4 Entire Agreement. This Agreement (i) represents the entire agreement between Company and BNB with respect to the subject matter covered, (ii) supersedes any prior understandings with respect to that subject matter and (iii) may only be amended in a writing duly executed by both Company and BNB.

Company:	BNBuilders, Inc.
By:	By:
Name:	Name:
Title:	Title:
Date:	Date:



Date Plan Prepared:

BNB Project Name:

**BNB Project Address:** 

**Employer Company Name:** 

# Site-Specific Fall Protection Work Plan Template

- Fall protection plans shall be prepared by a qualified person and developed specifically for the site where
  the construction work is being performed.
- 2. The plan must be maintained up to date and any changes shall be approved by a qualified person.
- 3. A current copy of the fall protection plan shall be maintained at the job site,
- 4. The implementation of the fall protection plan shall be under the supervision of a competent person.
- In the event of a fall or incident, a member of the BNB (enter site name) Project Team must be immediately notified. This plan must be adjusted as applicable.

Description of Scope of V	Work:						
	-	un u In	al abox				
Role	Name	ntification of Respo	insibilities	Phone #		Signature	Date
Qualified Person	TVBITTE			THORE	_	Signature	Date
Competent Person							
oreman							
OSHA 30 Trained Person							
Other							
Other							
	-	Potential fall ha	zard(s) in	the work are	<b>a</b>		
Description (i.e., roof perin	neters)	Location (i.e, "bu				ht of potential fa	il
		onventional fall pr		ystems to be			
Type of Equipment (i.e., harness)		Manufacturer	Model		Fall hazard to be used for (from above table)		



# Site-Specific Fall Protection Work Plan Template

1. Description of methods for fall protection system(s)...

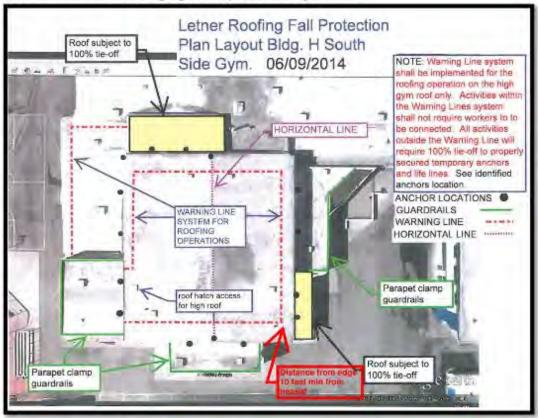
•	Assembly:	
	Disassembly:	
٠	Inspection and maintenance:	
2.	Description of procedures for tools, equipment, materials, etc Handling:	•
٠	Storage:	
÷	Securing:	
3.	Description of methods for overhead protection for personnel a	and the public as applicable:
4.	Other considerations:	
	Rescue Plan and Equipment	
ne a	and name of equipment to be used for rescuing fallen personnel	Location of rescue equipment



# Site-Specific Fall Protection Work Plan Template

Emergency/Incident Contact Information				
Role	Name	Phone #		
<b>Emergency Medical Services</b>				
On-Site CPR & First Aid Provider				
BNB Site Safety Manager				
BNB Superintendent				
BNB Project Manager				

#### Diagram of fall hazards and staging of fall protection systems:



Sample Diagram (Please delete this one and place your diagram here)



Restricted Editing: Password BNB

## FALL PROTECTION TRAINING GUIDE FOR EMPLOYEES

## Safety Belt, Harness and Lanyard Inspection and Maintenance

I ANSI Classification:

Class I Body belts – used to restrain a person from falling. (High Voltage Electrical Only)
Class II Chest harness – used for restraint purposes (NOT for vertical free fall hazards).
Class III Full body harness – used for fall arrest purposes. Can also be used for fall restraint.
Class IV Suspension/position belt – used to suspend or support the worker. If a fall arrest hazard

exists this must be supplemented by use of a safety harness.

#### II. Inspection Guidelines:

To maintain their service life and high performance, all belts and harnesses must be inspected prior to each use for mildew, wear, damage and other deteriorations. Visual inspection before each use is just common sense. Periodic tests by a trained inspector for wear, damage or corrosion should be part of the safety program. Inspect your equipment daily and replace it if any of the defective conditions in this manual are found.

## Belt inspection: High Voltage Electrical ONLY

- Beginning at one end, holding the body side of the belt toward you, grasp the belt with your hands six to eight inches apart. Bend the belt in an inverted "U". The resulting surface tension makes damaged fibers or cuts easier to see.
- Follow this procedure the entire length of the belt or harness. Watch for frayed edges, broken fibers, pulled stitches, cuts, or chemical damage.
- Special attention should be given to the attachment of buckles and Dee Rings to webbing. Note any unusual wear, frayed or cut fibers, or distortion of the buckles or Dees.
- Inspect for frayed or broken strands. Broken webbing strands generally appear as tufts on the webbing surface. Any broken, cut, or burned stitches will be readily seen.
- Rivets should be tight and Immovable with fingers. Body side rivet base and outside rivet burr should be flat against the material. Bent rivets will fail under stress.
  - Especially note condition of Dee Ring rivets and Dee Ring metal wear pads (if any). Discolored, pitted or cracked rivets indicate chemical corrosion.
- The tongue, or billet, of the belt receives heavy wear from repeated buckling and unbuckling.
   Inspect for loose, distorted, or broken grammets. Belts using punched holes without grammets should be checked for torn or elongated holes, causing slippage of the buckle tongue.



## Safety Belt, Harness and Lanyard Inspection and Maintenance cont'd

#### 7. Tongue Buckle:

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

#### Friction Buckle:

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

#### 9. Sliding Bar Buckle:

Inspect buckle frame and sliding bar for cracks, distortions, or sharp edges.

Sliding bar should move freely. Knurled edge will slip if worn smooth. Pay special attention to corners and ends of sliding bar.

## Lanyard inspection:

When inspecting lanyards, begin at one end and work to the opposite end. Slowly rotate the lanyard so that the entire circumference is checked. Spliced ends require particular attention. Hardware should be examined under procedures also detailed below, i.e., Snaps, Dee Ring, and Thimbles.

#### 1. Steel

While rotating the steel lanyard, watch for cuts, frayed areas, or unusual wearing patterns on the wire. Broken strands will separate from the body of the lanyards.

#### Webbing

While bending webbing over a pipe or mandrel, observe each side of the webbed lanyard. This will reveal any cuts or breaks. Swelling, discolorations, cracks, and charring are obvious signs of chemical or heat damage. Observe closely for any breaks in stitching.

#### 3. Rope

Rotation of the rope lanyard while inspecting from end to end will bring to light any fuzzy, worn, broken, or cut fibers. Weakened areas from extreme loads will appear as a



Restricted Editing: Password BNB noticeable change in original diameter. The rope diameter should be uniform throughout, following a short break-in-period.

# **FALL PROTECTION TRAINING GUIDE FOR EMPLOYEES**

## **Fall Protection System Considerations**

Below are guidelines for worker protection where fall arrest or fall restraint systems are used. Some of this material may be suitable for adding to the written fall protection work plan specified in WAC 296-880-10020.

#### Selection and use considerations:

The kind of personal fall arrest system selected should match the particular work situation, and any possible free fall distance should be kept to a minimum. Consideration should be given to the particular work environment. For example, the presence of acids, dirt, moisture, oil, grease, etc., and their effect on the system, should be evaluated. Hot or cold environments may also have an adverse affect on the system. Wire rope should not be used where an electrical hazard is anticipated. As required by the Unified Safety Standards for Fall Protection WAC 296-880, the employer must plan to have means available to promptly rescue an employee should a fall occur, since the suspended employee may not be able to reach a work level independently.

Where lanyards, connectors, and lifelines are subject to damage by work operations such as welding, chemical cleaning, and sandblasting, the component should be protected, or other securing systems should be used. The employer should fully evaluate the work conditions and environment (including seasonal weather changes) before selecting the appropriate personal fall protection system. Once in use, the system's effectiveness should be monitored. In some cases, a program for cleaning and maintenance of the system may be necessary.

#### 2 Testing considerations:

Before purchasing or putting into use a personal fall arrest system, an employer should obtain from the supplier information about the system based on its performance during testing so that the employer can know if the system meets this standard. Testing should be done using recognized test methods. WAC 296-880-510 Appendix C; contains test methods recognized for evaluating the performance of fall arrest systems. Not all systems may need to be individually tested; the performance of some systems may be based on data and calculations derived from testing of similar systems, provided that enough information is available to demonstrate similarity of function and design.

#### 3. Component compatibility considerations:

Ideally, a personal fall arrest system is designed, tested, and supplied as a complete system. However, it is common practice for lanyards, connectors, lifelines, deceleration devices, and body harnesses to be interchanged since some components wear out before others. The employer and employee should realize that not all components are interchangeable. For instance, a lanyard should not be connected between a body harness and a deceleration device of the self-retracting type since this can result in additional free fall for which the system was not designed. Any substitution or change to a personal fall arrest system should



Restricted Editing: Password BNB

be fully evaluated or tested by a competent person to determine that it meets the standard, before the modified system is put in use.

# **FALL PROTECTION TRAINING GUIDE FOR EMPLOYEES**

## Fall Protection System Considerations cont'd

#### Employee training considerations;

Thorough employee training in the selection and use of personal fall arrest systems is imperative. As stated in the standard, before the equipment is used, employees must be trained in the recognition of hazards related to a fall and the procedures to minimize those hazards along with the safe use of the system. This should include the following: Application limits; proper anchoring and tie-off techniques; estimation of free fall distance, including determination of deceleration distance, and total fall distance to prevent striking a lower level; methods of use; and inspection and storage of the system. Careless or improper use of the equipment can result in serious injury or death. Employers and employees should become familiar with this material, as well as manufacturer's recommendations, before a system is used. Of uppermost importance is the reduction in strength caused by certain tie-offs (such as using knots, tying around sharp edges, etc.) and maximum permitted free fall distance. Also, to be stressed are the importance of inspections prior to use, the limitations of the equipment, and unique conditions at the worksite which may be important in determining the type of system to use.

#### 5 Instruction considerations:

Employers should obtain comprehensive instructions from the supplier as to the system's proper use and application, including, where applicable:

- The force measured during the sample force test;
- b. The maximum elongation measured for lanyards during the force test;
- c. The deceleration distance measured for deceleration devices during the force test;
- d. Caution statements on critical use limitations;
- e. Application limits;
- Proper hook-up, anchoring and tie-off techniques, including the proper dee-ring or other attachment point to use on the body harness for fall arrest;
- g. Proper climbing techniques;
- Methods of inspection, use, cleaning, and storage; and
- Specific lifelines that may be used. This information should be provided to employees during training.

#### 6 inspection considerations:

Personal fall arrest systems must be regularly inspected. Any component with any significant defect, such as cuts, tears, abrasions, mold, or undue stretching; alterations or additions which might affect its efficiency; damage due to deterioration; contact with fire, acids, or other corrosives; distorted hooks or faulty hook springs; tongues unfitted to the shoulder of buckles; loose or damaged mountings; nonfunctioning parts; or wearing or internal deterioration in the ropes must be withdrawn from service immediately, and should be tagged or marked as unusable, or destroyed.



## Fall Protection System Considerations cont'd

#### 7 Rescue considerations:

When personal fall arrest systems are used, the employer must assure that employees can be promptly rescued or can rescue themselves should a fall occur. The availability of rescue personnel, ladders or other rescue equipment should be evaluated. In some situations, equipment that allows employees to rescue themselves after the fall has been arrested may be desirable, such as devices that have descent capability.

#### 8. Tie-off considerations:

- a. One of the most important aspects of personal fall protection systems is fully planning the system before it is put into use. Probably the most overlooked component is planning for suitable anchorage points. Such planning should ideally be done before the structure or building is constructed so that anchorage points can be incorporated during construction for use later for window cleaning or other building maintenance. If properly planned, these anchorage points may be used during construction, as well as afterwards.
- b. Employers and employees should at all times be aware that the strength of a personal fall arrest system is based on its being attached to an anchoring system which does not significantly reduce the strength of the system (such as a properly dimensioned eye-bolt/snap-hook anchorage). Therefore, if a means of attachment is used that will reduce the strength of the system, that component should be replaced by a stronger one, but one that will also maintain the appropriate maximum arrest force characteristics.
- c. Tie-off using a knot in a rope lanyard or lifeline (at any location) can reduce the lifeline or lanyard strength by 50 percent or more. Therefore, a stronger lanyard or lifeline should be used to compensate for the weakening effect of the knot, or the lanyard length should be reduced (or the tie-off location raised) to minimize free fall distance, or the lanyard or lifeline should be replaced by one which has an appropriately incorporated connector to eliminate the need for a knot.
- d. Tie-off of a rope lanyard or lifeline around an "H" or "I" beam or similar support can reduce its strength as much as 70 percent due to the cutting action of the beam edges. Therefore, wire core leading edge lifeline should be used around the beam; or the lanyard or lifeline should be protected from the edge with leading edge softeners; or free fall distance should be greatly minimized.



## Fall Protection System Considerations cont'd

- e. Tie-off where the line passes over or around rough or sharp surfaces reduces strength drastically. Such a tie-off should be avoided or an alternative tie-off rigging should be used. Such alternatives may include use of a snap-hook/dee-ring connection, wire rope tie-off, an effective padding of the surfaces, or an abrasion-resistance strap around or over the problem surface. Consider the leading edge lifelines for these applications.
- f. Horizontal lifelines may, depending on their geometry and angle of sag, be subjected to greater loads than the impact load imposed by an attached component. When the angle of horizontal lifeline sag is less than 30 degrees, the impact force imparted to the lifeline by an attached lanyard is greatly amplified. For example, with a sag angle of 15 degrees, the force amplification is about 2:1 and at 5 degrees sag, it is about 6:1. Depending on the angle of sag, and the line's elasticity, the strength of the horizontal lifeline and the anchorages to which it is attached should be increased a number of times over that of the lanyard. Extreme care should be taken in considering a horizontal lifeline for multiple tie-offs. The reason for this is that in multiple tie-offs to a horizontal lifeline, if one employee falls, the movement of the falling employee and the horizontal lifeline during arrest of the fall may cause other employees to also fall. Horizontal lifeline and anchorage strength should be increased for each additional employee to be tied-off. For these and other reasons, the design of systems using horizontal lifelines must only be done by qualified persons. Testing of installed lifelines and anchors prior to use is recommended.
- g. The strength of an eye-bolt is rated along the axis of the bolt and its strength is greatly reduced if the force is applied at an angle to this axis (in the direction of shear). Also, care should be exercised in selecting the proper diameter of the eye to avoid accidental disengagement of snap-hooks not designed to be compatible for the connection.
- b. Due to the significant reduction in the strength of the lifeline/lanyard (in some cases, as much as a 70 percent reduction), the sliding hitch knot should not be used for lifeline/lanyard connections except in emergency situations where no other available system is practical. The "one-and-one" sliding hitch knot should never be used because it is unreliable in stopping a fall. The "two-and-two," or "three-and-three" knot (preferable), may be used in emergency situations; however, care should be taken to limit free fall distance to a minimum because of reduced lifeline/lanyard strength.

#### Vertical lifeline considerations.

As required by the standard, each employee must have a separate lifeline when the lifeline is vertical. The reason for this is that in multiple tie-offs to a single lifeline, if one employee falls, the movement of the lifeline during the arrest of the fall may pull other employees' lanyards, causing them to fall as well.



## Fall Protection System Considerations cont'd

#### 10. Snap-hook considerations:

- a. Required by this standard for all connections, locking snap-hooks incorporate a positive locking mechanism in addition to the spring loaded keeper, which will not allow the keeper to open under moderate pressure without someone first releasing the mechanism. Such a feature, properly designed, effectively prevents roll-out from occurring.
- b. The following connections must be avoided (unless properly designed locking snap-hooks are used) because they are conditions which can result in roll-out when a nonlocking snap-hook is used:
  - Direct connection of a snap-hook to a horizontal lifeline.
  - Two (or more) snap-hooks connected to one dee-ring.
  - Two snap-hooks connected to each other.
  - A snap-hook connected back on its integral lanyard.
  - A snap-hook connected to a webbing loop or webbing lanyard.
     Improper dimensions of the dee-ring, rebar, or other connection point in relation to the snap-hook dimensions which would allow the snap-hook keeper to be depressed by a turning motion of the snap-hook.

#### 11 Free fall considerations:

The employer and employee should at all times be aware that a system's maximum arresting force is evaluated under normal use conditions established by the manufacturer, and in no case using a free fall distance in excess of 6 feet (1.8 m). A few extra feet of free fall can significantly increase the arresting force on the employee, possibly to the point of causing injury. Because of this, the free fall distance should be kept at a minimum, and, as required by the standard, in no case greater than 6 feet (1.8 m). To help assure this, the tie-off attachment point to the lifeline or anchor should be located at or above the connection point of the fall arrest equipment to harness. (Since otherwise additional free fall distance is added to the length of the connecting means (i.e., lanyard).) Attaching to the working surface will often result in a free fall greater than 6 feet (1.8 m). For instance, if a 6-foot (1.8 m) lanyard is used, the total free fall distance will be the distance from the working level to the body harness attachment point plus the 6 feet (1.8 m) of lanyard length. Another important consideration is that the arresting force that the fall system must withstand also goes up with greater distances of free fall, possibly exceeding the strength of the system.



### FALL PROTECTION TRAINING GUIDE FOR EMPLOYEES

### Fall Protection System Considerations cont'd

### Elongation and deceleration distance considerations.

Other factors involved in a proper tie-off are elongation and deceleration distance. During the arresting of a fall, a lanyard will experience a length of stretching or elongation, whereas activation of a deceleration device will result in a certain stopping distance. These distances should be available with the lanyard or device's instructions and must be added to the free fall distance to arrive at the total fall distance before an employee is fully stopped. The additional stopping distance may be very significant if the lanyard or deceleration device is attached near or at the end of a long lifeline, which may itself add considerable distance due to its own elongation. As required by the standard, sufficient distance to allow for all of these factors must also be maintained between the employee and obstructions below, to prevent an injury due to impact before the system fully arrests the fall. In addition, a minimum of 12 feet (3.7 m) of lifeline should be allowed below the securing point of a rope grab type deceleration device, and the end terminated to prevent the device from sliding off the lifeline. Alternatively, the lifeline should extend to the ground or the next working level below. These measures are suggested to prevent the worker from inadvertently moving past the end of the lifeline and having the rope grab become disengaged from the lifeline.

### Obstruction considerations:

The location of the tie-off should also consider the hazard of obstructions in the potential fall path of the employee. Tie-offs that minimize the possibilities of exaggerated swinging should be considered.

### 14. Other considerations:

Because of the design of some personal fall arrest systems, additional considerations may be required for proper tie-off. For example, heavy deceleration devices of the self-retracting type should be secured overhead in order to avoid the weight of the device having to be supported by the employee. Also, if self-retracting equipment is connected to a horizontal lifeline, the sag in the lifeline should be minimized to prevent the device from sliding down the lifeline to a position that creates a swing hazard during fall arrest. In all cases, manufacturer's instructions should be followed.



4

5

Outriggers

Brakes, Parking Brake\*\*

Forklift Pre-Use Inspection BN Builders, Inc. Archive Document - DO NOT DISCARD Equipment Model: Number: Hour Meter: Company: DATE: Initials of person performing inspection: Has the operator been instructed in Y/N V/N YIN Y/N Y/N Y/N Y/N the safe operation of this type of lift. and are they certified? Inspection Item & P/F P/F P/F P/F P/F P/F P/F Description (Pass / Fail) PRESTART Fork Assembly Structure 1 Mast/Boom 2 Hydraulic Lines\*\* 3 Wheels/Tires\*\* 4 5 Axles/Under Carriage 6 Placards (legible) Roll Cage - Structural 8 Operator's Manual Engine Compartment 9 10 All Fluid Levels 11 Belts 12 Winng Leaks/Hoses\*\* 13 START-UP Seat Belt\*\* 1 2 All Gauges Warning Signs/Placards 3 4 Steering (loose)\*\* 5 Levers/Switches Lights/Backup Alarmi\*\* 6 Hom\*\* **FUNCTION CHECK** Lift up/down\*\* 1 2 Telescope in/out\*\* 3 Tilt in/out \*\*

## WARNING

### **HOT WORK IN PROGRESS** WATCH FOR FIRE!

### IN CASE OF EMERGENCY CALL 911 INSTRUCTIONS:

Permit is not valid until signed by authorized BNB Supervisor Complete form and return to BNB for signature Hot Work Supervisor must verify precautions on check list Approved Permit must be visibly posted in vicinity of hot work

Work area was monitored for	30 min 60 min 120 min	Date AM/PM
	Required Fire Watch Duration After Hot Work	it Expires
		Signature
FW Supplied with proper fire		BNB Supervisor
FW Trained in use of extingu	n permit are maintained	
FW will be provided during a	for as long as permit is valid and the conditions stated	for as long as
FIRE WATCH/HOT WORK AREA	have reviewed this Permit request and authorize the work to proceed	I have reviewed this Pr
Are respirators or ventilation		
Containers purged of flamak		Signature
Enclosed equipment cleared		Hot Work Supervisor
WORK ON ENCLOSED EQUIPME	to prevent fire	
Combustibles on other side	indicated on the Hot Work Permit have been taken	indicated on
Construction is noncombust	I verify that I have examined the above location and ensured all the precautions	I verify that I have examine
WORK ON WALL OR CEILINGS		
Fire-resistive tarps suspende		Work Description:
All wall, floor, conduits and		Location (bldg/flr):
Protect combustibles with F		Project:
Remove all combustible mat		Date:
Combustible floors wet dow		Company:
Floors swept slean. Trash p	7	Employee:
Explosive atmosphere in are		Hot Work Done By:

30 min

120 min

Fire Watch Signof 60 min



## HOT WORK PERMIT

Code: Oper-20A

Rev. 1 Date; Jun -19

# BEFORE INITIATING HOT WORK, CAN HOT WORK BE AVOIDED?

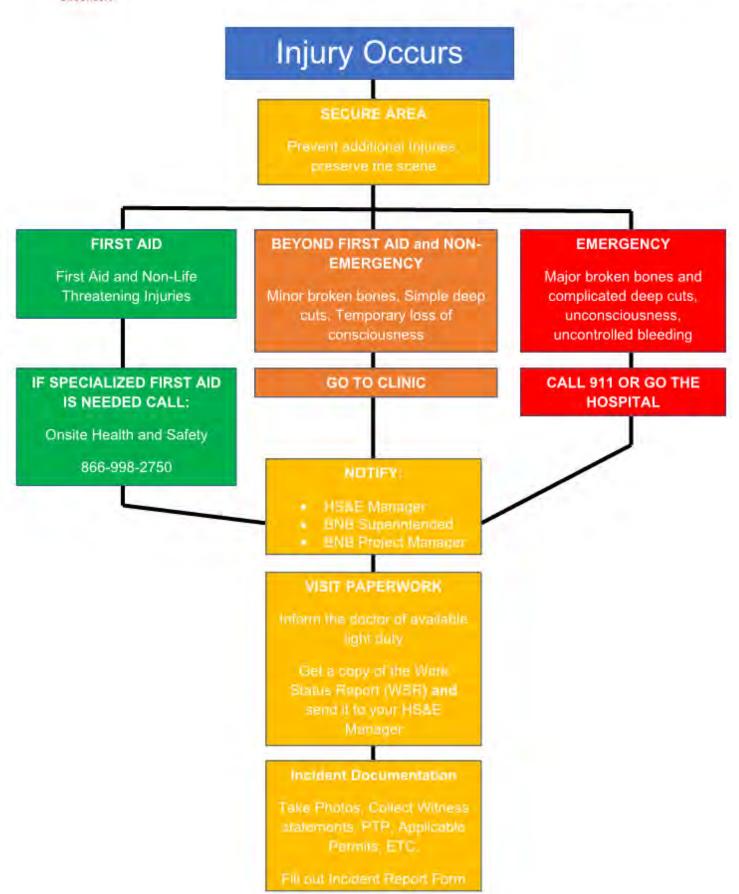
or producing heat and/or sparks. This includes, but is not limited to: Brazing, Cutting, Grinding, This Hot Work Permit is required for any operation involving open flames Soldering, Thawing Pipe, Torch Applied Roofing & Welding.ss

BHBullders .		CIDE	UT DE	000	-			Cod: INC	-01B
	II	ICIDE	NT RE	POR				Rev. 1	5ep-1
NCIDENT INFORMA	ATION	-	X - 1				1		
OATE 6/16/2020	TIME		AM	PM	What wa	the amp	loyee doing just		
	1 1 - 4	V		-	and the second second	ne incider			
PROJECT	SUPERINT	ENDENT			Where di	t the iori	dent occur?		
Annual Control	The second				eroeic a	a tric total	Jent Jean J		
NCIDENT TYPE	Non-Recordable	Near	Miss	Pro	perty Dama	ige	Onsite First aid	Worker's	comp
Submit PTP and photos	DSHA Recordable	Medical 1	reatment	М	odified Wor	k	Lost time	# Days:	
iny Emergency Services cal	led? If yes, who (EMS.			Wasa	past incide	nt drug &	alcohol test performed?		
folice, etc.)?	P INVOLVED IN	INCIDE	17						
PERSON INJURED C	IN INVOLVED IN	INCIDE	V I		_				
lame			Employer	r			Supervisor Name		
			Time wor	tine on			Years of		
itle			project	IST (E)			experience		
	accepts.	_					Approx. cost of		
amaged property (If ap	plicable)						damages		
SPECIFIC PART(S) O	F BODY INJUREI	D (includ	le locatio	_		r, etc.)			
	F BODY INJUREI	D (includ	le locatio	on- rig N/A		r, etc.)			
YPE OF INJURY	n - 0 - 6	D (includ	le locatio	N/A		r, etc.)	Amputation		
YPE OF INJURY	Fra		le locatio	N/A Con		r, etc.)			
YPE OF INJURY aceration ye injury	Fra St	cture rain	le locatio	N/A Con	tusion	r, etc.)	Amputation		
YPE OF INJURY aceration ye injury	Fra St	cture rain apply	le location	N/A Con B	tusion		Amputation	ganization	Yes/N
YPE OF INJURY aceration ye injury MMEDIATE CAUSE Unsafe Acts	Fra St S Check all that Check	cture rain apply Unsi		N/A Con B	itusion urns	Rel	Amputation Other		100
YPE OF INJURY accration ye injury MMEDIATE CAUSE Unsafe Acts ty-passing safety devices trug or alcohol use	Fra St S Check all that Check	cture raiñ apply Unsi Congester Defective	ofe conditi I work area tools/equi	N/A Con B	itusion urns	Reli Was the	Amputation Other  oted to Supervision / Or Employee performing a	n scheduled	N/A
YPE OF INJURY accration ye injury MMEDIATE CAUSE Unsafe Acts by-passing safety devices trug or alcohol use access equipment speed	Fra St S Check all that Check	cture rain  opply  Unse  Congester  Defective  Excessive	afe conditi I work area tools/equi noise	N/A Con B lons a pment	itusion urns	Rel Was the task? Was a P	Amputation Other oted to Supervision / One Employee performing a	n scheduled sk?	Yes/N N/A
YPE OF INJURY accration ye injury MMEDIATE CAUSE Unsafe Acts by-passing safety devices frug or alcohol use access equipment speed ailure to warn or secure	Fra St S Check all that Check	cture rain  opply  Unse Congester Defective Excessive Fire/explo	afe conditi I work area tools/equi noise ision hazar	N/A Con B ons a pment	itusion urns	Reli Was the task? Was a P	Amputation Other  oted to Supervision / One Employee performing a TP completed for this ta-	n scheduled sk? ely account for,	N/A N/A
YPE OF INJURY accration ye injury MMEDIATE CAUSE Unsafe Acts by-passing safety devices frug or alcohol use access equipment speed ailure to warn or secure atigue	Fra St S Check all that Check	cture rain apply Unsi Congester Defective Excessive Fire/explo	afe conditi I work area tools/equi noise ision hazar s substance	N/A Con B ons a pment	itusion urns	Reli Was the task? Was a P If PTP co	Amputation Other  oted to Supervision / One Employee performing a TP completed for this ta- completed, did it accurate miltigation for, the haze	n scheduled sk? ely account for,	N/A
YPE OF INJURY accration ye injury MMEDIATE CAUSE Unsafe Acts by-passing safety devices frug or alcohol use access equipment speed ailure to warn or secure atigue ack of focus	Fra St S Check all that Check	cture rain apply Unsi Congester Defective Excessive Fire/explo	afe conditi I work area tools/equi noise ision hazar s substance storage	N/A Com B ions a pment d es	itusion urns	Reli Was the task? Was a P If PTP co and plai with the	Amputation Other  oted to Supervision / One Employee performing a TP completed for this ta- completed, did it accurate in mitigation for, the haze e task?	n scheduled sk? ely account for, ards associated	N/A N/A
TYPE OF INJURY accration type injury  MMEDIATE CAUSE Unsafe Acts by-passing safety devices frug or alcohol use excess equipment speed aillure to warn or secure atigue ack of focus suards not used	Fra St S Check all that Check	cture rain apply Unsi Congester Defective Excessive Fire/explo Hazardoui Improper Improper	afe conditi I work area tools/equi noise ssion hazar s substance storage tool/equip	N/A Cons B Cons a pment d es	itusion urns	Reli Was the task? Was a P If PTP co and plan with the Was ap)	Amputation Other  ated to Supervision / One Employee performing a TP completed for this ta- completed, did it accurate in initigation for, the haze e task? propriate training provid	n scheduled sk? ely account for, ards associated	N/A N/A
YPE OF INJURY accration ye injury  MMEDIATE CAUSE Unsafe Acts by-passing safety devices brug or alcohol use access equipment speed aillure to warn or secure atigue ack of focus suards not used mproper lifting / loading	Fra St S Check all that Check	cture rain  apply Unsi Congester Defective Excessive Fire/explo Hazardoul Improper Improper Inadequat	afe condition  I work area tools/equi noise sion hazar s substance storage tool/equip te fall prote	N/A  Cons  B  Cons  a  a  pment  d  es  coment  ection	itusion urns	Reli Was the task? Was a P If PTP co and plan with the Was app accomp	Amputation Other  ated to Supervision / One Employee performing a TP completed for this ta- completed, did it accurate in initigation for, the haze e task? propriate training provid lish this task?	in scheduled sk? ely account for, ards associated ed to	N/A N/A
TYPE OF INJURY acceration type injury  MMEDIATE CAUSE  Unsafe Acts By-passing safety devices Drug or alcohol use excess equipment speed ailure to warn or secure atigue ack of focus Suards not used Improper lifting / loading Improper loading	Fra St S Check all that Check	cture rain  apply Unsi Congester Defective Excessive Fire/exploi Hazardoul Improper Improper Inadequat	afe condition  I work area tools/equi noise sion hazar s substance storage tool/equip te fall prote te guarding	N/A  Cons  a  pment  d  es  coment  ection	itusion urns	Reli Was the task? Was a P if PTP co and plai with the Was app accomp Was the	Amputation Other  ated to Supervision / One Employee performing a TP completed for this ta- completed, did it accurate in mitigation for, the haze task? propriate training provid lish this task? ere adequate staffing to	in scheduled sk? ely account for, ards associated ed to	N/A N/A
TYPE OF INJURY acceration ye injury MMEDIATE CAUSE Unsafe Acts By-passing safety devices Orug or alcohol use excess equipment speed ailure to warn or secure atigue ack of focus awards not used improper lifting / loading improper loading improper PPE or PPE not	Fra St S Check all that Check	cture rain  apply Unsi Congester Defective Excessive Fire/explo Hazardoul Improper Improper Inadequat Inadequat	afe condition  I work area  tools/equinoise  ssion hazer  s substance  storage  tool/equip  te fall prote  te guarding  te ventilati	N/A  Cons  a  pment  d  es  coment  ection	itusion urns	Reli Was the task? Was a P If PTP co and plai with the Was app accomp Was the required	Amputation Other  ated to Supervision / One Employee performing a TP completed for this ta- completed, did it accurate in mitigation for, the haze task? propriate training provid dish this task? ere adequate staffing to id task(s) or operation?	on scheduled sk? ely account for, ords associated ed to perform the	N/A N/A N/A
TYPE OF INJURY acceration ye injury MMEDIATE CAUSE Unsafe Acts By-passing safety devices Orug or alcohol use excess equipment speed ailure to warn or secure atigue ack of focus awards not used improper lifting / loading improper loading improper loading improper work technique	Fra St S Check all that Check	cture rain  apply Unsi Congester Defective Excessive Fire/explo Hazardoul Improper Improper Inadequat Inadequat Insufficier	ofe condition  I work area  tools/equinoise  ssion hazer  s substance  storage  tool/equip  te fall prote  te guarding  te ventilation	N/A  Con B  ons a pment d es oment ection g on	itusion urns	Relates Apple of the Was a Poly and plain with the Was apple accomp Was the require there the Was a poly accomp was the require.	Amputation Other  oted to Supervision / One Employee performing a TP completed for this ta- completed, did it accurate in mitigation for, the haza is task? propriate training provid lish this task? ere adequate staffing to id task(s) or operation? here adequate policies, o	on scheduled sk?  Ely account for, ords associated ed to perform the prother written.	N/A N/A N/A
TYPE OF INJURY acceration Eve injury IMMEDIATE CAUSE Unsafe Acts By-passing safety devices Orug or alcohol use excess equipment speed failure to warn or secure fatigue Lack of focus Guards not used Improper lifting / loading Improper loading Improper loading Improper work technique Improper wo	Fra St S Check all that Check	cture rain  apply Unsi Congester Defective Excessive Fire/explo Hazardoul Improper Improper Inadequat Inadequat Insufficier	ofe condition I work area tools/equi noise sision hazer s substance storage tool/equip te fall prote te guarding te ventilation t lighting tekeeping/	N/A  Con B  ons a pment d es oment ection g on	itusion urns	Relates Apple of the Was a Poly and plain with the Was apple accomp Was the require there the Was a poly accomp was the require.	Amputation Other  oted to Supervision / One Employee performing a TP completed for this tale completed, did it accurate in mitigation for, the haze task? propriate training provid lish this task? ere adequate staffing to id task(s) or operation? liere adequate policies, o ions for the required task	on scheduled sk?  Ely account for, ords associated ed to perform the prother written.	N/A N/A N/A

Other:			within the past week?							17/4			
TYPE OF INCIDENT Describe	e details												
Struck or Injured by			Striking Ag On	gainst or Stepping Cut, Pu			uncture, Scrape Injury By						
Strain or Injury By			Caught In	or Between Foreign			n body in eye						
Fall or Slip Injury			Burn or Ex Heat/Cold	posure to		Other:	Veh	icl	e incidnt				
POTENTIAL OUTCOME													
SEVERITY		Choose b	etween 1-5	PROBABILITY What is the chance of		e betwee 1-5	:n		(	Calculate P Severity	otential ( / * Probal		ie
How bad could the accident hav	e been?		1	the accident happening again?		4				N	MEDIUM		
								E	NB SAFE	TY AND H		ISK M	ATRIX
<ol> <li>Noticeable: Minor first aid. F</li> </ol>	Property I	loss <\$5K		1. Practically impossit	ble		匚	_		_	ERITY		
								Ц	1	2	3	4	5
2. Serious: Medical treatment. Property loss \$5K-\$50K			2. Very unlikely			≥	5 4	MEDIUM HII		GН		CRITICAL	
3. Very serious: Work restrictions ≤6 weeks. Property Loss \$50K-\$100K		3. Unusual but possible			PROBABILITY	3	row	MEDIUM	HIGH				
4. Critical: Partial disability. Los \$100K-\$1MM	lity. Lost time >6 weeks. Property loss 4. Quite			4. Quite possible			PROB	2		LOW	MEDIUM		HIGH
5. Catastrophic: Total permane loss >\$1MM	ent disabil	lity. Death	. Property	5. Almost certain				1	VERY LOW	VERY LOW	LOW		MEDIUM
PREVENTIVE ACTIONS to pr	revent ti	he incider	nt from occ	urring again									
De	tails			Deadli	ine				Re	esponsible	?		Complete
Prepared by													



"Freedom from Danger"



## Job Hazard Analysis



				WORK ACTIVITY SEQUENCE			DESCRIPTION OF WORK:		ACTIVITY:
* * *	* *	* * 4	M 3 W	POTENTIAL HEALTH & SAFETY HAZARDS					
* * *	* * *	***	 * * *						
				HAZARD CONTROLS	REVIEW FOR LATEST USE:	REVIEWED BY:	SITE SUPERVISOR:	PROJECT:	DATE:





				EMPLOYEE PRINTED NAME
*	STREET CONTRACTOR			TWICE STORY OVE



	B NEAR MISS REPORT		Cod: Inc-1B
SNBuilders	NEAR MISS KI	PORT	Rev. 0 May-18
a slippery surface, et	completed by an employee who wit tc. The completed form should be to ithout injury to person or damage to	irned in to the project supervi	uch as: falling objects from height, slip o sion.
Date/Time:	Project:	Exact location	is
NEAR-MISS DESCRIP	TION	250 25	
Root Causes			
LESSONS LEARNED	to prevent future occurrences		

Title

Reported by

Foreman Termination (Only BN)	Written Warning  Days #  Removal from site  Permanent  Permanent  Termination  (Only BNB employees
Project  Employee signature  Foreman signature  Termination  Days #  Permane  (Only BN)  employee	Removal from site Permanent ire  Termination (Only BNB employees
Employee signature Foreman signature Termination  Removal from site Permane (Only BN) employee	Removal from site Permanent ire  Termination (Only BNB employees
signature  Foreman signature  Termination  Termination	Termination (Only BNB employees
Foreman signature Termination (Only BN)	Termination (Only BNB employees

Distribution of signed copies: Subcontractor: CC to PM for subcontractor

BNB: CC to HR

BNB	DAILY PRE-TASIC PL	AN	Name of Street	AHEA
Company	Project / Job	Date	Rev. 0	Jul-16

	Hazards	Exest?	Hazardo	Exist?
U.S.		165 160		Yes No
Falls			Noise	
From Height			Vibration	
On to hazard			Fire	1 1111
Of objects			Flammables / Combustibles	
(Other)			Ignition Sources	
Electric Shock			(Other)	-1 11 1
Overhead, Buried, H	lidden Lines		Chemicals	
Cords / Leads			Dust	
Power Sources			Fumes / Gases / Vapors	+     + +     +
(Other)			Toxic / Allergenic	
Caught Between			Acid / Caustic	
Swinging / Rotating	Equipment		Explosive / Reactive	
Pinch Points			(Other)	
Materials			Buildings / Systems	
Cave In			Charged systems	
(Other)			Hazardous Energy	
Struck by	,		Stored Energy	
Dropped Objects / L	oads		Hazardous Materials / Chemicals	-1111
Flying Material / Del	oris		Confined Spaces	
Equipment / Traffic			Structural	
Unstable Materials			(Other)	
(Other)			Location	
Walking / Working !	Surfaces		Occupied Space	
Slips / Trips			Public at Risk	
Holes / Uneven Surfaces			Asbestos / Lead	1 1 1
Access / Egress			Mold	
(Other)			Hazardous Waste	
Material Handling			Medical Waste	
Overexertion / Strain	ns		(Other)	
Cuts / Punctures			Weather / Environment	
Storage / Stacking			Heat / Cold	
Mechanical Equipme	ent		Lightning	4 4 4 4
Hoisting			Wind	
Hauling / Road Trans	sport		Visibility	+ +
Floor Loading	****		(Other)	
(Other)			* -	
100	Intridental	1 didfillional function		* *
Head	Hard Hat (Type I, G)	Type II Hat (side impact) /	Class E (electrical)	
Eyes	Glasses (ANSI Z87)		lined (dust) / Welding / Laser	
Body / Arms	Shirt w/ 4" sleeve		ire / Chemical / Arc Flash / Cut resistant	
Knees / Legs	Long Pants	Knee Pads / Chaps / chem		
Hands	Light Duty Gloves		Resistant / Chemical / Welding / Thermal	
Feet	Sturdy Work Boots		Metatarsal / Electrical / Booties	
Face		The state of the same of the state of the st	Face Shield / Welding Mask	
Ear		Plugs / Muffs / Double	Transcomplant at transfer threat	
Breathing		Dust Mask / Filtering Resp	pirator / Supplied Air	
Other		Descring Nest	Meron A publica Un	



### **DAILY PRE-TASK PLAN**

Job / Task Description			
	_		

Basis Joli Steps	Hazards	Controls / Work Practices
Describe major tasks in order.  What will you be doing?  What equipment and tools are needed?	Identify the hazards of each step. What could go wrong? What could cause an accident?	Decide what controls are needed.  What safe work practices must be used for each hazard?  What training is required?
Prepared by:	Crew Member Signatures	Oline / Time:
	Con Memori Signatures	
	<b>-</b>	

BNB	Análisis Previo al T	rabajo	(Creb 9164)
Contratista	Proyecto	Fecha	Rev. 0 Jul-1

	Riesgos		вте?	Riesgos	Ents	nel.
		3	No		9	Mb
Caldas				Ruido		
De altura				Vibracion		
A mismo nivel				Fuego		1
De objetos		1 =		Inflamables / Combustibles		
(Otra opción)			1 1	Fuentes de ignición		1
Chaque Eléctrico	200		11	(Otra opción)		1
Líneas aéreas / ente	erradas		1 1	Quimicos		
Cordones / Cables /	Alambre			Polvo		
Fuentes de energía			T I	Humos/Gases/Vapores		
(Otra opción)				Tóxico / Alergénico		0.0
Atrapamiento entr	e		- 1	Ácido / Cáustico		1 1
Equipo giratorio/ro				Explosivo / Reactivo		
Puntos de atrapami				(Otra opción)		
Materiales			7 7 7 7	Edificios / Sistemas		
Derrumbe				Sistemas cargados		-
(Otra opción)				Energia peligrosa		
Golpeado por				Energía almacenada		1
Caídas de objetos /	Cargas			Materiales peligrosos / Químicos		
Material suelto / Es				Espacios confinados		
Equipo / Tráfico	autitio) op			Estructural		
Material inestable		1	+	(Otra opción)		1
(Otra opción)				Ubicación		
Pasadizos/ Platafor	mas de trabajo			Espacio ocupado		1
Resbalones / Tropie			11 11	Riesgos para el público		
Huecos / Superficie			60.00	Asbesto / Plomo		
Acceso / Salida	- Carrier Contract Co		-	Moho		
(Otra opción)				Residuos peligrosos		
Manejo de materia	lac			Residuos médicos		
Fatiga / Esguince m			1	(Otra opción)		+
Cortes / Pinchazos	6300101			Clima / Ambiente		
Almacenamiento /	Anilado			Calor / Frio		1
Equipo mecánico	пришос			Relámpago/Rayo		+
Levantamiento				Viento		
Transporte/ Transp	orte nor carretera	-		Visibilidad		+
Carga sobre el suelo				(Otra opción)	_	+
(Otra opción)			-	(Otra opcion)	_	+
(ortra opcion)	1865 Ferrando	Entire information	Torus and	i.		
Cabeza	Casco (Tipo I, G)			eral) / Tipo E (protección eléctrica)		
Ojos	Lentes (ANSI Z87)			forrada / Soldadura / Láser		
Cuerpo / brazos	Camisa de mangas 4"			eco / Fuego / Químico / Resistente al corte		
Rodillas / Piernas	Pantalones largos	Rodilleras / Chap				
Manos	Guantes ligeros			ente al corte / Químico / Soldadura / Protecc	ión térmira	-
Pies	Botas de trabajo			acero / Metatarsiano / Eléctrica / Cubiertas		
Cara	pares we ridealo			Protector facial de malla / Máscara soldadur		_
Orejas		Tapones / Orejer			o ·	_
	+				The construction is	el e
Respiración		Máscara de polvo / Respirador purificador de aire / Respirador de aire suministrado				



### Análisis Previo al Trabajo

Descripción del trabajo / tarea

Pasos de trabajo	Riesgos	Métodos de control
Describa los pasos en orden. Qué va a hacer usted? Qué clase de equipos y herramientas son nécesarias?	Identifica los riesgos de cada paso. Qué podria salir mai? Qué podria causar un accidente?	Cómo protegemos a los trabajadores? Cuáles son las practicas seguras de cada paso? Qué capacitación es necesaria?
Meparado por		Edichis / Harai
	Firma de los trabajadore	s

# Synthetic Web and Roundsling Inspection Form Company: Date:

		Туре	Deviser
		Size	
		Serial #	
		Ŏ.	
		Manufactured By:	I manufacture for
		Scrap	
		Chisurfit dise	
		Abrasion Hole S.	
		Burning	
		tiole/snag/pair	
		Other	
		Comments	



### DAILY SCAFFOLD CHECKLIST

Code #	Oper-27A
Rev	0
Date	October-2017

Company:	Inspected By:	
Location:	Supervisor:	

The following items should be visually checked prior to working from any scaffolding (daily).

1.	is the footing of the scaffolding sound and rigid, capable of supporting the weight. (Bricks or blocks are not acceptable)	Yes	No	N/A
2.	Did a competent person erect, dismantle or move the scaffold?			
3.	Are all the scaffold components the same manufacturer and type?			
4.	is a complete guardrail system in place? i.e. top rail (42"), midrail (22"), and toe boards (2x4 min.).			
5.	Were damaged scaffold components repaired or replaced?			
6	Is the maximum span for 2"x12" planks 8 ft.			
7	Is all planking or platforms overlapped by a minimum of 12", and secured from movement?			
8.	Is there an access ladder, stairs or other safe means of access?			
9.	Do the scaffold planks extend over their end supports 6" but not more than 12"?			
10.	Is there overhead protection provided for people on scaffold exposed to overhead hazards?			
11.	Is fall protection feasible to use when erecting scaffold?			
	Are the poles, legs, or uprights of the scaffold, plumb and rigidly braced to prevent swaying and displacement?			
13.	Is the scaffold properly braced by cross-bracing or diagonal braces, or both, for securing vertical timbers together?			
14.	Where uplift may occur, are vertical members locked together by pins or other equivalent suitable means?	-		
15.	is scaffold level and plumb?			
16.	Are sills properly placed and adequate size?			
17.	Have screw jacks been used to level and plumb scaffold, instead of unstable objects (concrete blocks, bricks, etc.)?			
18.	Are base plates and/or screw jacks secured to sills and frame?			
	s the scaffold securely guyed or tied to a building or structure, when the ht exceeds four times its minimum base dimension?			
20.	Has scaffold been tied to structure at least every 30 feet in length and 26 feet in height?			-
21.	is each work deck fully planked?	= =		
	Is handrail netting or covered walkway installed if workers pass through or under the scaffold?		141	
21,	Have workers on scaffold been trained on scaffold safety?			



### SHAFT WORK ENTRY PERMIT

Code #	Oper-14B
Rev.	D.
Date	Jan-2018
Original Date	Jan-2018

NOTICE: Wark in the Shaft Requires a JHA and Pre-Task Plan to be completed and all Hazards identified must be mitigated before any work begins. Please attach JHA and PTP to permit.

Company Performing Work:			-
Description of Work:			
Supervisor of Crew in Shaft: Trade:	Pho	one Number:	
Complete the below checklist:			
Is the Shaft a Permit Required Confined Space? If yes, please complete a confined space work permit.	Yes	No .	NA .
Tools, materials, and PPE are secured to prevent them from falling down the shaft.			1-
Is each working level with an exposed shaft opening protected by guardrails with installed toe boards, mid-rails and handrails? All Openings on all levels are closed and secured? Is vertical mesh installed at lobby edge to prevent falling materials?			
Lower levels are delineated as necessary with a spotter and radio communication?			
Are other crews or trades working next to the exposed shaft opening on above floors? If yes, please coordinate work with the other crew before beginning. Radio communication must be established between crews.  Comments:			_
is there adequate lighting to complete required task?			_
Is Hot Work being performed? If yes, please complete a Hot Work Permit.		) <del></del> (	1
Is there proper access and egress to work locations?			
Comments;			



### SHAFT WORK ENTRY PERMIT

Code #	Oper-14B
Rev.	0
Date	Jan-2018
Original Date	Jan-2018

### Authorized Participants: (Attach additional Authorized Participants on separate sheet if necessary)

Print Name	Signature	Company
Print Name	Signature	Company

This Shaft Entry Permit and associate JHA and Pre-Task Plans have been reviewed and authorized by:	
BNBuilders Superintendent:	
BNBuilders Project Manager:	_

Examples: Drilling 5/8" dowe) holes with roto-hammer	Prepared by (Work Supervisor);  Describe Task		Plan Plan	
th 8 hours	Duration (Hours)	200	Project:	
Shroud, hollow drill bits, dustless attachment	Reviewed by (BNB Competent Person):  Controls (See reverse side for examples)  Engineering  Administrativ			
Body positioning	Controls (See reverse side for examples) gineening  Administrative		Start Date:	
Respirator APF	Respiratory Protection (Per Table 1)			
Outside	Inside/Outside Building	Date: Nov-2018	Rev. 1	Code #: Oper-31B



Engineering controls	Administrative controls
Exhaust fan	Barricades / Signs
LEV (Local Exhaust Ventilation – HEPA)	Work Scheduling
Wetting	Worker Rotation
Partial enclosure	Body Positioning
Full enclosure	Good Hygiene Practices
Shroud	Employee Training
Barriers	Other:
Sweeping Compound	
Other:	
Respiratory Protection Guide	Housekeeping and Hyglene
APF 10 = Any half mask particulate respirator equipped with an N95, R95, or P95 filter, including filtering facepieces. N99, R99, P99, N100, R100, P100 filters may also be used.	Protective Work Glothing
APF 25 = Any powered, air-purifying respirator with a high-efficiency particulate filter, or Any supplied-air respirator operated in a continuous-flow mode	Handwashing before drinking, eating or smoking
APF 50 = Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter, or Any powered, air-purifying respirator with a tight-fitting facepiece and a highefficiency particulate filter	Proper dust bag handling and disposal
<b>APF 1000</b> = Any supplied-air respirator operated in pressure-demand or positive-pressure mode	Other:



### CONTROLLING SILICA EXPOSURE

**BNBuilders** 

Source: Laborers' Health & Safety Fund of North America, https://www.lhsfna.org/index.cfm/controlling-silica-exposure/lifiber

EQUIPMENT OR TASK	ENGINEERING AND WORK PRACTICE CONTROL METHODS		RESPIRATOR REQUIREMENTS AND MINIMUM ASSIGNED PROTECTION FACTOR (APF) FOR	RESPIRATOR REQUIREMENTS AND MINIMUM ASSIGNED PROTECTION FACTOR (APF) FOR
Stationary masonry saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade.     Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.		No additional protection required	4+ HOURS  No additional protection required
Handheld power saws 'Any blade diameter	Use saw equipped with integrated water delivery system that continuously feeds water to the olade.     Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	Indoors / in an enclosed area: Outdoors:	APF 10 required  No additional protection required	APF 10 required  APF 10 required
Handheld power saws for cutting fiber-cement board *blade diameter of eight (8) inches or less	For tasks performed outdoors only:  Use saw equipped with commercially a collection system:  Operate and maintain tool in accordant manufacturer's instructions to minimize dust emissions.  Dust collector must provide the airflow recommended by the tool manufacture and have a filter with 99% or greater elements.	ce with	No additional protection required	No additional protection required
Walk-behind saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade.  Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	Indoors / in an enclosed area: Outdoors:	APF 10 required  No additional protection required	APF 10 required  No additional protection required
Rig-mounted core saws or drills	Use tool equipped with integrated water system that supplies water to cutting stemperate and maintain tool in accordant manufacturer's instructions to minimize dust emissions.	urface. ice with	No additional protection required	No additional protection required

Source: Laborers' Health & Safety Fund of North America, https://www.lhsfra.org/index.cfm/controlling-silica-exposure/#fiber

EQUIPMENT OR TASK	ENGINEERING AND WORK PRAI CONTROL METHODS	CTICE	RESPIRATOR REQUIREMENTS AND MINIMUM ASSIGNED PROTECTION FACTOR (APF) FOR	RESPIRATOR REQUIREMENTS AND MINIMUM ASSIGNED PROTECTION FACTOR (APF) FOR
Handheld and stand-mounted drills *including impact, rotary hammer drills	Use drill equipped with commercially a shroud or cowling with dust collection:     Operate and maintain tool in accordan manufacturer's instructions to minimize dust emissions.	system. ce with	No additional protection required	No additional protection required
	Dust collector must provide the airflow recommended by the tool manufacture and have a filter with 99% or greater of filter-cleaning mechanism.	er, or greater, ficiency and a	0	0
Jackhammers and handheld powered chipping tools	Use a HEPA-filtered vacuum when clea  Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact.  OR -  Use tool equipped with commercially	indoors / in an enclosed area:	APF 10 required	APF 10 required
	available shroud and dust collection system.  Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	Outdoors:	No additional protection required	APF 10 required
	<ul> <li>Dust collector must provide the airflow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism.</li> </ul>		0	<b>68</b>
Handheld grinders for mortar removal "for tuckpointing, etc.	Use grinder equipped with commercial shroud and dust collection system.     Operate and maintain tool in accordant manufacturer's instructions to minimize dust emissions.	ce with	APF 10 required	AFP 25 required
	Dust collector must provide 25 cubic for (cfm) or greater of airflow per inch of wand have a filter with 99% or greater of cyclonic pre-separator or filter-cleaning.	heel diameter ficiency and a	- B	O
Walk-behind milling machines and floor grinders	<ul> <li>Use machine equipped with integrated visystem that continuously feeds water to the surface.</li> </ul>	vater delivery.	No additional protection required	No additional protection required
	Operate and maintain tool in accordance manufacturer's instructions to minimize of - OR -      Use machine equipped with dust collect recommended by manufacturer.	lust emissions.	0	
	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.		0	0
	<ul> <li>Dust collector must provide airflow recormanufacturer, or greater, and have a filte greater efficiency and a filter-cleaning m</li> </ul>	r with 99% or		
	<ul> <li>When used indoors or in an enclosed an HEPA-filtered vacuum to remove loose of passes.</li> </ul>			

Source: Laborers' Health & Safety Fund of North America, https://www.ihatna.org/index.cfm/controlling-silica-exposure/#fiber

EQUIPMENT OR TASK	ENGINEERING AND WORK PRAC CONTROL METHODS	TICE	RESPIRATOR REQUIREMENTS AND MINIMUM ASSIGNED PROTECTION FACTOR (APF) FOR  0-4 HOURS	RESPIRATOR REQUIREMENTS AND MINIMUM ASSIGNED PROTECTION FACTOR (APF) FOR  4+ HOURS
Handheld grinders for uses	For tasks performed outdoors only:		No additional	No additional
other than mortar removal	Use grinder equipped with integrated was system that continuously feeds water to surface.  Operate and maintain tool in accordance manufacturer's instructions to minimize of the state of	he grinding with	protection required	protection required
	Use grinder equipped with commercially available shroud and dust collection system.  Operate and maintain tool in accordance with manufacturer's	indoors / in an enclosed area:	No additional protection required	APF 10 required
	instructions to minimize dust emissions.     Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism.	Outdoors:	No additional protection required	No additional protection required
Heavy equipment and utility vehicles used to abrade or fracture silica-containing materials (e.g.: hoe-ramming, rock ripping) or used during demolition activities involving silica-containing materials	Operate equipment from within an enck     When employees outside of the cab are     the task, apply water and/or dust supprincessary to minimize dust emissions.	engaged in	No additional protection required	No additional protection required
Heavy equipment and utility vehicles for tasks such as grading and excavating *Does not include: demolishing, abrading, or fracturing silica-containing materials	Apply water and/or dust suppressants a to minimize dust emissions.  OR -  When the equipment operator is the onlinengaged in the task, operate equipment an enclosed cab.	y employee	No additional protection required	No additional protection required

### CONTROLLING SILICA EXPOSURE

**BNBuilders** 

Source: Laborers' Health & Safety Fund of North America, https://www.lhstna.org/index.cfm/controlling-silica-exposure/#fiber

EQUIPMENT OR TASK	ENGINEERING AND WORK PRACTICE CONTROL METHODS	RESPIRATOR REQUIREMENTS AND MINIMUM ASSIGNED PROTECTION FACTOR (APF) FOR  0-4 HOURS	RESPIRATOR REQUIREMENTS AND MINIMUM ASSIGNED PROTECTION FACTOR (APF) FOR
Dowel drilling rigs for concrete	For tasks performed outdoors only:  •Use shroud around drill bit with a dust collection system. Dust collector must have a filter with 99% or greater efficiency and a filter-cleaning mechanism.  •Use a HEPA-filtered vacuum when cleaning holes.	APF 10 required	APF 10 required
Vehicle-mounted drilling rigs for rock and concrete	Use dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector.  OR -  Operate from within an enclosed cab and use water for dust suppression on drill bit.	No additional protection required	No additional protection required
Small drivable milling machines fless than half-lane	Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant.  Operate and maintain machine to minimize dust emissions.	No additional protection required	No additional protection required
Large drivable milling machines *half-lane and larger	For cuts of any depth on asphalt only:  Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust.  Operate and maintain machine to minimize dust emissions.  For cuts of four inches in depth or less on any substrate:  Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust.  Operate and maintain machine to minimize dust emissions.  OR -  Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant.  Operate and maintain machine to minimize dust emissions.	No additional protection required	No additional protection required

### CONTROLLING SILICA EXPOSURE

**BNBuilders** 

Source: Laborera' Health & Safety Fund of North America, https://www.thslna.org/index.cfm/controlling-silica-exposure/#fiber

EQUIPMENT OR TASK	ENGINEERING AND WORK PRACTICE CONTROL METHODS	RESPIRATOR REQUIREMENTS AND MINIMUM ASSIGNED PROTECTION FACTOR (APF) FOR  0-4 HOURS	RESPIRATOR REQUIREMENTS AND MINIMUM ASSIGNED PROTECTION FACTOR (APF) FOR  4+ HOURS
Crushing machines	<ul> <li>Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (e.g., hoppers, conveyors, sieves/ sizing or vibrating components, and discharge points).</li> </ul>	No additional protection required	No additional protection required
2 3 4 6 7	<ul> <li>Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions.</li> </ul>	0	0
	<ul> <li>Use a ventilated booth that provides fresh, climate- controlled air to the operator, or a remote control station.</li> </ul>		
Drivable saws	For tasks performed outdoors only:     Use saw equipped with integrated water delivery system that continuously feeds water to the blade.	No additional protection required	No additional protection required
	<ul> <li>Operate and maintain tool in accordance with inanufacturer's instructions to minimize dust emissions.</li> </ul>	0	0

### BNBuilders Duties of Assigned Personnel

Project Name	Date	
Tower Crane Model	Mobile Crane Model	
	Mobile Crane Serial #	
Tower Crane Serial #	Woolle Craffe Serial #	
Tower Crane A/D Director		
	e read and understood the erection/dismantle procedures specif	ic to this tower
Name	Company	
Title	Company Contact #	
Signature	Date	
olgriature	Date	
Tower Crane Lift Director	Contract of the Contract of th	COLUMN TO THE OWNER.
The state of the s	e read and understood the erection/dismantle procedures specif	ic to this tower
crane	I Accessor I	
Name	Company	
Title	Contact #	
Signature	Date	
Qualified Person providing technical as	ssistance to the Tower Crane A/D Director	
	e read and understood the erection/dismantle procedures specif	ic to this tower
orane.	Te	
Name	Company	
Title	Contact #	
Signature	Date	
Tower Crane Operator		
	e read and understood the operating procedures specific to this	tower crane.
Name	Company	4
Title	Contact #	
Signature	Date	
Mobile Crane A/D Director		
	e read and understood the erection/dismantle procedures specifi	ic to this mobile
crane.		100
Name	Company	
Title	Contact #	
Signature	Date	
Mobile Crane Operator		
	e read and understood the operating procedures specific to this	mobile crane.
Name	Company	
Title	Contact #	
Signature	Date	
BNB Site Supervisor	12	
Name	Company	
Title	Contact #	
Signature	Date	
BNB Alternate Site Supervisor		
Name	Company	
Title	Contact #	
Olegentone	B-10	

BNBuilders <u>Duties of Assigned Personnel</u>

BNB 3 <sup>rd</sup> Party Consultant		
Name	Company	
Title	Contact #	
Signature	Date	

### Duties of Assigned Personnel - Tower Crane Daily Operation

Project Name	Start Date	
Tower Crane Model	Updated	
Tower Crane Serial #		

Company Title Contact #  Signature  Sackup LD's Name Company Title Contact #  Signature  Name Company Contact #  Company Contact #  Company Title Contact #  Company Title Contact #  Company Title Contact #  Company Contact #  Signature  Company Title Contact #  Company Contact #  Company Title Contact #  Company Company Title Contact #  Company Title Contact #  Company Title Contact #  Signature  Company Title Contact #  Signature  Company Title Contact #  Signature  Company Title Contact #  Conta	have been designated to this or	osition and have read and understood the operational	al procedures speci
Name   Company		and the read are arranged in a specialists	an processing appro-
Signature  Backup LD'S Name Company Title Contact #  Signature  Vame Company Title Contact #  Signature  Tower Crane Operator  I have been designated to this position and have read and understood the operating procedures specific to this tower crane,  Name Company Title Contact #  Signature  Signature  Signature  Signature  Signature  Signature  Signature  Company Title Contact #  Signature  Signature  Company Title Contact #  Contact #  Company Title Contact #		Company	
Sackup LD's  Vame Contact #  Signature  Name Company Title Contact #  Signature  Tower Crane Operator I have been designated to this position and have read and understood the operating procedures specific to this tower crane, Name Company Title Contact #  Signature  Signature  Signature  Signature  Company Title Contact #  Signature  Signature  Company Title Signature  Company Contact #  Signature  Company Contact #  Signature  Company Contact #  Signature  Company Contact #  Company Contact #  Signature  Company Contact #  Contact #  Company Contact #  Contact	Title		
Name   Company	Signature		
Name   Company	Backup LD's	Access to the second	
Title   Contact #   Signature   Name   Company   Title   Contact #   Signature    Tower Crane Operator   I have been designated to this position and have read and understood the operating procedures specific to this tower crane,   Name   Company   Title   Contact #   Signature    BNB Site Supervisor   Name   Company   Title   Contact #   Signature    BNB Alternate Site Supervisors   Name   Company   Title   Contact #   Signature    Signature    Signature    Company   Title   Contact #   Signature    Signature    Company   Title   Contact #   Signature    Signature    Company   Title   Contact #   Signature    Company   Title   Contact #   Signature    Company   Title   Contact #   Signature    Name   Company   Title   Contact #   Signature   Company   Title   Contact #   Signature   Company   Title   Contact #   Title   Cont	Name	Company	
Title Signature  Tower Crane Operator I have been designated to this position and have read and understood the operating procedures specific to this tower crane. Name Company Title Contact # Signature  BNB Site Supervisor Name Company Title Contact # Signature  BNB Alternate Site Supervisors Name Company Title Contact # Signature  Company Contact # Signature  Company Contact # Signature  Company Title Contact # Signature  Company Contact #	Title		
Title   Contact #   Signature   Contact #   Tower Crane Operator   I have been designated to this position and have read and understood the operating procedures specific to this tower crane. Name   Company   Title   Contact #   Signature    BNB Site Supervisor   Name   Company   Title   Contact #   Signature    BNB Alternate Site Supervisors   Name   Company   Title   Contact #   Signature    Signature   Company   Title   Contact #   Signature    Signature   Company   Title   Contact #   Signature    Name   Company   Title   Contact #   Signature   Contact #   Signatu	Signature		
Title   Contact #   Signature   Contact #   Tower Crane Operator   I have been designated to this position and have read and understood the operating procedures specific to this tower crane. Name   Company   Title   Contact #   Signature    BNB Site Supervisor   Name   Company   Title   Contact #   Signature    BNB Alternate Site Supervisors   Name   Company   Title   Contact #   Signature    Signature   Company   Title   Contact #   Signature    Signature   Company   Title   Contact #   Signature    Name   Company   Title   Contact #   Signature   Company   Title   Contact #   Signature   Conta	Name	Company	
I have been designated to this position and have read and understood the operating procedures specific to this tower crane.  Name	Title		
Tower Crane Operator  I have been designated to this position and have read and understood the operating procedures specific to this tower crane.  Name  Company  Title  Contact #  Signature   BNB Site Supervisor  Name  Company  Title  Contact #  Signature   BNB Alternate Site Supervisors  Name  Company  Title  Contact #  Signature   BNB Alternate Site Supervisors  Name  Company  Title  Contact #  Signature	Signature	7.1.1.2.2	
Name Company Title Contact #  Signature  BNB Site Supervisor Name Company Title Contact #  Signature  BNB Alternate Site Supervisors Name Company Title Contact #  Signature  Company Title Contact #  Signature  Company Title Contact #  Signature  Name Company Title Contact #	I have been designated to this po	sition and have read and understood the operating	procedures specific
Title Contact #  Signature  BNB Site Supervisor  Name Company  Title Contact #  Signature  BNB Alternate Site Supervisors  Name Company  Title Contact #  Signature  Company  Company  Title Contact #  Signature  Name Company  Contact #			
BNB Site Supervisor Name Company Title Contact # Signature  BNB Alternate Site Supervisors Name Company Title Contact # Signature  Company Company Contact # Signature  Name Company Contact #			A. C.
BNB Site Supervisor  Name	Name		200000000000000000000000000000000000000
Name Company Title Contact # Signature  BNB Alternate Site Supervisors Name Company Title Contact # Signature  Name Company Company Company Company Company Company Company	Name Title		
Name Company Title Contact # Signature  BNB Alternate Site Supervisors Name Company Title Contact # Signature  Name Company Company Company Company Company Company Company	Name Title		
Title Contact #  Signature  BNB Alternate Site Supervisors Name Company Title Contact #  Signature  Name Company Company Company Company Company Company	Name Title Signature		
BNB Alternate Site Supervisors Name Company Title Contact # Signature Name Company Company Company	Name Title Signature BNB Site Supervisor	Contact #	
Name Company Title Contact # Signature Name Company Company	Name Title Signature BNB Site Supervisor Name	Contact #	
Name Company Title Contact # Signature Name Company Company	Name Title Signature BNB Site Supervisor Name Title	Contact #	
Title Contact # Signature Name Company	Name Title Signature BNB Site Supervisor Name Title	Contact #	
Signature Name Company	Name Title Signature BNB Site Supervisor Name Title Signature BNB Alternate Site Supervisors	Company Contact #	
Name Company	Name Fitte Signature BNB Site Supervisor Name Fitte Signature BNB Alternate Site Supervisors Name	Company Contact #	
	Name Title Signature BNB Site Supervisor Name Title Signature BNB Alternate Site Supervisors Name	Company Contact #	
	Name Title Signature  BNB Site Supervisor Name Title Signature  BNB Alternate Site Supervisors Name Title	Company Contact #	
	to this tower crane. Name Title Signature  BNB Site Supervisor Name Title Signature  BNB Alternate Site Supervisors Name Title Signature  Name Title Signature	Company Contact #  Company Company Company Contact #	

### <u>Duties of Assigned Personnel - Multiple Crane Daily Operation</u> Tower Crane & Mobile Crane

Project Name	Start Date	
Tower Crane Model	Updated	
Tower Crane Serial #		

Tower Crane Model	Up	Jaleo
Tower Crane Serial #		
		-
Tower Crane Lift Director	A STATE OF THE PARTY OF THE PAR	The second second
	osition and have read and understood	the operational procedures speci
to this tower crane.		
Name	Company	
Title	Contact #	
Signature		
Backup LD's		-2
Vame.	Company	101
Title	Contact #	
Signature		
Name	Company	11:
Title	Contact #	
Signature		
Tower Crane Operator		
	osition and have read and understood	the operating procedures specific
to this tower crane.		
Name	Company	
Title	Contact #	
Signature	-200-0-0	
Mobile Crane Operator	A CONTRACTOR OF A CONTRACTOR	
have been designated to this pe	osition and have read and understood	the operating procedures specific
to this mobile crane.		
Name	Company	
Title	Contact #	
Signature		
THIR Olle Outsiden		
BNB Site Supervisor	Comment	DAID silders
Title	Company Contact #	BNBuilders 858-775-3291
Figurature	Gontagt #	000-110-0291
STORY OF THE O		

BNB Site Supervisor	Community	T DND sildere
Name	Company	BNBuilders
Title	Contact #	858-775-3291
Signature		7
BNB Alternate Site Supervisors		
Name	Company	
Title	Contact #	
Signature		
Name	Company	
Title	Contact #	E () 11 ===
Signature		-0
BNB Site Safety	- 74	-
Name	Company	
Title	Contact #	
Signature		

## **BNB**uilders

	Tower Crane Pre-Dismantle Checklist	antle Checklist
Project Name	Date	Mobile Crane
		Operator
Erection Date	BNB	Mobile Crane
	Superintendent	Model
Tower Crane	BNB Safety	Mobile Crane
Model		Serial #
Tower Crane	Lift Director	Tower Crane
Serial #		Operator
Jib Length	A/D Director	Tower Crane
		Technician

Check Apply for FAA Obstruction Evaluation / Airport Airspace Analysis (OE/AAA) ( <i>Note:</i> subthe evaluation request at least 45 days prior to any Tower Crane Erection or "Jump" in elevation) https://oeasa.faa.com/oeasas/external/bis Tools/cisAction.sp	space Analysis (OE/AAA) ( <i>Note</i> : submit ly Tower Crane Erection or "Jump" in
Notify L&I Crane Management System via email (Towercranenotify@Lni.wa.gov): must be sent at least two weeks before erecting.	Towercranenotify@Lni.wa.gov). Notification
Complete the Duties of Assigned Personnel form. All parties must sign the form at the start of each day before commencing work (Note: Two-day erection operations require a separate form to be signed each day).	form: All parties must sign the form at the start of Two-day erection operations require a separate
Schedule Pre-Erection Safety Inspection to be conducted by a 3rd-party accred certifier per WAC 296-155-53206.	nducted by a 3rd-party accredited crane
Verify underground utilities and structures based on mobile crane outrigger layout.	on mobile crane outrigger layout,
Provide Site Specific Safety Orientation for Crane Supplier, Crane Erectors, and Crane Crewmembers.	Supplier, Crane Erectors, and Mobile
Schedule a pre-erection meeting with all involved parties, including but not limited to Crane Supplier, Crane Erectors, and Mobile Crane Crewmembers.	parties, including but not limited to Crane Immembers.
Notify surrounding neighbors and businesses of crane erection operations	crane erection operations.
Identify overhead power lines, confirm Nominal Voltage with Utility provider, and Minimum Clearance Distance per WAC 296-155-53408 - Table 4.	oltage with Utility provider, and establish 53408 - Table 4.
If applicable, Post "Danger - Overhead Powerlines" signs and implement protective measures per WAC 296-155-53408.	s" signs and implement protective
Provide Live Utility Map to all subcontractors	
Verify location of Tower Crane footing is located per the construction plan.	per the construction plan.
Verify the Tower Crane footing concrete break-strength prior to erection.  Verify a 10lb ABC Fire Extinguisher is available at the Tower Crane cab, the base enclosure.	Extinguisher is available at the Tower Crane cab, base, and outside of
Notify the local Fire Department of the need for a High Rescue Team in case of emergency.	High Rescue Team in case of an
Ensure that completed Tower Crane Binder is located on the jobsite A/D Director and Lift Director for the Erection process.	ated on the jobsite and readily available to cess.
Provide a temporary electrical distribution box at the base of the	the base of the Tower Crane.
Verify the BNB Tower Crane sign is designed and engineered to fit the specific model of Tower Crane per WAC 296-155-53900(62).	engineered to fit the specific model of
Determine need for overnight site security, e.g., two-day erection process	wo-day erection process.
Determine if other crane operations, on-site or adjacent, will affect the crane dismantle. If so, a multi-crane communication plan is required, ( <b>Note</b> : If applicable, the affected crane	adjacent, will affect the crane dismantle. If so,

Set base template
to the BNB project team for the project's duration.
Ensure daily Tower Crane inspection records are kept in the Tower Crane cab and provided
Provide Tower Crane Operator with BNB project team contact information.
Obtain Tower Crane Operator contact information, including emergency contact information.
Obstruction Marking and Lighting
Ensure the Tower Crane is marked/illuminated in accordance with FAA AC 70/7460-1M -
Identify and assign a full-time Lift Director to the project for daily Tower Crane activities.
per WAC 296-155-53905
Schedule annual inspection of all turntable and tower bolts for proper condition and torque
report to duty in their assigned crane)
operators must attend the dismantle coordination meeting the morning of the dismantle, then

Secure power distribution cord running to tower crane cab  Confirm power and grounding requirements with the Tower Crane Provider,  Complete electrical equipment inspections and ensure electrical inspection tags are visible,  Complete electrical equipment inspections and ensure electrical inspection tags are visible,  Complete electrical equipment inspections and ensure electrical inspection tags are visible,  Survey Tower Crane Base after set and provide As-Built drawings  Survey Tower Crane Base after foundation, Anchor Base Install and Tower Crane Base Inspection.  Survey Tower Crane tower to verify within tolerances prior to setting slewing assembly/furntable.  Survey to communicate to Lift Director crane tower tolerance prior to setting slewing assembly/furntable.  Survey to communicate to Lift Director crane tower tolerance prior to setting slewing assembly/furntable.  Survey to communicate to Lift Director crane tower tolerance prior to setting slewing assembly/furntable.  Survey to communicate to Lift Director crane tower tolerance prior to setting slewing assembly/furntable.  Survey to communicate to Lift Director crane tower tolerance prior to setting slewing assembly/furntable.  Survey to communicate to Lift Director crane tower tolerance prior to setting slewing assembly/furntable.  Survey tower Crane Base after set and provide a report to BnBuilders.  Notify BNBuilders and Tower Crane Provider of any deficiencies identified during the inspection.  Provide BNBuilders with final inspection and crane certains and provide a report to setting slewing assembly/furntable.
---

## BNBuilders

	Tower Crane Pre-Erection Checklist	tion Checklist
Project Name	Date	Mobile Crane Operator
The state of the s	DNID	Markin Chan
Election Date	DIND	MODIE CLAIM
The same of the sa	Superintendent	Model
Tower Crane	BNB Safety	Mobile Crane
Madel		Serial #
Tower Crane	Lift Director	Tower Crane
Serial #		Operator
Jib Length	A/D Director	Tower Crane
		Technician

Notify surro Identify ove Minimum C If applicable measures p	Notify surro Identify ove Minimum G If applicable measures p	Identily ove Minimum C	Notify Surro		Schedule a Supplier, C	Provide Site Specific ( Crane Crewmembers	Verify unde	Complete the each day be form to be	Notify the C telephone f erecting an	Schedule P certifier per (Note: Town considered	(Note: Perm Application	Cal/OSHA Crane Unit 2 MacArthur Place, Su Santa Ana, CA 92707 Phone:(714) 567-7142 Ernail:pyow@dir.ca.go	Apply for Cal/OS Title 8 344.71 (b)	Apply for Fa the evaluati elevation) b	Check	T	
	Drovido Live Hilly Man to all subcontractors	If applicable, Post "Danger - Overhead Powerlines" signs and implement protective measures per Cal/OSHA Title 8 1612.1 (b).	Identity overhead power lines, confirm Nominal Voltage with Utility provider, and establish Minimum Clearance Distance per Cal/OSHA Title 8 1612.1	Notify surrounding neighbors and businesses of crane erection operations.	Schedule a pre-erection meeting with all involved parties, including but not limited to Crane Supplier, Crane Erectors, and Mobile Crane Crewmembers.	Provide Site Specific Safety Orientation for Crane Supplier, Crane Erectors, and Mobile Crane Crewmembers.	Verify underground utilities and structures based on mobile crane outrigger layout.	Complete the Duties of Assigned Personnel form. All parties must sign the form at the start of each day before commencing work (Note: Two-day erection operations require a separate form to be signed each day).	Notify the Cal/OSHA district office from which the permit was obtained in writing or by telephone followed by written notification. Notification must be sent at least 24 before erecting and must include date and time of activity per Cal/OSHA Title 8 344.71 (g)(2)	Schedule Pre-Erection Safety Inspection to be conducted by a 3rd-party accredited crane certifier per Cal/OSHA Title 8 344.71 (f) (Note: Tower crane must be inspected twice a year, the Initial permit inspection is considered one of two yearly inspections)	(Note: Permit application may be completed by the tower crane provider.)  Application Instructions: https://www.ch.co.powntle8/344_co.html	Cal/OSHA Crane Unit 2 MacArthur Place, Suite 700 Santa Ana, CA 92707 Phone:(714) 567-7142 Email:pyow@dir.ca.gov	Apply for Cal/OSHA mobile grane permit at the nearest Cal/Osha District Office, Cal/OSHA Title 8 344.71 (b)	Apply for FAA Obstruction Evaluation / Airport Airspace Analysis (OE/AAA) ( <i>Note</i> : submit the evaluation request at least 45 days prior to any Tower Crane Erection or "Jump" in elevation) <a href="https://geggaa.tsa.gov/ogggag/external/gisTools/gisAction.jsg">https://geggaa.tsa.gov/ogggag/external/gisTools/gisAction.jsg</a>	Task	BNB	
															Notes		

Verify a 10th ABC Fire Extinguisher is available at the Tower Crane cab, base, and outside of the base enclosure.  Notify the local Fire Department of the need for a High Rescue Team in case of an emergency.  Ensure that completed Tower Crane Binder is located on the jobsite and readily available to A/D Director and Lift Director for the Erection process.  Provide a temporary electrical distribution box at the base of the Tower Crane. A/D Director and Lift Director for the Erection process.  Determine need for overnight site security, e.g., two-day erection process.  Determine need for overnight site security, e.g., two-day erection process.  Determine need for overnight site security, e.g., two-day erection process.  Determine in other crane operations, on-site or adjacent, will affect the crane dismantle. If so, a multi-crane communication plan is required. (Note: If applicable, the affected crane) screed to duty in their assigned crane).  Screed to duty in their assigned crane is required. (Note: If applicable, the affected crane are conting inspection of all turnable and tower boits for proper condition and forque per Can/OSHA Title 8 1619.1 (I) [5]  Identify and assign a full-time Lift Director to the project for daily Tower Crane activities. Ensure daily Tower Crane Operator with BNB project team contact information.  Provide Tower Crane Operator with BNB project team contact information.  Ensure daily Tower Crane inspection records are kept in the Tower Crane cab and provided to the BNB project team inspection records are kept in the Tower Crane cab and provided to the BNB project team for the project's duration.
---

Confirm power and grounding requirements with the Tower Crane Provider.  Complete electrical equipment inspections and ensure electrical inspection tags are visible.  Survey Tower Crane Rase after set and provide As-Built drawings.	Survey Tower Crane Base after set and provide As-Built drawings.  Survey Tower Crane Base after foundation is placed and provide As-Built drawings.  BNB - In house survey: Layout crane foundation, Anchor Base Install and Tower Crane Base Insp.  Survey Tower Crane tower to verify within tolerances prior to setting slewing assembly/turntable.	Survey to communicate to Lift Director grane tower tolerance prior to setting slewing assembly/turntable	3 <sup>rd</sup> Party Crane Inspector	Complete Tower Crane pre-erection inspection and provide a report to BNBuilders.	-	Cal OAHA Permit & Safety Inspection	Cal OSHA - Notify BNBuilders and Tower Crane Provider of any deficiencies identified during the inspection.	Cal OSHA - Provide BNBuilders with final inspection and crane certification for the Tower Crane.	Provider.  nspection tags  vey  As-Bullt drawing tall and Tower ( g slewing asse
---	--	--	---------------------------------------	--	---	-------------------------------------	---	--	--

### VOLUNTARY USE OF RESPIRATORS

"Information for Employees Using Respirators When Not Required Under the OSHA Standard." A copy of this exhibit is to be provided to any employee who chooses to wear a filtering facepiece or tight-fitting negative pressure respirator on a voluntary basis:

"Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection of workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards."

If BNBuilders provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

### You should:

- Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations. Training is required for all respirator use.
- Choose the respirators certified for use to protect against the contaminant of concern. NIOSH, the
  National Institute for Occupational Safety and Health of the U.S. Department of Health and Human
  Services certifies respirators. A label of certification should appear on the respirator or packaging.
  It will tell you what the respirator is designed for and how much it will protect you.
- 3. Refer to the Chemical Safety Data Sheet (SDS) for additional information or ask your supervisor.
- 4. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
- 5. Keep track of your respirator so that you do not mistakenly use someone else's respirator.
- You should have a medical clearance and fit test prior to wearing your own respirator.
- Review L&I respirator guidelines at <u>www.lni.wa.gov</u> WAC Chapter 296-842.

Name	Date
Signature	Company/Project
BNBuilders/Supervisor/Trainer	

BNBuilders 4/18/2014