APPENDIX 3-D

INITIAL HEALTH AND SAFETY PLAN

(See attached.)

Design and Construction Health and Safety Plan (D&C HSP)

June 2017

Great Hall Project LLC

ferrovial SAUNDERS Building Confidence JLC MJE-Loop Capital Partners LLC

Revision history

Revision	Effective Date	Prepared by:	Reviewed by:	Approved by:
V0	06/26/2017			

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1 DBJV Safety Mission Statement

DBJV is committed to the safety, health, and protection of all employees and the general public, as well as our construction management and subcontractor partners and their respective workforces. It is therefore expected that each person, of every tier and position, will commit to maintaining DBJV Partner's values, goals, and objectives, as outlined within the body of this manual. No single aspect of construction is of greater importance than the health and well-being of our construction workforce, management staff, public, and the environment.

The Mission of DBJV is the prevention of injury, illness, environmental impact, and property damage during all construction activities that are conducted at the Project. This mission will be accomplished using a multi-dimensional approach to the management of safety, including the following:

- Development of strong partnerships between DBJV and the construction community
- Implementation of a comprehensive Health and Safety Plan for construction activities
- A defined accountability and responsibility program that fosters safety ownership during construction
- A defined set of company goals and objectives related to the safety and health of the workforces
- A continuous improvement philosophy focused on improving at each phase of construction activities
- Injury prevention through an intense focus on activity pre-planning at every level of construction
- Maintenance of strong, open communication lines where all interested parties add value to safety

The practices and programs listed above, in conjunction with a strong management commitment and maintenance of positive relationships will prove to be an invaluable asset to DBJV, its partners, and all stakeholders. Meeting this goal will require steadfast dedication at every level of the construction project, and begins with the commitment by the management teams within DBJV.

2 Plan Overview

This Plan has been developed by DBJV and is dedicated to the prevention of injuries, illnesses and property damage on the project. This document establishes the minimum safety and health guidelines, expectations, and responsibilities for all construction activities associated with DBJV.

This Plan is intended to serve as a reference guide and contract document to be utilized by all tier subcontractors during all phases of construction.

3 Scope of Work

This Plan applies to all phases of construction, renovation, alterations, pre-construction, and demolition activities conducted on behalf of DBJV.

4 Emergency Contact List

During an emergency all employees will follow the Great Hall Partners Emergency Action Plan (EAP) (Appendix A) to ensure all employees are consistent in the emergency response procedures which are in turn consistent with the DEN Airport Emergency Plan (September 21, 2015)

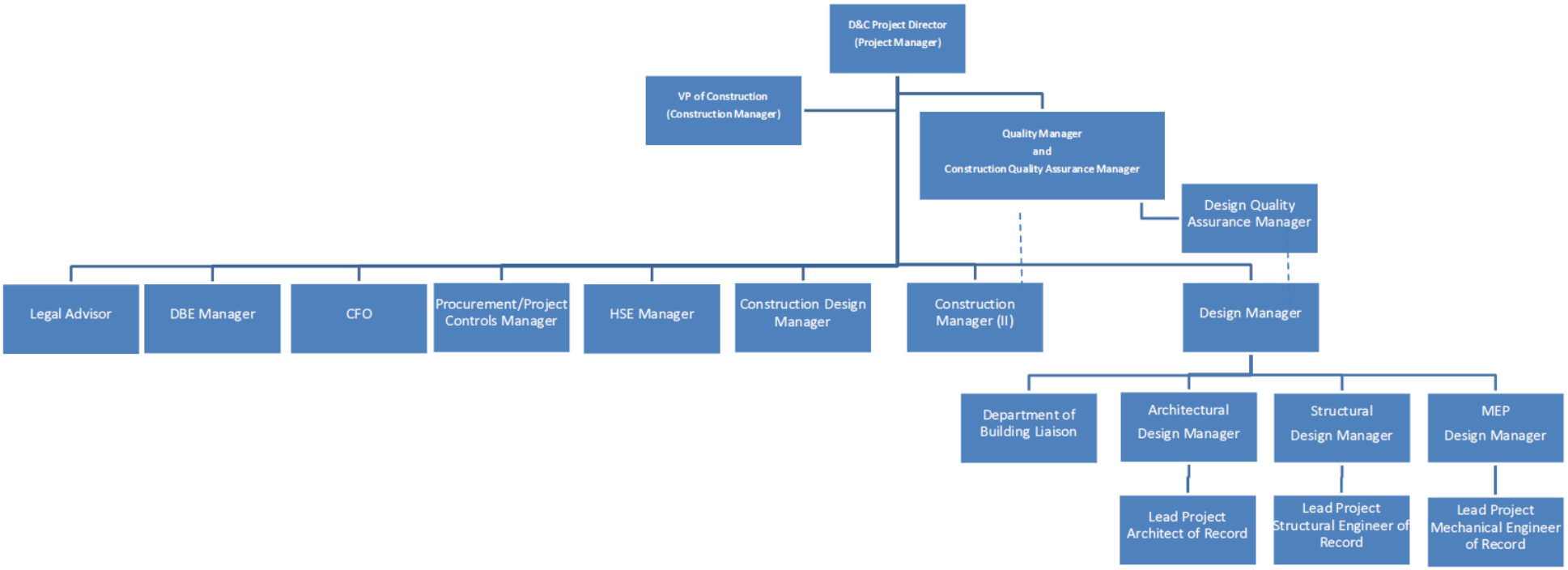
All employees shall be trained as outlined in the appropriate plans.

Below are the names and contact information on individuals on the Project that will be contacted in the event of an emergency.

DBJV EMERGENCY CONTACT NUMBERS		
ROLE	Name	Contact Number
Asset Delivery Director		
Project Director		
Construction Manager		
Project Manager		
D&C Safety and Environmental Manager		

EMERGENCY SERVICES		
FIRE - POLICE - AMBULANCE	DEN Emergency Services	303-342-4211

5 Organizational Chart



6 Zero Injury Policy

Injuries DO occur. However, this is not to say that injuries MUST occur. Management's top responsibility is to clearly set the expectation that ZERO is the only acceptable goal. Any other goal sends a dual message that injuries must occur and are therefore, acceptable. Acceptance of injuries fosters a loss of control and subsequent loss of willingness and ability to significantly impact severity or frequency of occurrence. Symptomatic is the attitude: "There was nothing we could have done to prevent this injury."

Alternatively by accepting only ZERO, everyone must take responsibility for accident prevention. Symptomatic of this is the attitude: "There is something we could have done to prevent that injury. Let's figure out what it is!" When management action parallels management desire to accept only ZERO, all employees will begin to believe that management is really serious about safety.

The ZERO injury concepts reflect DBJV's genuine acceptance of personal responsibility for the welfare of our employees. Nothing positively impacts the culture of an organization more than the realization that management really cares about and trusts the employees.

7 Health and Safety Policy Statement

The safety of the employees of DBJV is of paramount importance. Our goal is to provide an incident free work environment for our employees, and to perform work in the safest manner possible consistent with good construction practices. To fulfil the requirements of this policy, an organized and effective safety program must be carried out no matter what work is being performed.

Our safety policy is based on a Corporate Safety Philosophy, which states that:

- Safety must be considered first. It is just as important as production, schedule, quality and profit—it cannot be compromised.
- Safety is a management responsibility and safety can be managed.
- A commitment to safety is a commitment to doing things right—the first time. Ultimately, this results in elimination of injuries and optimization of all activities.
- All accidents and injuries are preventable. All accidents are the result of unsafe acts or unsafe conditions.
- Safety is an individual responsibility and a condition of employment for all employees.
- Every task must be performed with a concern for safety, for ourselves, our fellow employees, subcontractors, customers and the general public.

All supervisors and managers shall implement and enforce this safety and health program with the goal of eliminating injuries and losses through endorsement, enforcement and assignment of program responsibilities. While visiting a jobsite, managers should routinely evaluate jobsite conditions and employee performance and report these findings to the supervisor in charge.

The supervisor of each work area shall be held accountable for the safety and health of the employees under his or her direction and shall be held responsible for the timely reporting of any illness/injury. It shall be the supervisor's responsibility to ensure that any jobsite hazard is responded to immediately.

In addition, all supervisors will be responsible for thoroughly investigating all accidents, conducting weekly safety meetings, planning and coordinating work to avoid injury, establishing procedures to make the workplace safer, and for uniform enforcement of all safety rules.

All employees must use the safety equipment provided and are expected to know and follow The DBJV Safety Program. As new employees join our workforce, management shall ensure that these employees participate in the New Hire Orientation Program where new employees are informed of company policies and procedures.

Only by the joint cooperation of subcontractors, employees and management in the observance of this policy can we assure safe working conditions and obtain our goal of accident free performance.

8 Management Commitment and Responsibilities

Any program or procedure is only as good as its implementation. Management will be actively involved with all employees in establishing and maintaining an effective safety program company wide. Members of our management team will participate with projects and employees in program activities that include but are not limited to:

- Promoting safety program participation by all employees;
- Providing safety and health education and training;
- Adopting, reviewing and updating workplace safety rules and regulations; and
- Providing the financial resources necessary to promote a safe workplace.

This safety program has been adopted as the standard of practice for DBJV and for compliance with our safety rules that will be required by all employees as a condition of employment.

8.1 Responsibilities

Senior Management

- Develop Safety Policy;
- Communicate policy and expectations;
- Prioritize activities and allocate resources;
- Oversee compliance with contract terms and conditions;
- Monitor safety performance; and
- Any other responsibilities as defined in this Health and Safety Plan.

Project Manager

- Same as Executive Management in terms of jobsite overview;
- Develop plans and programs to implement policy and programs;
- Oversee problem identification / corrective action processes;
- Solicit and respond to feedback and lessons learned; and
- Any other responsibilities as defined in this Health and Safety Plan.

Superintendent(s)

- Develop procedures to implement plans and programs;
- Ensure hazard awareness and communication;
- Oversee work planning and execution;
- Solicit and use worker input;
- Implement corrective actions; and

- Any other responsibilities as defined in this Health and Safety Plan.

Safety Department

- Ensure safety procedures are established as per policy and programs;
- Ensure safety compliance;
- Assists and Review procedures to implement plans and programs;
- Assist Project Management in developing controls that ensure safety procedures are enforced;
- Solicit and respond to feedback and lessons learned; and
- Any other responsibilities as defined in this Health and Safety Plan.

Subcontractors

- Control the work scope;
- Identify hazards;
- Implement hazard controls;
- Authorize job / tasks;
- Provide feedback and lessons learned; and
- Any other responsibilities as defined in this Health and Safety Plan.

All Employees

- Maintain technical competence;
- Perform work within controls;
- Identify hazards and report incidents;
- Stop work, if necessary,; and
- Any other responsibilities as defined in this Health and Safety Plan.

9 Pre-Project Planning and Startup

9.1 Purpose

It is the program of our company to perform work in the safest manner possible consistent with good construction practices. To fulfill the requirement of this program, an organized and effective safety program must be carried out at each location where work is performed.

This program has been established to guide the management at new projects through the startup of a site-specific safety program. Such programs shall be in place at each project office to address hazards and hazardous operations unique to each project as well as ensure compliance with DBJV program and applicable regulations.

The intent of a job-specific safety and health plan is to help each employee focus on specific hazards and any safety concerns that are inherent with their project.

Applicable Regulations - OSH Act of 1970 / OSHA General Duty Clause

9.2 Responsibilities

Project Director shall:

- See that an effective safety program is carried out on their job. The project director is responsible for the safety of our people, our equipment and the public.
- Ensure that this Health and Safety Plan is reviewed and updated to include any site-specific requirements.

Project Management shall:

- Set objectives to meet Safety goals.
- Set objectives for safe work performance,

Objectives shall be:

- Specific: safety objectives should be clear to all personnel. It should be communicated whether or not objectives are by job, operation, crew, man-hours worked, etc;
- Realistic: safety objectives must be realistic so that crews are motivated to achieve them;
- Time Bound: to motivate workers, have objectives for this month, week, shift, etc;
- Measurable: safety objectives must be quantifiable;
- Crew involvement: the crew must accept Safety objectives. 100% participation in the program is vital for its success.

9.3 Project Startup Management Safety Meeting

A Project Startup Management Safety Meeting shall be held to achieve the following objectives:

- Ensure all project safety matters are properly addressed in the project's written safety program including site-specific conditions;
- Familiarize the management team with the written safety program;
- Establish a clear understanding of project management's roles and responsibilities under the written safety program; and
- Continue the training and development of company personnel in the field of job site safety.

The meeting shall be held at the following location, date and time:

- Prior to commencing work on a new project;
- The meeting should be conducted when most of the project's management team have reported to the project;
- The meeting shall be conducted at the jobsite;
- The Project Director will conduct the meeting; and
- The Project Director / Job Superintendent must inform the Project Executive and the Safety Department, of the date and time of the meeting.

The following persons shall attend the meeting:

- All project supervisors;
- Engineers;
- Project Executive;
- Safety Department.

Meeting agenda shall include but is not limited to:

- The written Safety Program will be reviewed in its entirety;
- The Safety, Health and Environmental Program shall be discussed;

Responsibilities and required dates shall be assigned;

- The Project Manager / Job Superintendent must submit a copy of the agenda to the Project Executive and the Safety Department for the review prior to the meeting begin schedule;
- Comments and recommendations regarding the project safety program shall be submitted to the Safety department for approval prior to any changes being made.

10 New Hire Orientation

Purpose

The purpose of this program is to familiarize all personnel with the safety policies and procedures, local and federal laws, and any site-specific procedures needed to increase safety knowledge and prevent accidents.

On initial employment, DBJV will orientate all employees.

They will be fully indoctrinated using the Orientation training materials, booklets, training videos and site-specific procedures. They will receive the required training before they are permitted to take part in operations and only after filling out all required paperwork.

Employees may further receive specific safety training as deemed necessary:

- DEN/ H&S requirements
- Competent person training
- Task training
- Qualified person training

New Hire Orientation Procedure

Pre-orientation

- Project team shall inform the Safety Department of the number of new hires at the end of each business week (Friday), to allow for orientation scheduling;
- Safety to coordinate training sessions;
- Orientation packs will be prepared prior to orientation by Safety.

New Hire General Orientation: All Employees

- Safety Department will conduct the indoctrination;
- Orientation safety topics will at a minimum include:

- Accident Prevention
- Injury Incident Free
- Reporting of Accidents
- Haz-Com
- Fire
- P.P.E
- Emergency response

Competent / Qualified Person Training

Employees identified as competent persons, shall take part in and complete the Competent Person Training. Competent Person designation (See Appendix C-1); will not be attained until completion of the prerequisite course.

Post Orientation Follow-Up

Supervisors must continually monitor the performance of those employees under their direct supervision. Any unsafe actions or work methods used by employees should be corrected immediately.

Subcontractors

Subcontractors, and the employees of subcontractors performing work on the site, shall be required to adhere to the requirements of the above New-Hire Orientation program. This shall include notifying DBJV as the General Contractor (GC) of all employees who will be working on the site. Subcontractors shall also identify competent persons and provide Competent Person designation forms for each person identified as such (See Appendix C-1).

Site Specific Orientation

Site-specific orientation will be conducted on site organized by the project team and safety department.

Responsibilities

Project Management shall:

- Provide necessary time, resources and support for all and any training needs.
- Complete all appropriate sign-up paperwork prior to orientation.
- Ensure that Subcontractors and subcontractor employees working on site complete the site specific safety orientation and follow the safety procedures herein.

Management and the Safety Department shall:

- Conduct the body of the orientation using the necessary training materials;

Superintendent and Field Manager shall provide:

- Specific project safety training which shall be documented signed-off before employee is released to the project.

Visitors

All visitors to the project will be required to sign in at which time they will receive a brief safety orientation for the project. Personnel thoroughly familiar with the safety requirements of the job will escort all visitors. Prior to entering the project, all visitors must read, understand, and sign the Visitor Form. The Visitor Form located in (Appendix C-2) can be used to satisfy this requirement.

11 Drug and Alcohol Testing Protocol

11.1 Purpose

DBJV is strongly committed to providing a safe and healthy work environment for all employees. To promote this goal, employees are required to report to work in appropriate mental and physical condition to perform their jobs in a satisfactory manner. Employees and applicants for employment are subject to drug and alcohol screening under the following circumstances:

11.2 Rules

- The use, possession, distribution or sale of alcohol, illegal drugs (under Federal or State law), or other controlled substances anywhere on the DBJV's premises is prohibited.
- No company employee shall report to work while under the influence of alcohol, drugs, or other controlled substances. Employees using prescription medication or over the counter medication, which contains a warning about possible drowsiness or impairment, must report its use to their supervisor.

11.3 Substance Screening

- Pre-employment screening.
- Applicants who have been conditionally offered a position will be required to successfully pass a drug and alcohol screening. Conditional offers of employment are withdrawn for applicants who test positive.

11.4 Screening Program

To ensure compliance with the above rules, employees and applicants for employment shall be subject to drug and alcohol screening under the following:

- Applicants – Prior to employment, each applicant will undergo a drug and alcohol screening. Applicants who test positive will not be considered for employment.
- Behavior Indicated – When there is a reason to suspect an employee's behavior raises a reasonable suspicion of drug or alcohol use, the employee will be required to undergo a drug and alcohol screening.

- Post-Accident/Incident – An employee who sustains a job-related injury requiring medical attention or whose performance contributed to an accident will be required to undergo a drug and alcohol screening.
- Preventative Testing – DBJV employees are included in the Preventative Testing Program, which is conducted unannounced.
- Government or Client/Owner Mandated – In addition to the above, employees are required to submit to the Government, Client/Owner Mandated drug and alcohol testing to the extent that they are required.
- Truck Drivers – Drivers of commercial vehicles or of any vehicle requiring hazardous material placards are also subject to the Drug and Alcohol Policy.

11.5 Alcohol Use

- The consumption of alcoholic beverages, on or off premises, during working hours or while on rest, or meal breaks during work hours, is strictly prohibited.
- Employees may not report to work under the influence of alcohol. DBJV' vehicles may never be driven while under the influence of alcohol.

11.6 Violations of Policy

- An applicant/employee who fails to cooperate fully in providing specimens and information or who attempts to contaminate specimens will be immediately discharged or disqualified for further employment consideration.

12 Disciplinary Program

The purpose of this program is to hold everyone equally responsible for preventing injuries and accidents. We will hold all levels of personnel equally accountable for their actions and subject them to the same levels of discipline.

Zero tolerance means there is no place for persons creating a hazardous condition or performing work in an unsafe manner on our job sites with no exceptions.

12.1 Responsibilities

Project Management shall:

- Enforce the Zero Tolerance, Accountability and Disciplinary Program at the project level.

Safety Department and Senior Management shall:

- Enforce the Zero Tolerance, Accountability and Disciplinary Program on Project Management.

12.2 Procedure

Communication:

- This program shall be communicated to all employees; and
- Review of the Disciplinary program is required as part of the employee new hire orientation.

Zero Tolerance:

- There will be no tolerance for anyone creating a hazardous condition or performing work in an unsafe manner;
- There will be no tolerance for failing to follow verbal or written safety procedures, guidelines, rules, horse play, or failure to wear selected PPE, or abuse of selected PPE
- There will be no tolerance for anyone damaging company vehicles, equipment, and tools or causing damage to another person's property when taking proper precautions that could have prevented the damage;
- Zero Tolerance holds everyone responsible and accountable for preventing incidents.

Levels of Discipline:

- First Offense – Verbal or Written Warning (Appendix C-11)

- Second Offense – Immediate 3-day suspension from the DBJV Project.
- Third Offense – Permanent Discharge from the Project.
- This program will be enforced without exceptions.
- Employees will be asked to attend a formal meeting to discuss violations and the corrective action to be taken.

Recordkeeping:

- Reprimands will be recorded, whether verbal or written; and
- Reprimands will be filed with the individual employee's records within the Human Resources Department.
- Imminent danger violations may result in immediate permanent removal from the project at management's discretion.

13 Incident Reporting Procedure and Documentation

The purpose of this program is to provide and ensure proper medical treatment and post-accident care as well as to ensure incidents are promptly reported and investigated. All incident reporting procedures are covered in this section.

DBJV employees will be taken to a preferred care provider for medical treatment by a salaried supervisor or a member of the Safety Department. Please reference Appendix C-7 for the Medical Treatment Authorization Form.

Incident investigation is a necessary and effective technique for preventing recurring or future incidents. If anything positive results from an incident, it is the opportunity to determine the causes and how to eliminate them.

Beyond the human economic considerations involved with loss control, legal implications alone completely justify the time and effort devoted to incident reporting and investigation.

Whenever this section mentions incidents, this includes, but is not limited to, company, subcontractor, and third party incidents.

13.1 Responsibilities

Subcontractor Supervisors and/or Project Superintendent shall:

- Accompany, as needed, each injured employee to the medical facility where treatment will be provided;
- Explain the circumstances of the injury to the treating physician;
- Provide the treating physician with an authorization for initial treatment and release of medical information form and request that the doctor complete the form;
- Have the injured employee take an authorization for initial treatment and release of medical information for all follow-up doctor's visits;
- Explain to the treating physician that light or restricted duty is available and his completion of the authorization for initial treatment will help us create a light-duty position that stays within the guidelines and restrictions placed on the patient; and

- All paperwork shall be submitted to the Safety Manager on immediate return to the job.
- Report all recordable incidents to the Project Executive and the Safety Department within 24 hours of the incident occurrence;
- Be prepared to discuss the details of the incident with the Safety Manager; and
- Conduct a Post Incident Meeting within 72 hours of the incident for all recordable and lost time claims. A root cause investigation may be required on near miss or property damage claims as determined by the Safety Manager. This meeting will include the Subcontractor Supervisor and Safety Manager.

Job Site Safety Coordinator/Safety Officer shall:

- Notify the Safety Manager immediately when an incident occurs that requires off-site assistance such as medical care beyond first aid, emergency services or environmental remediation;
- Liaise with Corporate Insurance Department regarding set up of local clinic at commencement of new project;
- Reconcile jobsite OSHA 300 Log on a monthly basis;
- Maintain and complete all incident files for each new occurrence. This is to include, but is not limited to, documents as defined in this program;
- Issue all relevant forms;
- Initiate Post Incident Review Meeting utilizing the Injury Investigation Report (Appendix C-8);
- Participate in all required meetings as set forth in this program.

Safety Manager shall:

- Commence and maintain Jobsite OSHA 300 Log and Job Incident Log;
- Ensure all incidents are reviewed and recorded as per OSHA recordkeeping requirements;
- Communicate incident classifications to Insurance Department for recording purposes;
- Develop monthly, quarterly and yearly incident statistics and trends as required;
- Receive all incident classifications from Safety Coordinator, and record as such;
- Maintain paper files on each incident;
- Communicate with jobsite on return-to-work until completion of each claim;
- Maintain Incident Log;
- Communicate with jobsite on monthly basis to reconcile the Incident Log and Jobsite OSHA 300 Log;
- On start-up of project, consult with Insurance carrier to establish occupational clinics as providers of medical care;
- Initial Meeting with clinic to be held prior to work commencing in order to establish relationship and return-to-work program.

13.2 Subcontractor Incident Reporting Procedure

Any of the below incidents must be reported by the Project Superintendent, Subcontractor Supervisor, Safety Coordinator, and Safety Manager within 24 hours of the occurrence:

- Any accident which involved an injury requiring a doctors' treatment, whether it be a First-Aid case, OSHA recordable or lost time case;
- Any near miss incident;
- Auto/Motor fleet incident; and
- Property damage and public liability incident.

Accidents meeting certain criteria as per OSHA shall be reported to OSHA within 8 Hours of discovery.

Incidents shall be reported to the Owner/Client as soon as possible.

The Subcontractor Supervisor must be prepared to discuss:

- What happened?
- How it happened?
- Why it happened?
- What is being done to prevent reoccurrence?

13.3 DBJV Incident Recording Procedure

The Safety Coordinator is to produce an Incident Report (Appendix C-8) for all incidents that occur on site. This is to include, but is not limited to: employee injury or illness; near miss incidents; incidents; and environmental incidents.

Documents to be attached to the Incident Report are as follows:

- Post incident meeting report;
- If incident is classified as recordable, lost time or near miss, then a Corrective and Preventative
- Action Plan is required;
- Any relevant photographs;
- All doctor's reports (to include up to Return-To-Work Full Duty slip);
- Witness statements;
- Drawings; and
- Manuals and or specification documents.

Report to be completed and submitted to Safety Manager within 24 hours of each event.

All general liability incidents must be reported to the DBJV immediately. A determination will be made as to what additional action needs to be taken based on the type of incident. Subcontractors will contact the Safety Coordinator or their designated contact (Project Superintendent) within the Project Area no matter

how insignificant the incident may appear. Subcontractors are required to provide a written report and follow their company reporting procedures for such occurrences.

The General Liability Investigation Report (Appendix C-9) is available if the Subcontractor does not have its own form.

The report and all supporting documentation must be submitted to the DBJV Safety Department within 24 hours following notification of the incident.

13.4 Near Miss Reporting

The definition of a Near Miss is an event or occurrence that could have resulted in an injury to an employee, damage to equipment, or damage to private or public property. Near Miss occurrences can lead to serious injuries if they go unreported and we do not share what we have learned. A near miss is not defined as a failure for an individual or group to knowingly disregard a policy or procedure.

The Safety Department is requesting that all Near Miss occurrences be communicated via Near Miss Communication Form (Appendix C-10) immediately to your supervisor and the Safety Coordinator. The purpose of communicating a Near Miss is to gain an understanding of what actions or non-actions contributed to the Near Miss. Information gathering will be conducted by Safety with assistance from the Superintendent, Subcontractor and the Crew. The purpose of the information gathering will be to understand the circumstances that led to the Near Miss, not to administer disciplinary action to any individual. Take the lessons learned and communicate the findings from the Near Miss to all individuals. There will be a Near Miss Report distributed weekly to all Subcontractors so lessons learned will be shared and communicated.

Near-Miss occurrences that are reported will not result in disciplinary action for the individuals involved.

14 Risk Assessment Program

14.1 Purpose

Risk assessment, by way of Job Hazard Analysis (JHA) (Appendix C-5), will be done for each activity, to identify significant safety, occupational health hazards or environmental aspect of our activities, products and services. The intention of the Job hazard analysis is to methodically and systematically prepare for each activity, prior to work commencing in the field. By pre-planning, we will be able to identify any potential risks, and develop controls that will be used to eliminate the risk as the activity commences.

14.2 Responsibilities

Project Manager, General Superintendent and Safety Manager shall:

- Review all Job Hazard Analysis and sign-off prior to each activity;
- Ensure Job hazard Analysis are prepared for each site specific operation; and
- As work operations change, ensure job hazard analysis are reviewed and updated where required.

Project Manager shall:

- Initiate job Hazard Analysis according to the schedule; and
- Designate responsibility of the Job Hazard Analysis to the relevant engineer to that activity.

Superintendent / Field Engineer shall:

- Develop Job Hazard Analysis for all operations;
- Continually review and audit those plans throughout the activity to ensure that all the controls are being used and are working;
- If the activity changes or deviates from the job hazard analysis in any way, revision is required to the Job Hazard Analysis to detail new controls that will be required to mitigate the hazard; and
- Hold a job hazard analysis training session with the employees involved in the activity, to detail the construction process and the controls that should be in place during the activity to eliminate hazards to themselves. This training should be held prior to work commences, and thereafter as required until completion of the activity.

Field Manager shall:

- Participate in the development of Job Hazard Analysis for their operations; and
- Review the Job hazard analysis with members of his or her crew prior to beginning operations, and thereafter as required, until completion of the activity.

Employees shall:

- Participate in the review of all Job Hazard Analysis applicable to their job responsibilities prior to taking part in operations, and thereafter as required, until completion of the activity; and
- Sign off on all Job hazard analysis prior to taking part in operations, and thereafter as any further training sessions are held relating to that activity.

14.3 Procedure

- Hazard Identification and assessment will be conducted on two levels:
    1) Risk assessment will be conducted as part of our management system, potential onsite hazards will be identified by means of a pre-set core list of hazards. Management of each hazard will be generic by nature and intended to be the minimum requirements that are expected in the management of each hazard.
    2) Specific hazards for each individual activity will further be identified and managed by way of Job Hazard Analysis. The object of construction planning is to detail all the identified hazards for that activity and to implement methods and controls to eliminate hazards as relates to that activity. It is the intention that both of these requirements will feed each other in the hazard identification and control process.

- For each specific activity, a Job hazard analysis will be completed prior to work commencing. The plan will cover all general information regarding that activity and will include, but not be limited to:
    1) the name of the jobsite;
    2) the name and/or description of the activity that the risk assessment is being completed for;
    3) the cost code(s);
    4) whether or not the activity is on the critical path;
    5) where on the site the activity will take place;
    6) all responsible individuals must be named on the document, including Project Manager, Field Engineers, Superintendent, Safety, Field Manager, and competent person(s) required under OSHA.

- The JHA scope of work will be completed as a narrative description of the activity. It will include:
    1) All elements of the task in a sequential order;
    2) Information regarding the scheduled start and completion dates of the activity and the actual work schedule i.e. days of the week to be worked;
    3) All equipment, exhaustible materials, small tools and safety equipment;

4) Emergency provisions, beyond the site's emergency action plan, are required to be completed for each activity.
5) Any attachments to the activity will be documented at this time (e.g., drawings, SDS sheets, cut sheets etc.).

- The scope of work will be used to break down the activity into specific and detailed individual sequential tasks, allowing for a detailed analysis of the hazards involved. For the purpose of risk assessment, triggers will be used as the means to identify and control the risk for that activity. Once the triggers and hazards have been identified, an Initial Risk Level will be applied to the specific task. From here, controls (engineering, administrative, training etc.) will be developed and documented with the intention to reduce the risk (severity or likelihood) to the lowest possible level. Once controls have been identified, and by assuming the controls are implemented as designed, we will then be able to determine the Residual Risk Level for the task by applying the same Matrix system that was used to determine the Initial Risk Level. Once hazards have been identified, and controls put into place, responsibilities for control implementation, monitoring and evaluation will be documented.

- Once the job hazard analysis has been completed, either the Project Manager or the Superintendent will sign-off on the plan as fully completed. At this point, employees will then be trained in the job hazard analysis prior to work commencing.

14.4 Follow Up

- Evaluate the operation as it proceeds;
- Make sure the job hazard analysis is followed. If any deviancies are found, the job hazard analysis shall be reviewed and amended with new controls to manage or eliminate the risk. The crew will then be trained in any changes made to the construction plan; and
- Determine what changes, if any, are necessary to improve the operation – if so then amend the job hazard analysis and re-train the crew.

15 Subcontractor Management

The purpose of this program is to set standards for subcontractor safety performance on our projects. As a General Contractor, we must provide a safe working environment for all. If we knowingly allow subcontracted employees to work unsafely or allow them to create an unsafe condition, we could be held responsible by law.

DBJV as the General Contractor, should always lead by example and never compromise safety for the sake of schedule, cost or any other reason.

15.1 Responsibilities

Project Management /Safety Department/ Purchasing Department:

- Hold a Pre bid qualification meeting and use Attachment A as part of the De-scope meeting.
- Pre bid information submitted shall include OSHA 300 LOG for previous 3 years
- Subcontractors shall complete prequalification documentation, as required. Provide insurance certificate and coverage as per the contract. Bonding requirements as required by the contract .A signed contract shall be in place prior to start of work.
- Inform subcontractors of the additional safety programs required by the project, as these programs typically will add additional costs to their price;
- Solicit, review and amend the subcontractors written safety program and a Work Plan for their activities on the Construction Site (Appendix C-3);
- Comply with all Subcontract Requirements;
- Conduct a pre-construction Safe Start meeting with subcontractors and their second tier subcontractors to inform them of the site-specific program. Developer may also be invited, pending approval of site management and the Safety department
- Conduct subcontractor safety meetings as deemed necessary;
- Conduct Inspections of subcontractor operations to ensure compliance with applicable regulations and policies.
- Request a copy of weekly toolbox talks given by the subcontractor.
- Subcontractor's employees will attend a site orientation prior to start of work.

Subcontractors shall:

- Attend the pre-construction safe start meeting held by DBJV Project Management;
- Provide a copy of their site-specific safety program for review by DBJV Project Management;
- Designate, in writing, all competent person(s) for each applicable discipline(Appendix C-1);
- Provide training records as required by OSHA;
- Attend contractor's Site Safety Meeting on monthly basis;

- Provide detailed Work Plans prior to commencing work. These work plans shall include hazard analysis / risk assessment; (See appendix C-3). Completed Work Plans must be submitted to the DBJV Area Manager in charge of the operation. Until the Work Plan Review sheet (Appendix C-4) has been completed by DBJV for each Work Plan, the operation described in the Work Plan cannot be commenced. Work Plans shall be amended by the Contractor if variables change. In these instances, the Work Plan must be resubmitted to DBJV Segment Manager.
- Conduct a minimum of one toolbox safety meeting a week and delivering a signed copy to the jobsite office.
- Subcontractors shall complete prequalification documentation as required. Provide insurance certificate and coverage as per the contract, bonding requirements as required by the contract and a signed contract shall be in place prior to start of work.
- Subcontractors employees will attend a site orientation program prior to start of work Subcontractor's Competent Person or Site Safety Manager shall:
- Conduct training and provide any records necessary to prove compliance including, but not restricted to, air monitoring reports, employee blood levels and proof of respirator fit tests (this also includes second tier subcontractors); and
- Attend any site-specific subcontractor safety meeting which may be held weekly, monthly or periodically, pending the job manager's discretion.

Subcontractor Employee(s):

- All subcontractor employee(s), and second or third tier subcontractors and their employee(s), will attend DBJV jobsite orientation program at the commencement of employment.
- Shall comply with applicable OSHA 1926 requirements and state or local requirements whichever is the more stringent.
- Shall comply with DBJV Health and safety Program.
- Subcontractors will attend safety incident investigations at the request of the Project management team and be part of the lessons learned process.
- Subcontractors where required shall submit Man-hours report.
- Each Subcontractor must comply with section Incident Reporting Procedure of the Health and
- Safety Plan.

15.2 Enforcement of Safety Rules

- All subcontractor and second, third tier subcontractor employees will be expected to follow our safety rules that have been detailed in the subcontract agreement. Failure to comply may be cause for dismissal.
- Project Managers will administer the program and exercise discretion as needed. Subcontractor will identify the individual designated as the competent person for the project. This person must be familiar with federal regulations and have authority to terminate unsafe operations.
- All subcontractor employee(s), including their second and third tier subcontractors, are bound by the Safety Disciplinary Program (see Disciplinary Program set forth in this Health and Safety Plan).

- Subcontractors are required to utilize DBJV Employee Reprimand Notice Forms for each employee violation.
- Subcontractors are required to submit copies of each Employee Reprimand Notice to the Contractor on a monthly basis.

15.3 Subcontractor Safe Start

Subcontractor agrees to pursue its work in a safe manner at all times, taking all necessary precautions to prevent injury and damage to all employees on the project, the public and the project site. Subcontractor shall comply with all laws, ordinances, codes, rules, regulations and standards relative to safety and the prevention of accidents and shall also comply with all provisions and requirements of DBJV Safety Standards and the Occupational Safety and Health Act, including any and all amendments and supplements to such Acts, all other standards referenced herein or more stringent Federal, State or Local requirements as are applicable in the performance of the Subcontract Work.

DBJV Sub Contractor Safe Start-Up meeting:

- Submit Subcontractor Employee Training Records
- Submit Safety/Competent Person Contact List
- Drug and Alcohol requirements; Contractor is strictly prohibited from the use of Illegal Drugs (per Federal or State Law) or Alcohol on any job sites or premises.
- Site Specific DBJV Safety requirements
- Due Diligence and Subcontractor Pre qual procedures and forms
- Signed contract and bonding and insurance requirements

(See Appendix B for Safe Start Documentation site specific HASP for full details of a Safe start meeting)

16 Safety Meetings

16.1 Purpose

The purpose of this program is to establish guidelines for conducting safety meetings on the job site. Safety meetings are an important tool in conveying our safety message and concerns.

In addition, all other meetings that take place in our company will start out by discussing safety including, but not limited to, operations meetings, Field Manager/ Foreman meetings etc.

16.2 Responsibilities

Field Manager / Foreman shall:

- Hold toolbox talk subjects with the help of project management;
- Conduct one Safety Toolbox meeting each week; and
- Hold a Safety Reminder Meeting at the beginning of shift huddles.

Project Management shall:

- Assist the Field Manager in the development of Toolbox Meeting subjects;
- Attend Toolbox meetings; and
- Hold and attend Site Safety Committee Meeting.

All Project Personnel shall:

- Attend a weekly toolbox talk meeting.

16.3 Procedure

Toolbox Talks:

- Project Management shall make available toolbox talk for the week;
- Meetings will be held before the start of shift;
- Field Manager's Toolbox Meeting form will be submitted to jobsite Safety Department for record retention;
- A "hands on" safety demonstration will be presented, examples may include, incident discussion, fall protection, fire extinguishers, proper use of cut-off saws and chain saws – chaps and full face shields, electrical lockout / tag out procedures, continuity testing, etc.; and

- Competent persons or qualified persons should be used as part of these meetings. For example, a crane operator may discuss crane signals, rigging, or load charts. This is a great opportunity to get the employees involved and diversify the meeting.

17 Safety Committee

17.1 Purpose

The purpose of the Safety Committee program is to improve the attitude of every person working at DBJV project on health and safety, attain continuous reduction in unsafe practices and improvement in the working environment.

The safety committee program is to have all levels of project management and crafts involved in the safety program. Members of the committee will democratically elect a chairperson and co-vice chairperson. DBJV management will support the committee with all necessary resources to ensure its essential quality.

17.2 Responsibilities

Job Safety Committee shall:

- Review and make recommendations regarding all incidents;
- Conduct regular inspection of the work;
- Assess hazards;
- Review job safety performance and suggestions made by any employee regarding our safety procedures;
- Hold a minimum of one safety committee meeting per month and forward the meeting minutes to the Safety department;
- Develop a written agenda for conducting meetings. The agenda should prescribe the order in which committee business will be addressed; and
- Hold special meetings when warranted or after lost time accidents. Project Management shall:
- Ensure safety committee meetings are being held on a regular basis;
- Respond to any safety committee recommendations, in writing, within a reasonable amount of time;
- Serve as members of the safety committee; and
- Establish a democratic system for nomination and election of committee chairperson and co-chairperson.

Employees shall:

- Serve as members of the safety committee; and

- Elect their peers to the safety committee.

17.3 Procedure

The Safety Committee shall be comprised of:

- No fewer than two members for any job of twenty or less employees;
- No fewer than four members for any job of twenty or more employees;
- Management should be represented on the Committee for all trades;
- A chairperson elected by the committee members that is a representative; and cross-section representative of the major work activities and shall include subcontractors.

Safety Committee activities include but are not limited to:

- Holding regular meetings at least once a month;
- Holding special meetings when warranted or after any lost time accident;
- Actively involve all employees in the jobsite safety and health program;
- Establishment of a system for members to obtain safety related suggestions, reports of hazards or other information directly from all persons involved in the operations on the jobsite. The information obtained must be reviewed at the next committee meeting and shall be recorded in the minutes for necessary review and action by supervision;
- Assisting management in evaluating our accident and illness prevention program and make written recommendations to improve the program, where applicable;
- Establish procedures for workplace inspections by the safety committee inspection team to locate and identify safety, health and environmental hazards;
- Conduct workplace inspections at least quarterly;
- Recommend to supervision how to eliminate hazards and unsafe work practices at the jobsite;
- Form an inspection team comprised of Supervision and employee representatives. This team will submit reports with location and identity of hazards and review inspection reports and correspondence.

17.4 Training

All safety committee members will be trained in topics including but not limited to:

- Applicable OSHA and DBJV safety rules.

18 Inspection Procedures

The DBJV Safety Department will undertake the following types of inspections:

18.1 Compliance Site Inspections

The Safety Department will carry out a compliance audit for all sections of the entire project site.

Utilizing the DBJV Inspection Report Form “Daily Safety Assessment” (Appendix C-6) or equivalent format, the safety department will carry out a full compliance audit of the project.

The observations of the inspection can be a general or a focused inspection on part or all of the project, a crew, or on particular subject matter. Inspections will focus upon high-risk categories (Falls, Struck by, Caught In-Between, and Electrical) as well as all other applicable site safety requirements and federal and state laws.

Results of such audits will be sent to the Senior Management for review.

The findings will be provided to the Subcontractor and where necessary corrective actions will be taken based upon the audit.

18.2 Focused Inspections

The Safety Managers will complete focused inspections. It will focus on safe verses unsafe acts of a particular hazard. By focusing on the behaviors present, we can hopefully change the way business is completed each day with a heightened awareness on the safety and well-being of all employees on the project. This inspection will be used to enable subcontractors to focus on elimination of unsafe behaviors and this inspection will be supported by an injury elimination campaign.

18.3 Daily Inspections

OSHA required daily use inspections of tools, equipment and PPE will be done by trained individuals of all tiered subcontractors.

18.4 Leading Indicator Audits

DBJV will assist with leading indicator audits as part of an overseeing role in ensuring audits are being carried out.

19 Acknowledgement and Appreciation Program

19.1 Purpose

The purpose of this program is to reduce incidents by constructively using acknowledgement and appreciation to recognize employees for safe acts of behavior.

19.2 Responsibilities

Project team:

- Develop and institute acknowledgement and appreciation Programs;
- Review all project level Safety acknowledgement and appreciation Programs before they are instituted.
- Recognize and appreciate employees for safety suggestions or man hour milestone

19.3 Procedure

The acknowledgement and appreciation program will be administered by Safety Department.

20 Stop Work Program

20.1 Stop Work Criteria:

- Conditions exist that pose an imminent danger to the health and safety of workers or the public;
- Conditions exist, that if allowed to continue, could adversely affect the safe operation of, or could cause serious damage to, the facility; or
- Conditions exist, that if allowed to continue, could result in the release from the facility to the environment of radiological, chemical or Storm water effluents that exceed applicable regulatory requirements or approvals.

The following definitions shall be used in conjunction with the above stated criteria:

- Imminent Danger: Any condition or practice such that a hazard exists that could reasonably be expected to cause death, serious physical harm, or other serious hazard to employees, unless immediate actions are taken to mitigate the effects of the hazard and/or remove employees from the hazard.
- Adversely Affects Safe Operation of Facility or Serious Facility Damage: A condition, situation or activity that if not terminated or mitigated could reasonably be expected to result in a criticality; facility fire/explosion; major facility or equipment damage or loss; or, a facility evacuation response.

20.2 Policy and Program Overview

This program formally establishes the Stop Work Authority (SWA) for all DBJV Employees and contractors to suspend individual tasks or group operations when the control of H&S risk is not clearly established or understood.

It is the policy of DBJV:

- All employees have the authority and obligation to stop any task or operation where concerns or questions regarding the control of Health, Safety exist.
- No work will resume until all stop work issues and concerns have been adequately addressed.
- Any form of retribution or intimidation directed at any individual or company for exercising their authority as outlined in this program will not be tolerated.
- As with any policy, accountability for non-compliance will follow established company procedures or contract requirements.

20.3 Roles and Responsibilities

Persons in the following roles have responsibilities in support of this program:

DBJV employees:

- Initiate a “stop work” intervention when warranted
- Support the intervention of others
- Properly report all “stop work” actions. Supervisors
- Create a culture where SWA is exercised freely
- Honor request for ‘stop work’
- Work to resolve issues before operations resume
- Recognized proactive participation
- Ensure that all “stop work” actions are properly reported with required follow-up completed.

Senior Management:

- Establish the clear expectation to exercise SWA
- Create a culture where SWA is exercised freely
- Resolve SWA conflicts when they arise
- Hold those accountable that chose not to comply with established SWA policies

The Safety Department:

- Monitoring compliance with the requirements of this program
- Maintenance of associated documents
- Processes and training materials
- Identification of trends
- Sharing of lessons learned and publication though use of the Daily Flash

20.4 Intervention Protocol

In general terms, the SWA process involves a stop, notify, correct and resume approach for the resolution of a perceived unsafe work actions or conditions.

Much like behavior based safety processes, a workforce that clearly understands how to initiate, receive and respond to a “stop work” intervention is more likely to participate. Though obvious to some, the following protocol creates an environment where people know how to act and respond. When an unsafe condition is identified, the Stop Work Intervention will be initiated, coordinated through the supervisor,

initiated in a positive manner, notify all affected personnel and supervision of the stop work. Our goal is an Incident Injury Free workplace. Identify the issue, correct the issue, and resume work when safe to do so.

Though situations may differ, the following steps should be the framework for all stop work interventions.

20.5 Protocol Instruction

- When a person identifies a perceived unsafe condition, act, error, omission, or lack of understanding that could result in an undesirable event, a “stop work” intervention shall be immediately initiated with the person(s) potentially at risk.
- If the supervisor is readily available and the affected person(s) are not in immediate risk, the “stop work action” should be coordinated through the supervisor. If the supervisor is not readily available or the affected person(s) are in immediate risk, the “stop work” intervention should be initiated directly with those at risk.
- “Stop work” interventions should be initiated in a positive manner by briefly introducing yourself and starting a conversation with the phrase “I am using my stop work authority” because using this phrase will clarify the user’s intent and set expectations as detailed in this procedure.
- Notify all affected personnel and supervision of the stop work issue. If necessary, stop associated work activities, remove person(s) from the area, stabilize the situation and make the area as safe as possible.
- All parties shall discuss and gain agreement on the stop work issue.
- If determined and agreed that the task or operation is OK to proceed as is (i.e., the stop work initiator was unaware of certain facts or procedures) the affected persons should thank the initiator for their concern and proceed with the work.
- If determined and agreed that the stop work issue is valid, then every attempt should be made to resolve the issue to all affected person’s satisfaction prior to the commencement of work.
- If the stop work issue cannot be resolved immediately, work shall be suspended until proper resolution is achieved. When opinions differ regarding the validity of the stop work issue or adequacy of the resolution actions, the location’s “person in charge” shall make the final determination. Details regarding differences of opinion and resolution actions should be included in the documented report.
- Positive feedback should be given to all affected employees regarding resolution of the stop work issue.
- Under no circumstances should retribution be directed at any person(s) who exercise in good faith their stop work authority as detailed in this program.

- All stop work interventions and associated detail shall be documented and reported as detailed in this program.

20.6 Reporting

All “stop work” interventions exercised under the authority of this program shall be documented as a near miss, utilizing existing reporting protocols. The near miss report shall contain the words “STOP WORK” at the beginning of the incident description in order to differentiate it from traditional near miss reports.

“STOP WORK” reports shall be reviewed by supervisors in order to:

- Measure participation
- Determine quality of interventions and follow-up.
- Trend common issues and identify opportunities for improvement.
- Facilitate sharing of lessons learned.
- Feed recognition programs.

The Safety Department will regularly publish incident details regarding the number of “stop work “actions reported by location as well as details regarding common trends, corrective measures, and lessons learned.

20.7 Follow Up

It is the desired outcome of any ‘stop work’ intervention that the identified safety concerns be addressed to the satisfaction of all involved persons prior to the resumption of work. Although most issues can be adequately resolved in a timely fashion at the job site, occasionally additional investigation and corrective actions may be required to identify and address root causes. “Stop Work” interventions that required additional investigation or follow-up will be handled utilizing existing protocols and procedures for incident investigation and follow-up.

Stop Work reports shall be reviewed by supervision order to measure participation, determine quality of interventions and follow-up, trend common issues, identify opportunities for improvement, and facilitate sharing of lessons learned.

20.8 Recognition

In order to build and reinforce a culture in which SWA is freely exercised and accepted, line supervisors are encouraged to positively recognize employee and subcontractor participation in the program.

Minimally, each supervisor should informally recognize individuals when they exercise their authority to “stop work” or demonstrate constructive participation in a “stop work” intervention.

This informal recognition need be no more than an expression of appreciation for a job well done or the awarding of a nominal item (hat, gloves, flashlight, gift certificates, etc.) of recognition.

Additionally, formal recognition of selected examples of “stop work” interventions and those responsible should be made during regularly scheduled safety meetings.

The Safety Department will regularly publish selected “stop work” actions that occurred throughout the company, recognizing those responsible for their support of the SWA program and contribution to the Safety & Health continuous improvement journey.

20.9 Training

Training regarding this SWA Policy and Program will be conducted as part of all new employee and contractor orientations.

Additionally, a review of the SWA Policy shall be completed as part of all field location safety briefings and regularly in safety meetings.

Documentation of all training and reviews shall be maintained as per established procedures

20.10 Training Speaking Points

Remember this is a request! We are asking for them to participate in our Safety program. We are asking all of our employees to participate in making our work sites “Incident and Injury Free”.

There are 2 specific objectives:

- To immediately stop work if there is imminent danger in their view.
- Participate in safety discussions.

The purpose is to help develop a relationship of trust between management and hourly employees. Being for each other means, we need to understand the difference between knowing there are people working here and knowing who those people are.

To address fear of reprimand and retaliation.

To request them to be committed to Home Safe Tonight.

Home Safe Tonight is a mindset that changes from compliance to care and concern. This is not about following rules as much as looking for things that need to be better.

21 Cell Phone Program

21.1 Purpose

DBJV shall provide communication technology capabilities for specific employees to help them remain productive and safe. When employees are entrusted with any technology, it is their responsibility to utilize it in a safe prudent manner that in no way jeopardizes their safety or that of other employees and the motoring public, this includes protection of equipment, facilities and other materials.

It is essential that when a conflict exists between safety and the utilization of an in-vehicle cell phone whether in auto or heavy equipment, safety must receive top priority. Similarly workers who in their day to day work are involved in construction using tools, working at heights, working around mechanized equipment need to have all senses focused on the work area. Cell phones or tablet devices can easily distract from the day to day work activities and can very easily lead to a serious accident. Therefore all employees using such devices in automotive vehicles or heavy equipment, company owned or rented, or working on a project site must receive, read and comply with this program.

21.2 Responsibilities

- All employees shall comply with the Cellular Phone and Computer Program.
- Under no circumstances shall any employee be permitted to operate a DBJV vehicle or a piece of heavy equipment without a Hands-free cell phone.
- Hands-free products will be given to all employees who have been assigned a DBJV owned cellular phone.
- Any employees working on specific job projects will receive, upon request, their Hands-Free kits from the Project supervision on that site.
- Project supervision is responsible for purchasing appropriate hands-free products for company owned cellular phones with the approval of the Project Director.

21.3 General Duties

- All employees, while operating a DBJV piece of heavy equipment or vehicle, whether company owned or rented, shall utilize a cell phone hands free product, whether portable or permanently installed in a vehicle or piece of equipment.
- Any traffic violation, or fine issued to the cell phone user due to not complying with this program will be the responsibility of the cell phone user, and not DBJV.
- Use of personal cell phones during normal work hours on the project work site is not permitted.

- Compliance with this program is mandatory and anyone operating an automotive vehicle or a piece of heavy equipment whether company owned or rented not in strict accordance with this program will be reprimanded for failure to comply with the stated program.

21.4 Worksite Personal Cell Phones / iPods / Radios

- Use of personal cell phones / iPods / radios shall not be permitted during normal work hours while on Project Worksites or when operating any equipment / machinery upon such sites.
- The use of personal cell phones shall be limited to designated breaks and lunch periods.
- During work personal cell phones shall be set to forward calls to a mail box where later they can be retrieved at an appropriate time as stated. Such break times are beginning of shift, morning coffee break and lunch or after the shift is ended.
- If there is an emergency, and someone needs to reach you, have them call the site or office and your supervisor will contact you.

21.5 Vehicle Cell Phones

- As stated cell phones when used in company vehicles shall be hands free. This shall include employees under any car allowance program. Speed dial, ear pieces, blue tooth technology and speaker phones all aid in hands free use of a cell phone while driving a vehicle on company business.
- However it is documented that the act of conversation on a phone affects a driver's attentiveness to the function of driving a vehicle. Therefore the following guidelines should be practice by drivers and by persons calling people who may be driving at the time of placing a phone call:
    - Drivers whenever receive an incoming call, the phone call, shall go to voice mail in order to call back at a more appropriate time.
    - When calling a person ask the question. Are you driving? If the conversation requires concentration on the driver's part then identify a time when the conversation can be held
    - Drivers whenever possible should plan phone calls while at stationary locations.
    - If driving and the conversation requires concentration then pull over and find a safe place to park and make the call.

22 Aerial Work Platforms

22.1 Purpose

The purpose of this program is to establish safe working practices for our employees working on or around aerial / man lifts. Aerial / man lifts, including extension boom platforms, aerial ladders, articulating boom platforms and vertical towers are covered by this program.

Applicable Regulations - OSHA 29 CFR 1926.453

22.2 Responsibilities

Project Management shall:

- Train employees in the requirements identified in this program before they operate a man lift or scissor lift
- Ensure employees are performing daily visual inspections on aerial / man lifts or scissor lifts
- Ensure employees are operating man lifts or scissor lifts safely. Operators shall:
- Operate safely; man lifts and scissor lifts
- Perform daily visual inspections prior to operating a man lift or scissor lift

22.3 Procedure

Aerial /Man lifts:

- Only authorized personnel are allowed to operate aerial man lifts;
- The employee will be required to do a “daily visual” inspection as per the manufacturer of the equipment
- An approved fall restraint system shall be worn by the employee. A full body harness and lanyard shall be used and shall be tied off at all times while operating the machine; Anchoring to adjacent poles or structures outside of the basket is not permitted when operating the equipment
- The anchor points within the lift will be identified as per manufacturer documents of 5000 lbs.

- Designated operators will be held accountable for the safe operation of the man lift they are assigned to. If the man lift is operated in an unsafe manner, the operator will be subject to discipline up to and including termination;
- Employees shall always stand firmly on the platform of the man lift. An employee will never stand or climb on the edge of the platform, or use any type of ladder, plank or other device as a work positioning system;
- An aerial boom lift truck shall not be moved when the boom is extended in a working position and employees are in the platform, unless the equipment has been specifically designed for this purpose;
- The insulating portion of a man lift shall not be altered, or integrity compromised in any way to reduce its insulating value.
- Field modifications shall not be made to the equipment unless the modification has been certified in writing by the manufacturer.
- Boom and basket load limits specified by the manufacturer shall not be exceeded
- The equipment shall have a working reverse signal alarm audible above surrounding noise levels
- Where required a spotter shall be used to help signal equipment maneuvers
- Equipment shall at a minimum be 10 feet clearance from any power lines

Daily Visual Inspections: Shall be conducted at the beginning of each shift

- Look at the overall appearance of the machine;
- Check the boom for cracks or dents;
- Inspect inside the engine compartment;
- Check engine, fuel and hydraulic oil levels;
- Look for leaking oil on/under the machine;
- Note conditions of tire and wheel assemblies;
- Check operation of ground control panel and manual override;
- Check structural condition of basket and mounting pins, bolts, etc;
- Clean out rags and debris from the basket;
- Check brakes and operating systems and controls are in safe condition
- Read and understand warning and caution decals on machine;
- Familiarize yourself with the controls, including the emergency override controls;
- Never mechanically block the foot control or dead men controls; and
- Do not attempt to operate the man lift that is not functioning properly. Tag it out of service and report it to a supervisor

Scissor Lifts:

- Only authorized personnel are allowed to operate scissor lifts

- • The employee will be required to do a “daily visual” inspection as per the manufacturer of the equipment;
- Scissor lifts will be operated on firm, level ground for which it has been designed;
- Load capacities for the lift shall not be exceeded;
- Load capacities shall not be exceeded for any reason while hoisting materials in scissor lift, and we shall always follow manufacturers guidelines;
- An approved fall restraint system shall be worn, A Full body harnesses and lanyard are required to be worn in scissor lifts, and Employees shall tie off to the appropriate anchor point if provided in the lift at all times. Anchoring to adjacent poles or structures outside of the basket is not permitted when operating the equipment
- The anchor points within the lift will be identified as per manufacturer documents of 5000 lbs.
- Designated operators will be held accountable for the safe operation of the scissor lift they are assigned to. If the scissor lift is operated in an unsafe manner, the operator will be subject to discipline up to and including termination;
- Employees shall always stand firmly on the platform of the scissor lift. An employee will never stand or climb on the edge of the platform, or use any type of ladder, plank or other device as a work positioning system;
- Field modifications shall not be made to the equipment unless the modification has been certified in writing by the manufacturer
- Boom and basket load limits specified by the manufacturer shall not be exceeded
- Where required a spotter shall be used to help signal equipment maneuvers
- Equipment shall at a minimum be 10 feet clearance from any power lines

Daily Visual Inspections: Shall be conducted at the beginning of each shift

- Look at the overall appearance of the machine;
- Check for cracks or dents;
- Inspect inside the engine compartment;
- Check engine, fuel and hydraulic oil levels;
- Look for leaking oil on/under the machine;
- Note conditions of tire and wheel assemblies;
- Check operation of control panel and manual override;
- Check structural condition of basket and mounting pins, bolts, etc;
- Clean out and debris from the platform
- Read and understand warning and caution decals on machine;
- Familiarize yourself with the controls, including the emergency override controls;
- Check brakes and operating systems and controls are in safe condition
- Never mechanically block the foot control or deaden controls;
- Do not attempt to operate a scissor lift that is not functioning properly. Tag it out of service and report it to a supervisor

22.4 Training

General:

- All employees required to use an aerial man lift or scissor lift will be require training on lift manufacturer unit;
- The superintendent or designee must observe the employee while the employee operates the machine to ensure that they possess the skill with the machine to operate it safely.
- Topics:
- Safe operation of man lifts or scissor lifts;
- Hazards associated with the operation of man lifts; or scissor lifts;
- Inspection Criteria;
- How to conduct a daily visual inspection of the machine to which they are assigned.

23 Concrete and Masonry

23.1 Purpose

The purpose of this program is to establish safe working guidelines when using or performing work with concrete and masonry products.

Applicable Regulations: OSHA 29 CFR 1926.700-70

23.2 Responsibilities

Project Management shall:

- Enforce the details of this program;
- Train employees in the hazards of concrete operations including pouring operations and precast concrete operation

Employees Shall:

- Adhere to the requirements of this program

23.3 Concrete Hazards

Health Hazards:

- Working with concrete products such as cement or mortar is dangerous because of the high concentration of lime. When in contact with skin for prolonged periods, these products absorb moisture from the skin and body causing them to dry out, harden and crack. At the same time, concrete can cause a chemical burns that results in raw sores prone to infection;
- People whose skin tends to sunburn, dry out or crack easily, have a higher risk for concrete burns and must take extra precautions when working around concrete;
- Concrete that soaks into clothing or spills into rubber boots must be paid special attention to because of how dangerous it is;

- Friction caused by sand in the concrete can irritate and expose sensitive skin allowing a severe chemical burn to develop more quickly;
- Workers must wash themselves and change clothes, gloves, and boots immediately if they become soaked. (A mild soap containing lanolin may ease further injury to sensitive skin);
- Any exposed skin should be protected with barrier cream;
- Water must be available to wash concrete off the skin before it can burn. Vinegar or a commercial neutralizer can be used to counteract the burning effect;
- Eyecups and eyewash must also be kept near a concrete pour;
- All concrete burns must be reported and treated immediately. Do not under estimate the seriousness of a concrete burn, minor irritations can become serious infections before you realize what has happened.

Physical Hazards:

- When placing concrete, make sure the ground will support the loaded concrete truck or pump truck;
- Check for buried tanks, shallow sewers and utilities, or loosely back-filled trenches and basements;
- Trucks should stay away from excavated areas where their vibration and weight can cause shifting unstable excavated areas;
- Concrete weighs 150 pounds per cubic foot. Our employees must maintain stable footing and good balance to avoid strains and sprains from over-lifting or shoveling;
- Use caution when unfolding or attaching concrete truck chutes; make sure they are tied off properly to prevent wild jolts and that open chutes are anchored properly before releasing concrete;
- Always provide access across rebar prior to concrete placement. Planks routed to access points will prevent falls between the rebar that result in ankle, knee and back injuries.

23.4 Procedure

General Requirements:

- No construction load shall be placed on a concrete structure until it has been determined that it can support the load;
- All protruding reinforcing steel, onto which employees could fall, shall be guarded to eliminate the hazard of impalement;
- No employee, other than those essential to the work, shall be permitted behind the jack during tensioning operation; signs and barriers shall be erected to limit employee access;
- No employee shall be allowed to ride on a concrete bucket;
- Elevated concrete buckets shall be routed so that no employees are exposed to hazards associated with falling concrete buckets; and
- No employee shall be permitted to work under concrete buckets while buckets are being elevated or lowered.

Equipment and Tools:

- Concrete mixers with one cubic yard or larger loading skips shall be equipped with a mechanical device to clear the skip of materials and guardrails installed on each side of the skip;
- Powered and rotating type concrete troweling machines that are manually guided shall be equipped with a control switch that will automatically shut off the power whenever the hands of the operator are removed from the equipment handles;
- Concrete buggy handles shall not extend beyond the wheels on either side of the buggy;
- Concrete pumping systems using discharge pipes shall be provided with pipe supports designed for 100 percent overload;
- Concrete buckets equipped with hydraulic or pneumatic gates shall have positive safety latches;
- Concrete buckets shall be designed to prevent concrete from hanging up on top and the sides;
- Sections of tremies and similar concrete conveyances shall be secured with wire rope (or equivalent materials) in addition to the regular couplings or connections;
- Bull flat handles shall be constructed of nonconductive material or insulated with a nonconductive sheath;
- Masonry saws shall be guarded with a semicircular enclosure over the blade. A method for retaining blade fragments shall be incorporated in the design of the semicircular enclosure; and
- No employee shall be permitted to perform maintenance or repair on equipment where the inadvertent operation of the equipment could occur and cause injury, unless all potentially hazardous energy sources have been locked out and tagged.

23.5 Cast-In-Place Concrete

General:

- Drawings or plans, including all revisions, for the jack layout, formwork (including shoring equipment), working decks and scaffolds, shall be available at the jobsite;
- All shoring equipment (including equipment used in re-shoring operations) shall be inspected prior to erection;
- Erection shoring equipment shall be inspected immediately prior to, during and immediately after concrete placement. If it is found damaged, it shall be immediately reinforced;
- The sills for shoring shall be sound, rigid, and capable of carrying the maximum intended load;
- All base plates, shore heads, extension devices, and adjustment screws shall be in firm contact, and secured when necessary, with the foundation and the form;
- Eccentric loads on shore heads and similar members shall be prohibited unless these members have been designed for such loading;
- Whenever single post shores are used on top of another (tiered):
- A qualified designer shall prepare the design of the shoring and an engineer qualified in structural design shall inspect the erected shoring;

- The single post shores shall be vertically aligned, be spliced to prevent misalignment, and adequately braced in two mutually perpendicular directions at the splice level. Each tier shall also be diagonally braced in the same two directions.
- Adjustments of single post shores to raise formwork shall not be made after the placement of concrete; and
- Re-shoring shall be erected, as the original forms and shores are removed, whenever the concrete is required to support loads in excess of its capacity.

Vertical Slip Forms

- Formwork shall be designed, fabricated, erected, supported, braced and maintained so that it will be capable of supporting, without failure, all vertical and lateral loads anticipated to be applied to the formwork;
- The steel rods or pipes on which jacks climb or by which the forms are lifted shall be specifically designed for that purpose, and adequately braced where not encased in concrete;
- Forms shall be designed to prevent excessive distortion of the structure during the jacking operation;
- All vertical slip forms shall be provided with scaffolds or work platforms where employees are required to work or pass;
- Jacks and vertical supports shall be positioned in such a manner that the loads do not exceed the rated capacity of the jacks;
- The jacks or other lifting devices shall be provided with mechanical dogs or other automatic holding devices to support the slip forms whenever failure of the power supply or lifting mechanism occurs;
- The form structure shall be maintained with all design tolerances specified for plumbness during the jacking operation; and
- The predetermined safe rate of lift shall not be exceeded. Reinforcing Steel:
- Reinforcing steel for walls, piers, columns, and similar vertical structures shall be adequately supported to prevent overturning and to prevent collapse; and
- Measures shall be taken to prevent unrolled wire mesh from recoiling. Removal of Formwork:
- Forms and shores (except those used for slabs on grade and slip forms) shall not be removed until it has been determined that the concrete has gained sufficient strength to support its weight and superimposed loads; and
- Reshoring shall not be removed until the concrete being supported has attained adequate strength to support its weight and all loads in place upon it.

23.6 Precast Concrete Erection

General:

- Precast concrete wall units, structural framing, and tilt-up wall panels shall be adequately supported to prevent overturning and to prevent collapse until permanent connections are completed;
- Lifting inserts which are embedded or otherwise attached to tilt-up precast concrete members shall be capable of supporting at least two times the maximum intended load applied or transmitted to them;
- Lifting inserts which are embedded or otherwise attached to precast concrete members, other than the tilt-up members, shall be capable of supporting at least four times the maximum intended load applied or transmitted to them;
- Lifting hardware shall be capable of supporting at least five times the maximum intended load applied or transmitted to the lifting hardware; and
- No employee shall be permitted under precast concrete members being lifted or tilted into position except those employees required for the erection of those members.

Lift Slab Requirements:

- All lift slab operations shall be designed by a Registered Professional Engineer with experience in this field.

23.7 Masonry Construction Requirements

A limited access zone shall be established whenever a masonry wall is being constructed. The limited access zone shall:

- Be established prior to the start of construction of the wall;
- Be equal to the height of the wall to be constructed plus four feet, and shall run the entire length of the wall;
- Be established on the side of the wall that does not have a scaffold;
- Be restricted to entry by employees actively engaged in constructing the wall; and
- No other employees shall be permitted to enter the zone; and remain in place until the wall is adequately supported.

24 Confined Space

24.1 Purpose

The purpose of this program is to protect our employees from the hazards associated with Permit Required Confined Spaces on our job sites. We will take the necessary steps to correctly evaluate confined spaces and permit required confined spaces in order to safely enter and perform our work. DBJV employees or Contractor workers must not enter any tank, tunnel, manhole, vessel or vault without completing a "Confined Space Entry Permit" (See Appendix C-15) and following the confined space entry procedures of your company and project requirements.

All employees taking part in an entry will be trained according to the requirements of this program.

Applicable Regulations

OSHA 29 CFR 1926.21

OSHA 29 CFR 1910.146

24.2 Definitions Applicable to this Program

Attendant:

Is an individual stationed outside one or more permit space(s) who monitors the authorized entrants and who performs all assigned attendant's duties.

Authorized entrant:

Is one who is authorized by the supervisor to enter a permit space.

Confined Space:

A space that is:

- Large enough and so configured that an employee can bodily enter and perform work;
- Has limited or restricted means for entry and exit; **and**
- Is not designed for continuous human occupancy

Double block and bleed:

Means the closure of a line, duct, or pipe by closing and locking or tagging two in- line valves and by opening and locking or tagging a drain or vent valve in the line

between the two closed valves.

Emergency:

Means any occurrence or event, internal or external to the permit space that could endanger entrants.

Entry:

Means the action by which a person passes through an opening into a permit- required confined space.

Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening in the space.

Acceptable entry Conditions:

Must exist in a permit space to allow entry and to ensure that employees involved with permit-required space entry can safely enter into and work within the space.

Entry supervisor:

Is the person responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required

Hazardous atmosphere:

An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following causes:

- Flammable gas, vapor, or mist in excess of 10% of its lower flammable limit (LFL)
- Airborne combustible dust at a concentration that meets or exceeds its LFL

or obscures vision at a distance of five (5) feet;

- Atmospheric oxygen concentration below 19.5% or above 23.5%; and
- Atmospheric concentration of any substance at or above its published PEL.

An example Hydrogen Sulfide (H2S) This is a toxic, colorless substance, with the odor of rotten eggs at low concentrations, and is soluble in water. Its effects on the body are eye irritations, nerve centers of the brain which control breathing, It desentatizes the nose sense of smell above 30 PPM Personal air monitoring detectors are set at 10 PPM to give early warning of H2S.

Hot work permit:

Is the written authorization to perform operations capable of providing a source of ignition such as riveting, welding, cutting, burning, etc.

Immediately dangerous to life or health (IDLH):

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

Inerting:

Is the displacement of an atmosphere in a permit space by a noncombustible gas such as nitrogen, to such an extent that the resulting atmosphere is noncombustible.

Isolation:

Is the process by which a permit space is removed from service and completely protected against the release of energy and material into the space by such means as, blanking or blinding, misaligning or removing sections of lines, pipes, or dusts, a double block and bleed system, lockout / tagout all mechanical linkages.

Line breaking:

Is the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury

Non-permit confined space:

Means a confined space that does not contain, or with respect to atmospheric hazards, have the potential to contain any hazard capable to causing death or serious harm.

Oxygen deficient atmosphere:

Is an atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen enriched atmosphere:

Is an atmosphere containing more than 23.5 percent oxygen by volume.

Permit required confined space:

A space that meets all three criteria of a confined space and that has one or more of the following characteristics:

- Contains or has the potential to contain a hazardous atmosphere;
- Contains a material that has the potential for engulfing an entrant;
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section. Examples are a Wet well, tank, vat. Pipeline, silo, etc.

Permit system:

Means written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

Testing:

Is the process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

24.3 Responsibilities

Project Management shall:

- Evaluate worksites for the presence of Permit Required Confined Space;
- Inform employees of the presence and location of Permit Required Confined Spaces on the work site;
- Mark Permit Required Confined Spaces with signs reading “Danger – Permit Required Confined
- Space – Do not Enter”;

- Implement the measures necessary to prevent unauthorized entry;
- Train all employees who take part in the entry operations in the requirements of this program;
- Provide all equipment necessary for safe entry into and rescue from Permit Required Confined
- Spaces;
- Establish space specific, written procedures for Permit Required Confined Space entry.
- Designate the persons who have active roles in entry operations, such as, authorized entrants, attendants, entry supervisors, or persons who test and monitor the atmosphere in a permit space.
- NOTE: Identify the duties of each employee, and provide each employee with the required training;
- Develop and implement emergency procedures, including, emergency services, rescuing entrants from permit spaces, for providing necessary emergency services to rescued employees, and for preventing unauthorized personnel from attempting a rescue;
- Evaluate rescue services. An evaluation Rescue services shall include the following:
- Rescue services provided by the host facility
- Rescue services provided by an outside service which shall be given an opportunity to examine the entry site, practice rescue and decline as appropriate.
- Provided by the employer a rescue team that is equipped and trained to perform the needed rescue services
- Develop and implement a system for the preparation, issuance, use, and cancellation of written entry permits as required;
- Request a review of entry operations when they believe that the measures taken under the permit space program may not protect employees. Then revise the program to correct the deficiencies before subsequent entries are authorized; and
- Review the permit-required confined space program annually by using the retained canceled permit.
- Coordinate entry operations for multi employers so that employees of one employer do not endanger the employees of any other employer

- Shall re-evaluate the space when an employee uses their voice or invokes the stop work authorization program.
- When IDLH conditions are present no one shall enter the confined space and alternative means and methods shall have be defined.

Authorized Entrants shall:

- Not enter Permit Required Confined Spaces unless authorized to do so;
- Follow all entry procedures including but not limited to:
    - Verification of acceptable entry conditions;
    - Continuous air monitoring;
    - Implementation of forced air ventilation;
    - Proper use of equipment required;
    - Communication with attendant and other entrants; and

- Any other procedures deem necessary for safe operations.

- Alert attendant when:
  - He or she recognizes any warning sign or symptom of exposure to a hazard; or
  - He or she detects a prohibited condition.
- • Exit the Permit Space immediately when:
  - An order to evacuate is given by the attendant or the entry supervisor;
  - He or she recognizes any warning sign or symptom of exposure to a hazard;
  - He or she recognizes detects a prohibited condition; or
  - An evacuation alarm is sounded.
- Entrants must participate in the permit review and signing. Ventilation must be used and testing conducted before entry and during work. Entrants shall be informed of the potential hazards and results as part of the permit review process

Authorized Attendant(s) shall:

- Follow all entry procedures including, but not limited to:
  - Verification of acceptable entry conditions;
  - Continuous air monitoring;
  - Implementation of forced air ventilation;
  - Communication with entrants; and
  - Any other procedures deemed necessary for safe operations.
- Continuously maintain an accurate count of authorized entrants in the permit space, noting time of entry and exit;
- Take the following actions when unauthorized persons approach or enter a permit space while entry is in progress:
  - Warn the unauthorized person(s) that they must stay away from the permit space;
  - Advise the unauthorized persons that they must exit immediately, if they have entered the permit space; and
  - Inform the authorized entrants and the entry supervisor if an unauthorized person(s) has entered the permit space.

- Monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space and orders the authorized entrants to evacuate the permit space immediately under any of the following conditions:
  - If the attendant detects a prohibited condition;
  - If the attendant detects the behavioral effects of hazard exposure in an authorized entrant;

    - If the attendant detects a situation outside the space that could endanger the authorized entrants; or
    - If the attendant cannot effectively and safety perform all the required duties.
- Conduct air monitoring and enter the results on the air-monitoring log throughout the duration of the entry;
- Remain outside the permit space during entry operations until reviewed by another approved attendant;
- Summon rescue and other emergency services as soon as he/she determines that authorized entrants may need assistance to escape from permit space hazards; and
- Perform non-entry rescues with retrieval equipment.

Entry Supervisor shall:

- Coordinate the entry and establish entry procedures including, but not limited to:
    - Evaluation of the permit space to determine known and potential hazards;
    - Identification of acceptable entry conditions;
    - Select appropriate equipment (retrieval, personal protective equipment, air monitors etc.) based on hazards in the permit space;
    - Verifying that rescue services are available and the means for summoning them are operable; and
    - Assigning qualified and trained individuals as authorized entrants and attendants.
- Verify, by checking, that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin;
- Terminate the entry and cancel the permit:
    - When a prohibited condition is detected;
    - When a condition that is not allowed under the entry permit criteria arises inside or near the Permit Required Confined Space; or
    - When operations covered by the entry permit have been completed.
- Ensure all Material Safety Data Sheets (SDS) for hazardous chemicals involved with entry are kept available for emergency personnel in the event an employee must receive treatment for overexposure to a substance;
- Remove unauthorized persons who enter or who attempt to enter the permit required confined space during entry operations; and
- Determine when responsibility for a permit required confined space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space, when entry operations remain consistent with the terms of the entry permit and acceptable entry conditions are maintained.

Rescue Services shall:

- Follow all procedures identified for safe entry according to this program.

24.4 Entry Procedures

Pre-entry Procedures:

- Effective methods for verifying that conditions in the permit space are acceptable for entry and during its duration
- Isolate the space and implement the measures necessary to prevent unauthorized entry;
- Evaluate the space to determine if it fits the definition of a permit required confined space;

NOTE: regardless of type of confined space, an air-monitoring log is to be filled out and maintained at the job site for inspection.

- If the space meets the requirements of a permit required confined space, test the space for atmospheric hazards in this order: oxygen content, combustible gases, vapors and dusts, and then for toxic gases and vapors Implement the means, procedures, and practices necessary for safe permit space entry operations, including, but not limited to the following:
    - Specifying acceptable entry condition;
    - Isolating the permit space;
    - Purging, inverting, flushing, or ventilating the permit space as necessary to eliminate or control atmospheric hazard (purging to be done for at least 30 minutes prior to retesting air quality).

NOTE: No employee shall be allowed to enter a confined space with an oxygen deficient or potentially toxic/explosive atmosphere, until contacting and receiving approval of Safety Supervisor or the Project Manager.

- Identification of work tasks to be performed in the space and their potential hazards;
- Selection of rescue and retrieval methods (if these functions will be performed by site personnel) or notification of proper emergency services who may be required to respond; and
- Selection of communication method based on configuration of space and work task to be performed.
- Provide the following equipment to employees, maintain the equipment properly, and ensure that employees use the equipment properly:
    - Testing and monitoring equipment;
    - Ventilation equipment needed to obtain acceptable entry conditions;

- Any necessary communications equipment;
- Personal protective equipment insofar as feasible engineering and work practice controls do not adequately protect employees;
- Lighting equipment needed to enable employees to see well enough to work safely and to exit the space quickly in an emergency;
- Barriers and shields as required for pedestrian, vehicle or other barriers as necessary to protect entrants from external hazards
- Rescue and emergency equipment needed to comply with this program, except to the extent that the equipment is provided by rescue services;
- Communication means or equipment; and
- Any other equipment necessary for safe entry into and rescue from permit required confined spaces.

Note Employees are entitled to request additional air monitoring at any time and must be given an opportunity to request the space be re-evaluated at any time.

Fill the pre-entry checklist and Entry Permit, post entry permit at entrance to space (permit must be authorized by the Supervisor before entry may begin); and

Ensure space attendant is at his/her post outside the space opening.

During Entry:

- Ensure continuous communication between attendant(s) and entrant(s) to monitor entrant(s) status;
- Attendant must remain outside the space for the duration of the entry unless relieved by another authorized attendant;
- Attendants shall only monitor one space at a time. One person Multi monitoring of more than one space is not permitted.
- Test or monitor the permit space as necessary to determine if acceptable entry conditions are being maintained;
- Evacuate the space immediately when:
- A prohibited condition is detected inside or outside the space;
- Entrant(s) exhibit signs of exposure to a hazard;
- When the order to evacuate is given; or
- When work in the space is concluded and occupation of the space is no longer necessary.

Post Entry:

- Remove all entrants and equipment from space;
- Cancel the permit and file it for program review; and
- Replace the cover, hatch, door etc. in space to prevent unauthorized entry.

24.5 Permit System

Before entry is authorized, the supervisor must complete the written entry permit before entry begins, the entry supervisor whose name appears on the written permit must sign the entry permit to authorize entry; The entrants and attendant shall participate in the permit review and signing and shall be informed of the potential hazards and results. The entrant shall participate in and review calibrated air monitoring data before entry occurs.

The completed written permit must be posted at the entry portal or by any other equally effective means, so that the entrants can confirm that pre-entry preparations have been completed;

The duration of the permit may not exceed the time required to complete the assigned task or job identified on the permit. Permits shall be valid for a period of eight hours of less;

The entry supervisor must terminate entry and cancel the entry permit when:

- The entry operations covered by the entry permit have been completed; or
- A condition that is not allowed under the entry permit arises in or near the permit space.

The supervisor must give the Safety Department each canceled entry permit, which will be maintained for one year to facilitate a review of the permit, required confined space program. If any problems are encountered during an entry operation, they must be noted on the permit so appropriate revisions can be made to the permit required confined space program. If no entry is performed during a 12 month period, no review is necessary

24.6 Training

General training requirements

- Each affected employee must be trained for the following situations
- prior to initial assignment
- prior to a change in assigned duties,
- if a new hazard has been created or special deviations have occurred
- Each affected employee certification shall include, employee name, trainer signature, dates of training and certification must be made available to employees.
- Training covering the rescuing of entrants shall cover first aid, and preventing unauthorized personnel from entering the confined space.
- All training shall be documented with Name of trainer, Name of employee being trained and date the training took place
- Employees must be made aware of site specific contingency and emergency plans as part of training

Authorized Entrants must be trained in:

- The hazards that may be faced during entry including the mode, signs or symptoms and consequences of exposure;
- The proper use of equipment for entry;
- Procedures for safe entry; and

- Their responsibilities according to this program.

NOTE: Trained and Authorized Entrants will be listed on the Entry Permit. Only those employees may enter the space.

Authorized Attendants must be trained in:

- The hazards that may be faced during entry including the mode, signs or symptoms and consequences of exposure;
- The behavioral affects of hazard exposure in authorized entrants;
- The proper use of equipment for entry including retrieval equipment if the Attendant will be required to perform non-entry rescue in the event of an emergency;
- Procedures for safe entry; and
- Their responsibilities according to this program.

NOTE: Trained and Authorized Attendants will be listed on the Entry Permit.

Entry Supervisors must be trained in:

- The hazards that may be faced during entry including the mode, signs, or symptoms and consequences of exposure;
- Procedures for safe entry;
- Procedures for verifying acceptable entry conditions as well as issuing the authorizing an entry permit; and
- Their responsibilities according to this program.

NOTE: Trained and Authorized Supervisors will be listed on the Entry Permit

Rescue and Emergency Services must be trained in:

- These requirements apply to supervisors who have employees enter permit required confined spaces to perform rescue:
    - The proper use of personal protective equipment necessary for making rescues into confined spaces;
    - Self contained breathing apparatus or airline respirators with escape SCBA shall be considered as part of rescue requirements where possible dangerous atmospheres could occur. An H2S atmosphere being one of them
    - Performing assigned rescue duties. Each member of the rescue team must also receive the training required of “authorized entrants”;

- Each member of the rescue team will practice making permit space rescues at least once every twelve months, by means of simulated rescue operations in which they remove dummies, mannequins, or actual persons from the permit space;
- Basic first-aid and CPR, at least one member of the rescue team must hold a current certification in both;

NOTE: Trained and Authorized Rescuers will be listed on the Entry Permit

- These requirements apply to DBJV Supervisors who allow sub- contractors to perform permit space rescue:
    - Inform the rescue team of the hazards that may confront them when called upon; and
    - Provide the rescue team with access to all permit spaces from which rescue may be necessary so the rescue team can develop appropriate rescue plans.

NOTE: Subcontractor Trained and Authorized Entrants will be listed on the Entry Permit.

24.7 Non-Entry Rescue

Application:

- To facilitate non-entry rescue, retrieval systems or methods must be used .The only circumstance retrieval equipment is not required is when its use would increase the overall risk of entry or would not contribute to the rescue of the entrant such as with confined spaces with side openings. Note: Side openings in a confined space are those within 3½ feet of the bottom.

Retrieval systems must meet the following requirements:

- Each authorized entrant must use a chest or full body harness, with the retrieval line attached at the center of the entrant's back near shoulder level, or above the entrant's head. Wristlets may be used in lieu of the chest or full body harness if the use of a full body harness is infeasible or creates a greater hazard. The wristlets must be the safest and most effective alternative in this case.
- The other end of the retrieval line must be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary.
- A mechanical device must be available to retrieve personnel from vertical type permit spaces more than five feet deep.

25 Cranes and Rigging

25.1 Purpose

The purpose of this program is to implement safe working procedures for working on or around cranes and rigging systems. This program will encompass not only company employees, but subcontractor crane requirements as well.

Applicable Regulations:

OSHA 29 CFR 1910.180

OSHA 29 CFR 1926.550

OSHA 29 CFR 1926.251

25.2 Responsibilities

Project Management shall:

- Ensure that operators of cranes meet the requirements of this program;
- Ensure that the manufacturer's, federal, state, local regulatory agency requirements are met in the operation and servicing of cranes and selection of operators;
- Ensure that cranes are operated safely according to the specifications of this program;
- Train employees designated to signal crane operators according to this program;
- Purchase crane hardware and rigging specific to corporate specifications; Job Superintendent shall:
- The job superintendent is responsible for ensuring that the manufacturer's, and regulatory agency requirements are met in the operation a servicing of cranes and selection of operators;
- Ensure that all rigging is used, maintained and stored by only trained, experienced and competent personnel.

Designated Operators shall:

- Only operate cranes to which they have been assigned;
- Operate cranes safely according to this program;
- Perform a daily visual inspection on the crane to which they are assigned;
- Practice good housekeeping in and around the crane to which they are assigned;
- Be responsible for maintaining inspection and service records as well as proper load charts and operators manual inside their crane.

25.3 General Requirements

All cranes to be brought on site and rental cranes will be checked in by a designated DBJV representative using the Mobile Crane Check-in Form (Appendix C-12) before they are released for service.

Designate specific responsibilities to include crane operators, and crane specific qualified persons. Reference Appendices C-19 and C-20 for designation forms.

Manufacturer's Requirements:

- The operator must read and understand the Operator's and Maintenance Manual supplied with and considered part of the machine;
- The operator must be skilled and experienced in the operation of cranes and must be thoroughly familiar with the controls, power system and capability of the specific model;
- At all times, operation of the machine must be in accordance with the capacity charts, rigging drawings, and wire rope chart applicable to that machine;
- Booms, jibs and pendants must be properly assembled and maintained as described in the
- Operator's and Maintenance Manual;
- The machine must receive regular maintenance and inspection as outlined in the Operator's and
- Maintenance Manual;

Operator's Requirements:

- Operators must make thorough daily visual inspections and repair any deficiency or replace any defective part impairing safe operation before continued use;
- Operators must practice good housekeeping on our cranes;
- Outriggers must be fully extended and tires lifted free of the ground before making any lifts;
- When traveling a crane, the load block must be tied back to the machine's rotating bed;
- When cranes are rigged with more than one line, the unused lines must be tied back using special double tieback cable;
- When traveling crawler cranes up and down slopes, use a tractor as an auxiliary brake;
- Use a signalman when traveling or maneuvering in tight quarters;

- When using two or more cranes for a single pick, careful planning is mandatory;
- Always try to use two cranes of the same manufacturer, size, model and rigging;
- Avoid swinging over people whenever possible;
- Use taglines to control loads;
- Use only one man to give standard crane signals;
- Never leave the cab with a load suspended;
- Do not leave the cab with the engine running;
- Attachments used with cranes shall not exceed manufacturer recommendations;
- Cranes must be located so that no part of the machine will come within 10 feet of high voltage lines, or as required by law;
- A hydraulic crane boom must be telescoped equally at all times;
- With hydraulic cranes, we discourage traveling with a load. Follow manufacturer guidelines;
- All cranes are to use the shortest boom possible for the work at hand;
- Use jibs only when inward reach is required, remove when not required;
- Purchase pendant lines only from the original equipment manufacturer;
- Handle all booms with nylon slings;
- Booms are to be repaired per manufacturer recommendations, but under no circumstances will a cord member be repaired;
- Purchase only wire rope recommended by the crane manufacturer; and
- Wire rope will be taken out of service when any of the following conditions exist:
    - In running ropes, six randomly distributed broken wires in one lay, or three broken wires in one strand in one lay;
    - Wear of one-third of the original diameter of outside wires;
    - Kinking or crushing resulting in distortion of the rope structure;
    - Evidence of any heat damage;
    - In standing ropes, such as pendants, more than one broken wire.

Regulatory Agency Requirements:

- Consult the agency holding jurisdiction on safe working rules for cranes, hoists and derricks in the area being worked for regulations that apply to that area; and
- This must include requirements of OSHA, state, city, and owner's regulations on type of work being done with crane, hoist, or derrick being used.

Subcontractor Requirements:

The following shall be procured prior to subcontract crane work commencing on site:

- Annual crane inspection;
- Double tie-back chokers;
- Operator license (where applicable);

- Proof of daily visual inspection;
- Proof of load chart specific to crane; and
- Walk around of crane, by a competent superintendent.
- Independent Third Party inspection of cranes assembled on site

25.4 Designated Operator Requirements

Designated Operator Program

- Trained, competent and careful operators are essential;
- Only the following personnel shall operate this type of equipment:
    - Designated Operator – an operator assigned to the equipment after it has been determined the operator is qualified.
    - Trainees – under the direct supervision of the designated operator.
    - Maintenance and Test Personnel – when it is necessary in the performance of their duties, they should be checked out on the equipment the same as the designated operator.

- No one other than personnel specified above shall operate this equipment;
- Each designated operator shall be indoctrinated in the manufacturer, and regulatory agency rules applying to the equipment prior to starting work;
- Names of designated operators shall be posted in a visible location in or on the cab;
- Refer to the following Designated Operator's Requirements for more information;
- Any standard attachments to the boom such as jibs and auxiliary or whip lines shall be considered as affecting stability, and a deduction shall be made from load ratings in accordance with the manufacturer's instructions;
- The effect of lights, pile lead adapters, or other nonstandard attachments shall also be deducted from load ratings.

25.5 Crane Signaling

Precautions:

- Only one person is to be a signalman at any one time;
- • The signalman must be either in full view of the operator or in constant uninterrupted radio contact at all times;
- He must be fully qualified and his supervisor must brief him on procedures;
- The signalman must warn others in the area when loads are hoisted. He must also keep all unauthorized persons outside the crane's operating radius;
- Communication is the key element;

- Constant communication must be kept between the signalman and the crane operator, either visually with hand signals or audibly by radio;
- If the operator loses contact with the signalman for any reason, he must stop the movement of the crane until communication is restored.

Radio Crane Signals

The following crane signals will be used when directing cranes by radio. The use of this standard set of signals will prevent miscommunication and help ensure a safe, smooth operation. Sometimes signalmen may wish to supply distances in feet (like "down easy two feet").

- Swing crane say, “swing right” or “swing left”;
- To stop swing of crane say, “stop”, or “hold that”, or “hold your swing”;
- To boom crane say, “boom up” or “boom down”;
- To stop boom say, “stop”, “hold that”, or “hold that boom”;
- To lower load fast say, “hoist down, you are clear”;
- To lower load slow say, “hoist down easy”;
- To stop load say, “stop”, “hold that” or “hold your hoist”;
- To raise load slowly say, “hoist up easy”;
- To raise load fast say, “hoist up, you are clear”;
- To hold load at same elevation say, “boom up and float the load”;
- While booming up or down say, “boom down and float the load”;
- When swinging fast say, “easy on the swing”, “stop”, “hold that”, or “hold your swing”; and
- When coming down on the load fast say, “easy” before stop.

In addition, the following signals are to be used with hydraulic cranes:

- To telescope out say, “scope out”;
- To telescope in say, “scope in”;
- To stop telescoping say, “stop”, or “hold that”; and
- When your load is in place say, “dog-off everything”.

25.6 Safe Operating

General:

- Do not alter the machine by adding extra counterweight;
- Have the operator check the controls before making the first pick each shift;

- Never attempt to make adjustments, repairs, or replacements without first stopping the engine;
- Use taglines to control loads;
- Provide a level place to work;
- Never leave the cab with the load suspended, and secure the machine at the end of the shift;
- When a new moving rope is first installed, it should first be run for a time with no load and then a light load to enable the wires and strands to adjust themselves;
- Caution must be used at all times to prevent “two-blocking” when telescoping the boom;
- Extra caution must be observed on units equipped with an auxiliary hoist. Due to the caution that is required to avoid “two-blocking”, only one winch should be reeved unless both lines are required for the work;
- Position the machine so the shortest boom possible can be used and booming is kept to a minimum;
- Use standard crane signals given by one person only;
- Test the brakes and machine stability, check the boom-up and boom-down with the load in a safe position. This is not a method to check the load weight;
- Keep swing speeds slow when handling heavy loads;
- Never pick loads of unknown weight;
- Make vertical lifts only; and
- Never attempt to drag a load.

Capacities:

- Analyze every pick, never exceed the rated capacity. Take the time to be sure, don’t guess;
- Determine the weight of the load and the working radius and consult the capacity chart;
- Be aware of the lifting capacity of the equipment for various operating radii and the weight of all loads to be lifted;
- Before lifting capacity loads that are in dangerous positions, a test lift should be made either with the load in question or a comparable load;
- We use only the 360-degree rotation, outriggers set, load chart;
- Always operate within the rated capacity of the crane and keep booming and telescoping to a minimum while making a pick; and
- Knowing the weight of the pick and the radius is an absolute must.

Outriggers:

- Use all outriggers on every pick and make sure the machine is level;
- Outrigger beams are not to be used to carry material or to move objects;
- To aid our operations people, paint a two inch white strip on the outrigger beams to indicate whether the outriggers are fully extended;
- Outriggers extend just as far with the engine running at one-half throttle as they do at full throttle.

- The use of full throttle to set the outriggers or telescope the boom should be avoided, as it only increases engine wear, wastes fuel and creates additional noise;
- Outriggers should be firmly set and, when necessary, firmly blocked with wooden blocking;
- Always block under the pads, never under the outrigger arms;
- Be sure the boom is a crane boom and not a dragline boom;
- Operate with the boom above 30-degree angle boom;
- Never lift loads by telescoping the boom or booming up. Where additional line pull is required to lift the load, add additional part of line;
- The boom sections must be telescoped equally and only out far enough to accomplish the work;
- Booms are designed for vertical lifts only and they will not stand side loading;
- On machines equipped with manual boom sections, these should be used only when required for additional reach. When not required, they should not be extended; and
- A boom must not have any damaged members.

Jibs:

- Never travel with any load on the jib;
- Use jibs only when required for inward reach; and
- Jibs shall be removed from all AI cranes unless otherwise approved for use.

Crane Traveling with Loads:

- The foreman is responsible for obtaining approval from his superintendent prior to traveling with a load;
- The operator has responsibility for the rig and is not to walk with loads or under conditions that may cause the rig to become unstable or create any hazard to personnel or equipment;
- The superintendent or engineer shall determine a crane movement plan that addresses equipment and personnel safety;
- The plan should include consideration of load size, shape, weight, position, of rigging, terrain, soil, outrigger position, ground personnel, boom angle and radius, traffic, speed of movement, POWERLINES and all other variable that might affect safety;
- Traveling with loads that risk the safety of personnel or equipment is not permitted;
- Crane safety is common sense and no rule can cover all situations. If we error, then it must be on the safe side. Routine handling of small tool boxes, welder boxes, bottles, etc., that in general weigh less than 1,000 pounds are exempt from the above unless the terrain, soil, or other circumstances require additional considerations;
- However the following guidelines shall always apply:
    - Boom retracted as far as possible;
    - Load tied off;
    - Load carried over the front;

- Travel speed slow;
- An individual walking with the load will accompany loads extended 20 feet beyond the retracted boom; and
- The load should be kept as close to the ground as possible.

- When traveling is complete, before the boom is swing or telescoped, the outriggers must be fully out and fully extended with daylight visible under the tires.

Load Handling:

- All loads are to be properly rigged to prevent the dislodgment of any part;
- Suspended loads must be securely slung and properly balanced before set in motion;
- The load must be kept under control at all times. Guide or tag lines must be used on all loads to prevent rotation and maintain control of the load at all times;
- Loads must be safely landed and properly blocked before removing the rigging;
- Any lifting device used must be plainly marked with its weight, designed working load, and should only be used for its designed purpose;
- The hoist rope must never be wrapped around the load. The load should be attached to the hook by other slings or other rigging devices that are adequate for the load being lifted;
- Multiple part lines must never be twisted around each other;
- The load line must be brought over the center of gravity of the load before the lift is started;
- If a slack rope condition has occurred, it must be determined that the rope is properly seated on the drum and in the sheaves prior to continuing with the pick;
- Keep hands away from any pinch points at all times and especially when the slack is being taken out of the hoist rope;
- Wear leather gloves when handling wire rope;
- Make all people aware of loads being hoisted by using horns and audible alarms whenever load is in motion;
- Never ride on a load that is being lifted;
- Never work under a suspended load unless the load has been adequately supported from the floor and the supervisor in charge of the operations has approved all conditions;
- Remove or secure all loose material from the load before it is moved; and
- Lower the loads onto adequate blocking to prevent damage to the slings. Wire Rope Capacities:
- To calculate the safe working load of wire rope, use the rule of thumb method which is:
    - Take the diameter of the cable and change it to eights;
    - Square the top number; and
    - Divide that answer by the bottom number and the result is a safe working load (in tons).

      Example:

      ½” cable – 4/8”: 4 x 4 = 16 = 2 tons safe working load

7/8” cable: 7 x 7 = 49 = 6 tons safe working load

25.7 Operating Near Overhead Power Lines

General:

This section applies to all boom-type equipment procedures should be distributed to ALL company employees who may have occasion to operate equipment that is capable of coming within 10 feet or high voltage lines.

Working Near Overhead Power Lines:

- Adherence to company program that cranes be located so that no part of the rig can come within
- 10 feet of any energized powerline, unless the state code requires a greater separation be maintained;
- A complete job survey must be made of all high-voltage lines within the job limits prior to beginning work;
- On all jobs where cranes are in use, all POWERLINES crossing the work area, shop areas and access roads will be signed;
- Signs must be placed on either side of the POWERLINES (and on both sides of roads) denoting
- “Overhead Lines – Boom Down”;
- The signs must be placed on either side of the lines a sufficient distance away so that the longest boom on the job cannot come within 10 feet of the lines from the point where the sign is installed;
- Supervisors, operators, and oilers should be instructed that booms will not be raised while the crane is located between the signs;
- Flagging should be suspended from a rope or wire strung between the signs;
- Where traffic is anticipated to be heavy or continuous, serious consideration should be given to the use of messenger cables;
- They should be suspended across the road, on either side of the high line, at a height 10 feet below that of the energized powerline;
- They should also be of sufficient distance from the powerline to give adequate warning that the equipment or load is too high to allow proper clearance of the powerline.
- If it is necessary work a crane in close proximity to energized electrical conductors, the following will also apply:

- Before starting operations near energized powerlines, notify the power company and determine if it is at all possible to have the lines relocated or, at least, de-energized for the period of time you will be working close to them;
- In cases where the power company will not relocate powerlines at their expense, serious consideration should be given to relocating the lines at our expense not only in the interest of safety, but to greatly increase the efficiency of a long-term operation;
- If it is not possible to have the lines de-energized, consideration must be given to the use of one or more of the following:
    - The erection of physical barriers to prevent any portion of the rig or load making contact with the line;
    - The use of cage-type boom guards, boom insulators, insulated hooks, proximity warning devices, swing limiters, and positive tie-downs to prevent swinging into the lines; and
    - The nature of your operation, the length of time and the number of powerlines in the area should dictate which device or devices are to be used.

Caution: the use of any of the devices described above does not mean that you can relax your procedures. Since these devices are not fail-safe, the same precautions normally used in these circumstances must be followed regardless of what safety devices may be installed on your equipment.

- The foreman will act as signalman and the oiler's sole responsibility will be to stand alongside the signalman and watch the boom and wires;
- If the oiler is otherwise engaged (such as moving a truck crane forward), a reliable member of the crew will be given this responsibility; and
- Supervision, operators, oilers, and all other members of the crew must be thoroughly familiar with the proximity to energized power lines and thoroughly indoctrinated on the correct procedures to follow in the event the crane does not make contact with the powerline.

25.8 Multi-Crane Lifts

The use of two or more cranes to make a lift is not allowed, unless the following occurs:

- All alternated ways of making lift must be checked and determined that the only way to complete job is to use a multi-crane lift;
- Complete drawings, layout plans of jobsite, complete with boom locations, swing paths, walk path, load being lowered path shown on drawing and accounted for within the drawings;
- During the planning stages of all multicrane lifts only 80% of rated load chart can be used;
- Hazard analysis done and gone over with the supervisors and crew;
- Crane(s) must be inspected and found in safe working order, all OSHA and local regulations followed;

- The list is approved by:
- Project Manager and Project Executive;
- Equipment Manager; and
- Before lift begins, all supervisors and persons involved with the operation must have pre-lift meeting to what is being done and how it should take place along with what everyone will be doing and what safety issues are involved; and
- This applies to sub-contractors and rental cranes.

25.9 Crawler Cranes

Due to the size and restricted mobility of crawler cranes, it is imperative that every move be planned:

- Never travel a machine on a job site, in a congested area or around people without first assigning a qualified person to signal;
- The signalman will be responsible for determining and controlling speed of the move;
- The operator should signal his intentions to move by sounding the horn; two blasts for forward, three for reverse;
- Never travel or swing the crane without first making sure that everyone is clear and a safe distance away from the rig;
- Never get on or off the crane while it is in motion;
- Watch for narrow spots and low clearances, ensure that the signalman is safely out in front of the machine in full view of the operator at all times;
- Reduce speed when maneuvering in tight quarters;
- After the crane has been positioned, accessible areas within the swing radius of the super structure of the crane should be barricaded to prevent employees from being struck or crushed by the crane;
- Watch out for overhead obstructions such as low bridges, overhangs and powerlines;
- Operators should not “cut-too-sharp” when positioning their equipment;
- Turning should be gradual;
- During turning or pivoting, travel forward and backward until positioning is complete; and
- After the crane is positioned, the tracks and chains should be checked and cleaned if necessary.

Double Tie-Back Choker

- If more than one line must be reeved for a particular operation, then the idle line must be tied back to the revolving portion of the crane with a double tie-back choker; and
- The double tie-back choker should be matched to the crane size. Wire Rope
- Rope diameter is specified by the equipment manufacturer and must be followed. Stay with the manufacturer’s recommendations for wire rope. Wire rope certifications must be received with every rope put on equipment. This certification should show working strength, minimum/maximum breaking strength of wire rope. These certifications should be kept in equipment file on jobsite and at the Maspeth office.

Non-Spin/Rotation Resistance Ropes

- In the past, it has been the program that no non-spin or rotation resistance ropes would be used on AI or rental cranes on our jobsites. As the industry changes we must re-look at this statement, we still feel that standard ropes do most of the requirements asked in the construction industry. We recognize that there are special applications that the standard ropes fall short, and in these cases, we need to look into the problem; and
- Approval can be received to use rotation resistance ropes from the Equipment Manager. Crane Swing Radius Barriers
- All truck mounted and crawler cranes working in the company should provide swing radius protection barriers. This applies to all cranes, company owned and rentals;
- Rough terrain cranes may require swing protection should counter weight pose a safety hazard.
- Radius protectors should be attached to the crane, as temporary swing protectors tend to not be moved with when crane moves; and
- This applies to all sub-contractors rental cranes.

25.10 Job Made Lifting Devices

The scope of our contracts call for a considerable quantity of lifting, hoisting and rigging. The uniqueness of many of the picks means we will fabricate lifting devices here on the job. These are items such as skip boxes, bottle racks, beam clamps, spreader bars, etc. To ensure both quality and safety, our fabrication and operation must be flawless. These steps are to be followed when considering the use of every job- made lifting device:

- The design must be reduced to paper;
- A qualified engineer must approve the design using the following criteria:
    - Device will function as designed;
    - Structurally sound;
    - The device must have a built-in safety factor (safety factor of 4 when people will be on the device);
    - Consult the local safety regulations;
    - Welding procedures, fabrication notes, design requirements and testing methods must be specified if applicable to the design. Weld engineers should be consulted;
    - Load test at 125% of rated load;
    - The rated load shall be legibly marked on it;
    - Where instructions are needed for safe operation, these shall be written and made available to those who will use the lifting device; and
    - Design should have the approval from a professional engineer and all paper work stamped accordingly.

25.11 Suspension Personnel Platform

General:

- The use of suspension personnel platforms is not allowed, unless there is no other way to access the work area;
- Should a suspension personnel platform be used, the requirements below must be followed:
    - All alternate ways of accessing the work must be checked and determined that the personnel platform is the only way to complete the work;
    - Complete drawings, layout plans, swing radius and hazard analysis must be done;
    - Suspension personnel platform must meet or exceed all requirements in OSHA requirement 1926.550. All state, city and owners requirements must be met also;
    - Cranes used to suspend personnel platform must meet or exceed all requirements set down in OSHA requirement 1926.550;
    - Approval by the Project Executive;
    - Before use of suspension personnel platform begins, all supervisors and persons involved with the operation must have pre-lift meeting to inform what is being done and how it should take place along with what everyone will be doing along with safety issues involved;
    - Must work with Crane Operations protocol, crew using personnel platforms must have Trial Test-Lift before use; and
    - This applies to sub-contractors and rental cranes.

Crane Operators:

- Daily visual inspections;
    - Crane
    - Wire rope, rigging and hook; and
    - Control functions.
- Test-lift the empty personnel platform with the appropriate weight;
- Meet with crew and person specifically in charge of the work;
- Know where crew is going and what they are going to do;
- Know who the signalman will be;
- Use radio communication between personnel platform and ground signalmen;
- Anti-two block device is required on crane;
- Designate a man to watch for two-blocking the hook;
- Lower the basket under power. Never free-fall the basket;
- Raise and lower the personnel platform no faster than 100’ per minute;
- Remain at the controls whenever personnel are in the man baskets;

- The operator is the only person authorized on a crane during operations, especially while men are in the personnel platform;
- Do not operate the crane if communications are lost;
- Do not travel the crane with men in the basket;
- Do not exceed 50% (half) the rated crane capacity per the load chart; and
- Do not exceed 10,000 pounds when the Insulator Link is in use. Crew using personnel platform:
- Inspect the personnel platform for:
    - Structural damage;
    - Damage to the insulator link;
    - Damage to other rigging;
    - No more than four people in a personnel platform;
    - Wear a safety belt and tie-off at all times;
    - Maintain communication with crane operator; and
    - Remove extraneous items (scrap metal, unused equipment, etc.).

Trial Lift Inspection and Proof Testing

- A trial lift, with unoccupied personnel platform loaded at least to the anticipated lift weight, should be made from ground level, or any other location where work is to be performed;
- This should determine that all systems and safety devices are activated and functioning properly, and that no interference exists;
- Materials and tools to be used during the actual lift can be loaded in the personnel platform for the trial lift;
- A single trial lift may be performed at one time for all locations that are to be reached from the position the crane is set for;
- The trial lift shall be repeated prior to hoisting employees whenever the crane is moved, set-up in a new location, or returned to the previous location;
- After the trial lift and just prior to hoisting personnel, the platform shall be hoisted a few inches and inspected to ensure that it is secure and properly balanced;
- Employees shall not be hoisted unless the following conditions are determined to exist:
- Hoist ropes are free of kinks, hoist system has been inspected to ensure the load rope is not slack and all are properly seated on drums and in sheaves;
- Multiple part lines are not twisted around each other;
- The primary attachment is centered over the platform;
- A visual inspection of the crane, rigging, personnel platform, and the crane ground shall be made by a competent person immediately after the trial lift;
- Determine whether the test procedure has exposed any defect or produced an adverse effect upon any component or structure;
- Any defects found during inspections shall be corrected before hoisting personnel; and
- A meeting should be conducted to review the appropriate requirements and procedure to be followed. The operator, signal persons, employees to be lifted, and personnel responsible for tasks

should attend. This meeting shall be repeated prior to the trial lift at each new work location and for any employees newly assigned to the operation.

25.12 Rigging Safety

General:

- Knowledge of the equipment and materials with which we work is one of the most important factors in accident prevention. Each piece of equipment and material has been designed and developed to serve a specific purpose and knowledge of what it can and cannot do, not only improves efficiency, but also eliminates hazards;
- It is the responsibility of management and supervision to ensure that the men who prepare, use and work with or around equipment are well trained in both safety and operating procedures;
- Management and supervision must also ensure that the men who direct, rig and handle loads have received training in the principles of the operation, and that they are able to establish weights and proper rigging gear suitable for the loads to be lifted and are capable of directing the movement of the crane and load to ensure the safety of all personnel;
- All rigging operations must be planned and supervised by competent personnel to ensure that the best methods and most suitable equipment are used; and

- The supervisor is responsible for:
    - Proper rigging of the load;
    - Supervision of rigging crew;
    - Assuring rigging equipment meets the load criteria for the job and is in safe condition;
    - Ensuring correct assembly of rigging material or equipment as required during the operation, such as the correct installation of lifting bolts, etc.; and
    - Safety of the rigging crew and other personnel as they are affected by the rigging operation.

Rigging Equipment:

- Know the safe working load of all your rigging equipment and never exceed its limit'
- Determine the load weight before rigging it;
- Inspect all rigging equipment before using it;
- Destroy defective equipment;
- Never commence with a rigging or hoisting operation when any doubt exists as to the safety of the personnel affected by the lift;

- When weather conditions are such that the safety of the crew is affected, all rigging and hoisting must stop immediately. When winds approach 30mph or lightning is in the area, serious consideration should be made to stop operations;
- The safe working loads of rigging and hoisting equipment apply onto to freely suspended loads on plumb hoist lines;
- If the hoist line is not plumb at all times when handling loads, a side load will occur and cause a hazardous condition, affecting the stability of the equipment and introducing stresses for which is has not been designed, when conditions such as this occur, structural failure can result without any warning;
- The load must be kept directly below the boom point or upper load block;
- The maximum safe working loads of most rigging and hoisting equipment are determined from static loads only. For this reason, it is essential to avoid sudden snatching, swinging and stopping of suspended loads since rapid movements will greatly increase the stresses imposed on the rigging equipment; and
- Never weld or alter load block hooks in anyway. This includes cranes, mechanic trucks, loader booms, chain and cable hoist, rigging and all hooks.

Shackles:

- AI only purchases and uses Crosby Brand Shackles;
- All rigging hardware such as shackles and eyebolts must be made of forged alloy steel. Shackles, like most other rigging hardware, are sized by the diameter of the steel in the bow section, rather than the pin size. Never replace the shackle pin with a bolt and never allow a shackle to be pulled at any angle, because this would tremendously reduce its capacity;
- Shackles worn in the crown or the pin by more than 10% of the original diameter must be destroyed. Screw pin shackles should not be used if the pin could roll under the load and unscrewed;
- Eyebolts of the shoulder less type are to be used for vertical loads or pulls only. Even when equipped with shoulders, the safe working loads of eyebolts and ringbolts are substantially reduced with angular loading; and
- To keep bending and stress to a minimum, the load should always be applied to the plane of the eye, never in the other direction. Never insert the point of a hook in an eyebolt, always use a shackle.

Turnbuckles:

- Turnbuckles can be equipped with eye, hook, jaw or stub end fittings. Each are rated equally with the exception of the book type that has a reduced rating; and
- All hook types must have a safety latch installed. Turnbuckles, as with all rigging appliances, should be inspected frequently and replaced immediately if defective.

Wire Rope Slings:

- Use only wire rope slings made with flemished eyes and steel swages;
- The life and safety of slings and their contribution to the overall safety and of rigging operations can be greatly increased by taking care in their application;
- Never use damaged slings or chokers;
- All slings, chokers and other rigging equipment must be given thorough periodic inspections, as well as daily inspections, for signs of wear and abrasion, broken wires, worn or cracked fittings, loose sizing and splices, kinking, crushing, flattening and corrosion;
- Special care should be taken when inspecting areas around thimbles and fittings, since these areas are the most likely to become damaged;
- All slings must be identified with their maximum capacity rating;
- All slings over ¾" diameter must have certification with sling at time of purchase;
- Never used flemished eye sling made with aluminum swags;
- Loops, thimbles and softeners must be used to prevent the sling from being sharply bent or cut;
- Never allow wire rope to lie on the ground for any length of time;
- Avoid dragging rope slings from beneath loads;
- Never use a wire rope sling that D to D is less than 1 to 1;
- Keep all rope away from flame cutting and electric welding operations;
- Avoid contact with solvents and chemicals;
- Never use slings that are knotted or kinked;
- Never wrap a wire rope completely around a hook, the sharp radius will damage the sling;
- Avoid, if possible, bending the eye section or wire rope slings around corners. The bend will weaken the splice
- No bending should be attempted near or on any attached fitting; and
- When using multi-legged slings to lift loads, any two of the slings must be capable of supporting the total load.

Nylon/Synthetic Slings Program

- Nylon/synthetic slings are not to be used for general rigging. They are to be used only for those lifts that require special handling, such as tubular or angle booms, piping, etc.;
- While nylon/synthetic slings are easy to use, they have some definite disadvantages that can lead to serious problems, such as, subject to deterioration from weather. Nylon/synthetic slings are harder to inspect due to the external cover that is on many of the slings. The cover gets worn and torn but too often the sling itself is not inspected and we end up with slings that have internal damage;
- Nylon/synthetic slings cannot be used to handle objects with sharp corners as they tend to cut the slings. Since the majority of the objects we rig have sharp corners we must not use nylon/synthetic slings;
- Another important consideration is the cost. The nylon/synthetic sling cost approximately 70%

- more than a compatible wire rope sling;
- All nylon/synthetic slings must have indenture thread or indicator system when damaged;
- All nylon/synthetic slings must be identified with their maximum capacity rating;
- Loops, thimbles and softeners must be used to prevent the sling from being sharply bent or cut;
- Never use nylon/synthetic slings to handle rebar or iron with sharp edges which could damage or cut sling;
- Never allow nylon/synthetic sling to lie on the ground for any length of time;
- Avoid dragging nylon/synthetic slings from beneath loads;
- Keep all nylon/synthetic away from flame cutting and electric welding operations;
- Avoid contact with solvents and chemicals;
- Never use slings that are knotted or kinked;
- Never allow nylon/synthetic slings to be in prolonged periods of sunlight (as Ultraviolet light adversely effects the slings);

26 Demolition

26.1 Purpose

The purpose of this program is to ensure that as a company we establish site-specific demolition safety guidelines to ensure the highest level of employee safety during these operations. At DBJV we understand that demolition is an extremely hazardous part of the construction process that is why we have these plans developed and implemented before the start of each project.

Applicable Regulations

OSHA 29 CFR 1926.850

26.2 Responsibilities

Project Management shall:

- Develop and maintain a site specific demolition plan according to the guidelines in this program.
- Ensure that a site-specific demolition plan has been developed;
- As part of the plan, he or she must decide if demolition work can safely proceed if certain high-risk utilities are suspected in the demolition area; and
- Review and approve the site-specific demolition plan. Employees shall:
- Comply with all guidelines set forth by the site-specific demolition plan.

26.3 Procedures

Demolition plan:

- Before starting any demolition activities, each job must develop a site-specific demolition plan;
- The demolition plan must indicate the phases of work by method, risk assessment is a critical component when selecting the final method;
- This plan must be approved by the Project Manager;
- The plan should include, at least,:
- Engineering Survey Report;

- Demolition Method Plan;
- Utility Protection Plan;
- Shoring or Bracing Plan;
- Fall Protection Plan
- Worker Access Plan;
- MOP and MOT Plans;
- Lead Safety Plan;
- Dust Control Plan;
- Disposal Plan;
- Pest and Rodent Control;
- Noise and Vibration Assessment; and
- Permits.

Engineering Survey:

- Before permitting our employees to start demolition operations, an Engineering Survey Report shall be made by a competent person, of the structure per 29 CFR 1926.850, Subpart T, Demolition; and
- The completed Engineering Survey Report form must be kept on site during all operations.

Utility Protection Plan:

- To ensure zero utility strikes, all known or suspected utilities must be clearly marked before demolition work begins;
- The demolition plan must list each known or suspected utility and indicate the following:
- Is the utility scheduled to remain or will it be removed before demolition begins?
    - If the utility remains, is protection required including any bracing or shoring? And
    - Has the utility owner been notified and can the owner shut down or temporarily relocate the utility before demolition?
- Miss-marked or unknown utilities are a known hazard and the steps needed to locate all miss-marked or unknown utilities must be included in your work plan ;
- The Project Manager must decide if demolition work can safely proceed if certain high-risk utilities are suspected in the demolition area;
- The demolition plan must consider when demolition methods are acceptable when working near high-risk utilities;
- A conventional demolition technique, i.e. cutting and dropping a structure, is not allowable when there is an obvious risk of striking a high risk utility;
- Selective demolition, i.e. rigging and picking is often the only means to reduce our risk next to high-risk utilities;

- DO NOT allow outside influences to force your job into excepting and unsafe demolition method next to a high-risk utility; and
- Testing and purging of pipes, tanks or other equipment containing hazardous, flammable or explosive substances must be considered.

Shoring or Bracing Plan:

- The demolition plan must identify the structures impacted by demolition, including internal walls,
- Flooring or bracing and external structures, particularly party walls that may rely on or be impacted by the demolished structure.

Fall Protection Plan:

- The demolition plan must list each activity requiring fall protection, and should include a sketch or written description of the equipment and materials needed to adhere to our strict fall protection standard;
- The changing nature of demolition work requires us to assess fall protection requirements as the demolition work progresses;
- Effective fall protection requires simple, convenient access to tie-off locations before work begins; and
- Supervision is not immune to fall hazards. Do not enter a work area requiring fall protection without the proper equipment and training.

Worker Access Plan:

- Proper access is essential to a safe and productive job. The work plan must considered the following:
    - How the workers and equipment will travel to and from work site throughout the day;
    - The movement of debris by heavy equipment or truck must be coordinated with the movement of your craft;
    - Demolition work requires stacking, sorting and loading debris, and the access plan must consider how the workers will traverse the various lay-don or scrap preparation areas throughout the work;
    - Employee entrances to multi-story structures being demolished shall be completely protected by sheds and/or canopies, providing protection from the face of the building for a minimum of 8 feet.

- All such canopies shall be at least two feet wider than the building entrances or openings (1 foot wider than each side thereof), and shall be capable a load of 150 pounds per square foot;
- Only use stairways, passageways and ladders, designated as means of access to the structure. Other accesses shall be entirely closed at all times; and
- All stairs, passageways and ladders shall be periodically inspected and maintained in a clean and safe condition.

Maintenance of People and Maintenance of Transport Plans:

- The demolition plan must outline what MOP/MOT procedures are required and what, if any permits are needed to begin demolition; and
- The Code of Federal Regulation requires signs posted inside of the work area or structure being demolished to communicate the hazard to the worker.

Dust Control Plan:

- The demolition plan must state if permitting requires dust control, the type of dust suppressant used, i.e. water, chemical or both, the source i.e. fire hydrant, ponded water or tanker and what the equipment is needed to spray the water, i.e. type of pump, length of hose, nozzles etc; and
- Dust control is the most visible indicator of our safety program to local inspectors and to the public.
- A low volume water hose, used to control dust on a large structure is not effective, and will encourage public complaints and inevitable inspection of our demolition projects.

Disposal Plan:

- The demolition plan must list the type of debris requiring disposal and must state where each waste is being disposed;
- Be sure the work plan considers how local regulatory agencies classify the debris and what trucking requirements apply;
- Be particularly cautious when disposing asphalt and concrete fill on private property permitted to receive “clean” fill and never dispose of any construction debris without the proper authorization beforehand;
- Each disposal location must be permitted by all applicable agencies including Federal, State and Local organizations. Often times there are multiple permitting bodies within the same organization. For example, the local building department may accept our disposal plan without a permit, but the local environmental department and health department may require a written permit. The two departments often have separate permitting rules although they both fall within the same organization.

Pest and Rodent Control Plan:

- The demolition plan must state if permitting requires a pest and rodent control plan and the procedures that will be taken.

Noise and Vibration Assessment:

- The demolition plan must assess noise if applicable;
- Vibration may result from noise of physical impact, the demolition plan must assess vibration if applicable.

Permit Plan:

- The demolition plan must list the permits needed for demolition;
- Be aware that most municipalities permit demolition work only as asbestos abatement job is completed or asbestos survey by a licensed firm indicates no regulated asbestos is present.

27 Electrical

27.1 Purpose

The purpose of this program is to protect employees from the hazards associated with electricity. Our safeguards against electrical hazards will include an assured grounding program, lockout/tagout procedures and general requirements for work involving any type of electricity or electric tool.

The assured electrical equipment grounding process for the site covers all cord sets and receptacles which are not a part of the permanent wiring of the building or structure and equipment connected by cord and plug which are available for use, or are used by workers. This process will comply with the following minimum requirements and must be documented as outlined in 1926.404(b)(iii). It is the responsibility of the each Contractor's Designated Competent Person to implement the assured electrical equipment ground conductor process. The quarterly assured grounding inspection is required to be documented on the Electrical Inspection Verification form (Appendix C-23). The site will require total use of Ground Fault Circuit Interrupters (GFCI).

This program addresses work to be performed on exposed live parts involving either direct contact or by means of tools or materials, or near enough to exposed live parts for employees to be exposed to electrical hazards

Applicable Regulation

OSHA 29 CFR 1926.400

OSHA 29 CFR 1910.1477

OSHA 29 CFR 1910.332

27.2 Responsibilities

Project Management shall:

- Ensure electrical systems, tools, cords and lights meet the requirements of this program;
- Develop and maintain a site-specific Temporary Electrical Plan consistent with the requirements in this program;
- Utilize the Power Line Close Proximity Permit for all work activities (Appendix C-13)
- Ensure that Ground Fault Circuit Interrupters are used according to the requirements of this program;
- Train employees according to the requirements of this program
- Ensure lockout/tag-out measures are correctly carried out according to the requirements of the Lockout / tag-out program.
- Ensure employees who face a risk of electric shock but are not qualified persons shall be trained and familiar with electrical related safety practices as that pertain to their respective job assignments. (Take Clearance distances as an example).

Employees shall:

- Follow lockout/tag-out procedures
- Not open, adjust, repair or modify electrical systems or tools unless they are qualified to do so.
- Be trained and familiar with electrical related safety practices to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts when work is performed near or on equipment or circuits which may be energized.
- Shall not wear conductive items of jewelry or clothing unless they are rendered non-conductive by covering, wrapping or other insulating means.

27.3 General Requirements

Electrical Systems:

- Electrical systems must be inspected and maintained on a regular basis;
- Electrical equipment or circuits which have been deenergized shall not be opened, adjusted, repaired, or otherwise handled until lockout or tagged or both are completed;
- • De-energized equipment shall be treated as live, that has not been locked or tagged out and tested
- All metal panels, boxes, covers, conduit, etc., that are part of our electrical system shall be grounded;
- All electrical equipment that is exposed to flammable gases or vapors, combustible dust, or ignitable fibers must meet hazardous location requirements in order to prevent explosions;
- Label all circuit breakers to show what they control. Also, label all circuit breaker panes to show what voltage they contain;

- Panel covers must be kept in place whenever the panel is energized;
- All cables exiting metal panels or boxes shall be secured with stress relieving clamps;
- Waterproof clamps shall be used as necessary;
- All splices and repairs shall be made inside an approved box or sealed with epoxy or vulcanizing kits. Tape alone is not acceptable;
- Electric lines shall not be hung or secured by nails, staples, metal wire or any other conductive object;
- All panels shall be equipped with a lockable door so that power can be turned off and locked-out for repairs. Adequate space is needed to open the door at least 90 degrees;
- Do not unplug electric lines carrying more than 240 or 277 volts until they have been shut off;
- Circuit breakers that protect hand tool receptacles shall have a maximum rating of 20 amps; and
- Circuit breakers shall be matched as closely as possible to the electrical needs they supply.
- Employees may not enter spaces containing exposed energized parts unless illumination is provided that enable the employee to work safely
- Protective shields, protective barriers or insulating materials shall be provided when working in confined or enclosed work spaces where electrical hazards exist
- Portable ladders shall have Non- conductive side rails and aluminum ladders are not allowed on
- DBJV projects
- Only qualified persons may work on electric circuit's parts or equipment that has not been de-energized. Such persons shall be made familiar with the use of special precautionary techniques, PPE, insulating and shielding materials and insulated tools
- When working under overhead lines, clearance distances must be identified and provided, or lines shall be de-energized and grounded, or other protective measures shall be in place before work is started. See Overhead power line utility checklist 22.10 for use with project team planning
- Unqualified employees shall at a minimum maintain a distance of 10 ft clearance for 50kV and plus 4 ft for every additional 10Kv.

Note: the minimum clearance distance for cranes must be from power lines is 20 ft not 10ft unless certain conditions above are met

- Working under overhead lines applies to vehicular and mechanical equipment. Clearance distance chart requirements

Table 29 A – Voltage Clearance Table

Voltage (kV)	Minimum clearance (feet)
Up to 50	10
50 to 200	15
200 to 350	20

350 to 500	25
500 to 750	35
750 to 1000	45
Over 1000	as established by line owner

Lights:

- Light bulbs shall have guards unless deeply recessed in reflector housing;
- Fluorescent tube lights shall have guards or bulb covers;
- Outdoor lights shall be of water resistant construction; and
- Light plants shall have bulb changing hazard stickers placed on each shade cover warning of electrical hazard while changing bulbs.

Electric Tools, Cords and Equipment:

- All electric tools and equipment must be grounded or double insulated;
- All extension cords must be grounded regardless of where they are used or what they are used for;
- Electric tools and extension cords shall be inspected before each day's use for proper grounding, cracked housings, damaged cords, non-standardized connectors, and any other electrical problem;
- Damaged tools and cords shall be removed from service immediately. Spare tools and cords should be readily available to replace damaged items;
- Qualified personnel shall make repairs;
- A check for proper grounding and continuity shall be made after each repair;
- Cut, frayed, crushed, burned or otherwise damaged extension cords shall not be repaired with tape;
- Receptacles supplying more than 130 volts should be obviously marked;
- Twelve gauge, three wire, heavily insulated, SO cable shall be used for extension cords;
- Extension cords must be kept off stairways and out of walkways, roadways, rain, snow, ice, mud and water; and
- Circular saws shall have 10 foot cords so that they plug does not catch the edge of the wood when cutting 8 foot sheets of plywood.

27.4 Temporary Electrical Plan

Each subcontractor shall develop a temporary electrical plan. The plan will include:

- Locations of all temporary services, spider boxes, circuit breaker panels, etc.;

- Identification of qualified electricians;
- Labeling and barricading requirements;
- Emergency contact number;
- Inspections; and
- Lockout/Tagout Procedures.

27.5 Ground Fault Circuit Interrupters

General:

- Ground Fault Circuit Interrupters (GFCI) are mandatory on our projects; whether used as pigtails on generators not having GFCI capacities or mandatory as we purchased portable generators (with GFCI installed) for use on our projects;
- When GFCI are used the following requirements must be met:
    - All 120-volt, single phase 15 and 20 ampere receptacle outlets on construction sites, which are not a part of the permanent wiring of the building or structure and which are in use by employees, shall have approved ground fault circuit interrupters for personnel protection;
    - Receptacles on two-wire, single phase portable or vehicle-mounted generators rated at no more than 5 kw, where the circuit conductors of the generator are insulated from the generator frame and all other grounded surfaces, need not be protected with ground fault circuit interrupters;
    - Buildings that have permanent wiring of the structure cannot use the permanent outlet without proper ground fault protection either at the breaker or by use of a GFCI adapter.

27.6 High Voltage Lockout Procedures (1,000 + volts)

Work on high voltage lines or equipment requirement safety precautions in addition to the standard lockout program and procedures.

High Voltage Rooms and Collector Ring Compartments:

- Whenever any high voltage rooms or areas such as collector ring compartments are unlocked and de-energized, the following must happen:

All personnel working in or near these areas shall place their lock and tag on the junction box that is disconnected or at the gate on the appropriate substation or disconnect baloney box; and

Multiple lockouts will be used so that each employee has a lock and tag in position.

High Voltage Lines and Equipment:

- When a high voltage line is to be worked on, it must not be considered de-energized until a qualified person determines that the high voltage line has been de-energized and grounded;
- Qualified persons shall visually observe to:
- Determine that the disconnecting devices on the high voltage circuit are in the open position:
- Ensure that each ungrounded conductor of the high voltage circuit, upon which work is to be done, is properly connected to the system ground medium.
- Grounding of the ungrounded conductor will be on the source side of the circuit on which work is to be performed. Grounding jumpers connected to the ground bus will be provided for this purpose.

Grounding will be accomplished by the following procedure:

- Verifying that the feeder disconnect is open and locked out;
- Using a ground stick, ground each ungrounded phase to bleed off any residual electrical charge on the circuit; and
- Attaching grounding jumpers to each ungrounded phase of the circuit on which work is to be performed.

High voltage circuits will not be energized until:

- All work on the high voltage circuit is completed and inspected;
- All personnel have been cleared from the high voltage area and notified that the circuit will be energized;;
- All protective grounding installed has been removed from ungrounded conductors; and
- The high voltage area has been secured and locked

27.7 Training

General:

- Employees who will be required to install three-prong, twist-lock plugs on electrical equipment will be trained in the correct procedure;
- Employees will be trained in the hazards of the electrical equipment with which they are required to work;
- Employees required to perform continuity testing (assured grounding tests) on tools will be trained in the correct procedure.

Lockout/Tagout:

- Employees performing any service or maintenance work must be made aware of the lockout and tagout program. (This also applies to any vendors or subcontractors doing work on Company job sites);
- Employees will be trained as to the purpose, function and his/her responsibility in performing the lockout and tagout; and
- Employees will receive periodic training to ensure they are up-to-date and knowledgeable on the lockout and tagout program and procedure.

28 Emergency Services and First Aid

28.1 Purpose

First aid services and provisions for medical care shall be made available for every employee. First Aid/CPR and Bloodborne Pathogens training shall only to be performed by qualified and certified individuals. Employee's that take part in the training are not compensated for performing any First Aid on site and retain the right not to perform First Aid if they choose to do so or if the required Personal Protective Equipment is not available. In all cases, employee's who are trained in First Aid/CPR and Bloodborne Pathogens are required to follow the required Standards of Care as set forth in their training program. First Aid care should also be performed in strict compliance with laws and regulations as set forth in the CPR and First Aid Program and Bloodborne Pathogens Standard and in compliance with this program. Employees should not be considered as First Aid Providers until they have completed and received certification for both the required programs.

Applicable Regulations

OSHA 29 CFR 1926.50

28.2 First Aid and CPR Instructor Requirements

- The Safety Department shall be a trained First Aid/CPR and Bloodborne Pathogens Instructor.
- All training shall be conducted in accordance to the accepted Standards of Care and procedures as set forth by Medic first aid
- The Safety Department shall maintain certification and renew annually.
- The Safety Department shall attend any courses required by Medic to keep fully versed in accepted Standards of Care and Procedures.
- The Safety Department shall maintain all training records and shall keep records of training for 3 years.
- The Safety Department shall comply with all Medic Certification and Record Procedures. First Aid Attendant Requirements
- Each DBJV site location shall have, at all times, 1 employee trained in First
- Aid/CPR and Bloodborne Pathogens.
- Subcontractor requirements. Etc.

28.3 Requirements for Medical Services and First Aid

General

- At the commencement of each Project, provisions shall be made in the Emergency Action Plan for prompt medical attention in case of injury or illness. This shall include, but not be limited to, contact details and maps to the nearest clinic or hospital and communication systems in the event of a first aid emergency.
- Telephone numbers shall be posted on all sites for physicians, hospitals or ambulances. First Aid Station
- Each site shall have a designated First Aid Station complete with, but not limited to: a fully stocked first aid kit in accordance with ANSI-Z308.1-1978; an eye-wash station capable of at least a 15 minute flush; running water, both hot and cold; and CPR Resuscitation Masks and Non-Latex Gloves as PPE for First Aid Providers.
- Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses is prohibited in the First Aid Station.

First Aid Supplies

- First aid supplies shall be easily accessible when required.
- Each site shall have at least one First Aid Kit. An evaluation of the workplace shall take place to determine the need for further kits according to location, size, number of employees' etc. This evaluation should also determine any additional types and quantities of first aid equipment and supplies in the first aid kits.
- Contents of the first aid kit shall be checked prior to initial use and thereafter on a weekly basis to ensure that any expended items are replaced.
- The contents of the first aid kit shall be placed in a weatherproof container with individual sealed packages for each type of item.

28.4 Exposure Determination

This Program requires that no employee shall render first aid unless they have been trained and certified as completing the First Aid/CPR and Bloodborne Pathogens training sessions. As such, those who have been designated as First Aid Providers are the only employees who have the potential to be exposed to blood or OPIM and, therefore, are required to comply with the provisions set forth in this program.

Methods of Compliance

- All blood and fluid is to be considered potentially hazardous material and, as such, Body
- Substance Isolation (BSI) techniques shall be observed to prevent contact with blood or OPIM.

Engineering and Work Practice Controls

- Engineering and work practice controls shall be used to eliminate or minimize employee exposure.
- Where there can be a reasonably anticipated exposure of employees to infectious material a written exposure control plan shall be implemented.
- A copy of this plan shall be made available upon request
- Engineering Controls shall be examined, maintained and replaced (as required) on a weekly basis to ensure continued effectiveness.
- Hand washing facilities (running water, both hot and cold) shall be available at the First Aid Station.
- As soon as the First Aid Provider has treated the victim: PPE should be removed; hands and any skin that has come into contact with blood and/or OPIM should be washed with soap and water. If the First Aid Provider treats the victim at the site of the incident, PPE is to be removed at that location, antiseptic towelettes shall be used immediately and then the Provider is to wash their hands at the First Aid Station.
- Where hand washing facilities are not feasible, then appropriate antiseptic hand cleanser in conjunction with cloth/paper towels or antiseptic towelettes must be provided.
- Reusable sharps containers shall be available. These containers shall be: puncture resistant; labeled or color-coded (red or orange red); and leak proof on the sites and bottom. Reusable sharps that are contaminated with blood or OPIM shall not be stored or processed in a manner that required Providers to reach by hand into the sharps container. If outside contamination of this container occurs then it should be placed within a second container that complies with the above requirements.
- The first aid provider shall not eat, drink, smoke, apply cosmetics or lip balm or handle contact lenses in the First Aid Station or in the work area where there is a reasonable likelihood of occupational exposure.
- All procedures involving blood or OPIM shall be performed in such a manner to minimize splashing, spraying, splattering and generation of droplets of these substances
- Hepatitis B vaccine shall be made available to all employees that have occupational exposure at no cost to the employee
- Records for each employee with occupational exposure must be maintained for at least the duration of employment plus 30 years.

PPE

- PPE shall be checked and maintained to ensure availability and quantity on a weekly basis and shall be stored in an area that is free from potential contamination. PPE will be provided at no cost to the employee
- First Aid Providers shall always wear PPE prior to attending to any victim(s). If the PPE becomes compromised during treatment, then the Provider should replace immediately.
- Appropriate personal protective equipment shall be available, in a variety of sizes, at the First Aid Station and in First Aid Kits. This includes, but is not limited to: gloves; resuscitation devices; face shields or masks and eye protection; and gowns. Hypoallergenic gloves, glove liners, powder less gloves, or similar alternatives shall be readily accessible to those Providers who are allergic to Latex. All PPE shall not permit blood or OPIM to pass through to or reach the Provider's skin, eyes, mouth, other mucous membranes or work clothes.
- PPE is to be considered as single-use and shall be disposed of immediately in an appropriate container following care to the victim(s) and prior to clean up of the work site.

Housekeeping

- All equipment and environmental and working surfaces shall be decontaminated after contact with blood or OPIM. Acceptable decontamination solution will either be an approved cleanser or a 10% bleach solution. The bleach solution should be freshly made daily and should not be kept for more than 24 hours.
- Contaminated work surfaces shall be decontaminated as soon as treatment has been provided.
- Bins, pails, cans and similar receptacles intended for reuse which house contaminated materials shall be inspected and decontaminated as soon as feasible upon visible contamination.
- Broken glass which may be contaminated with blood or OPIM shall not be picked up directly by hands but by mechanical means, such as brush and dustpan or tongs.
- Reusable sharps that are contaminated with blood or OPIM shall not be stored or processed in a way that requires the Provider to reach by hand into a container where they are stored.
- All equipment and surfaces shall be cleaned and decontaminated after contact with infectious material.

Regulated Waste

- Contaminated sharps shall be discarded immediately or as soon as possible in containers that are: closeable; puncture resistant; leak proof on sides and bottom; and labeled or color-coded (red, red-orange).
- The containers shall be stored in the First Aid Station, and shall be maintained in an upright position throughout use. Its contents shall be removed regularly and will not be allowed to overfill.
- When removing the containers from the First Aid Station, the containers shall be closed prior to removal to prevent spillage of contents during handling, storage, transport or shipping. If there is leakage, then the container will be placed in a secondary container.
- All other blood or OPIM waste shall be placed in the appropriate waste storage at the First Aid

- Station. There will be two forms of containment:
    - A garbage can shall be available that is closeable, constructed to contain all contents and prevent leakage of fluids during handling storage, transport or shipping, and color coded or labeled. This can is to remain closed at all times and is subject to the terms set forth in this program.
    - All waste inside the garbage can shall be housed in the color coded and labeled waste biohazard bags. Prior to removal from the garbage can, this bag should be closed.
- Under circumstances in which differential between body fluids is difficult or impossible all body fluids will be considered potentially infectious.

Laundry Provisions

- If, during the course of providing first aid care, there is a compromise in the PPE and the First Aid Providers clothes become contaminated, the following provisions apply:
- PPE shall be used when handling contaminated laundry, by means of protective gloves and other appropriate PPE.
- Contaminated laundry shall be removed either by the rolling method or shall be cut from the Provider, whichever allows for minimum agitation.
- Contaminated laundry shall be bagged at the location into labeled or color-coded bags and will be collected by an approved laundry vendor.

Total Hazardous Waste Management Services Exposure

- A report of any exposure incident must be made immediately to the Safety Department and/or
- Project Manager.
- Following this report, the employee shall have a confidential medical evaluation and follow-up made available to him/her in compliance with 29 CFR 1910.1030.
- As part of the medical evaluation and follow-up, the following information shall be provided to the
- Healthcare professional who is responsible for the employee's Hepatitis B vaccination:
    - A copy of 29 CFR 1910.1030;
    - A description of the Employee's duties as they relate to the exposure incident;
    - Documentation of the route(s) of exposure and circumstances under which the exposure occurred;
    - If available, results of the source individual's blood testing; and
    - All medical records relevant to the treatment of the employee.
    - Within 15 days, DBJV shall obtain and provide the employee with a copy of the healthcare professional's written opinion. The information shall be limited and comply with 29 CFR 1910.1030.
- All medical records shall be maintained in accordance with OSHA Recordkeeping requirements.

28.5 Hazard Communication

Labels

- Warning labels shall be affixed to all containers used to store or transport blood or other potentially infectious materials. Red bags or red containers may be substituted for labels.

- All Labels must include the Biohazard Legend.

- All labels will be orange or orange-red with the lettering and symbols in contrasting color.
- All labels will be affixed as close as feasible to the container by whatever means that prevents their loss or unintentional removal.

Information and Training

- First Aid and CPR training shall be given to all First Aid Provider candidates before initial assignment. This training certificate will be valid for 2 years after the class has been successfully completed.
- Bloodborne Pathogens training shall be given to all First Aid Providers on commencement of their completion of the First Aid/CPR training course and thereafter, on an annual basis.
- Additional training, for First Aid, CPR and/or Bloodborne Pathogens will take place if there is any modification of tasks or procedures or institution of new tasks or procedures that affect the employee's occupational exposure.
- All training shall be in compliance with the National Safety Council First Aid, CPR and Bloodborne
- Pathogens training curriculum.
- Bloodborne Pathogens training shall be provided at the time of initial assignment and within 1 year of previous training

28.6 Recordkeeping

All training records relating to 29 CFR 1910.1030 shall be kept in the Safety and Environmental Department, and shall be maintained in accordance with the Standard.

Medical Records

- Employee medical records shall be provided to the employee, to anyone having written consent of the employee, to the Director and to the Assistant Secretary in accordance with 29 CFR 1910.1020.

Training Records

- Training records shall be maintained for 3 years from the date on which the training occurred.
- Training records shall be available to the employee, to employee representatives, to the Director, and to the Assistant Secretary.

Sharps Injury Log

- A sharps injury log shall be established and maintained at the job for the recording of injuries from contaminated sharps.
- All sharps injury must be entered on the OSHA 300 log and in compliance with 29 CFR 1904.

29 Excavation

29.1 Purpose

The purpose of this program is to establish guidelines for jobs requiring the trenching and excavation operations. Trenching and excavation is not only potentially hazardous but is almost always a component of a project. The precautions necessary for a safe excavation must be considered in the planning process and continually monitored during the actual operation. We will take these precautions, and any other deemed necessary to keep our employees, the environment and the public safe during trenching and excavation operations.

Applicable Regulations

OSHA 29 CFR 1926.650-652

29.2 Responsibilities

Project Management shall:

- Ensure that there is a competent person supervising all trenching and excavation operations;
- Identify a qualified person as the Competent Person for trenching and excavation; this person's knowledge of trenching and excavation will be consistent with the specifications listed in this program;
- Ensure that subcontractors have identified a qualified person whose knowledge of trenching and excavation is consistent with the requirements listed in this program; and
- Enforce the requirements of this program. Subcontractors shall:
- Identify their competent person prior to starting any trenching or excavation operation; and
- Train their employees in the requirements identified in this section.

29.3 General Requirements

All excavations, boring and drilling operations and adjacent areas must be inspected by a Designated Competent Person daily, after every rainfall, as soil conditions change and as needed throughout the shift. These inspections will be documented. A sample Daily Excavation Inspection Checklist can be found at Appendix C-16.

Competent Person:

- A competent person must supervise all trenching and excavations; and
- A competent person is 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.

Surface Encumbrances:

- All surface encumbrances such as signs, poles, and foundations that create a hazard shall be removed or supported to safeguard employees.

Underground Utility Precautions:

- Reviewing drawings and contacting One Call or Miss Utility or other entity shall determine all utilities expected to be encountered during excavation work;
- Utility companies and owners shall be given adequate time based on local practice to respond;
- If they do not, work can proceed provided detection equipment is used;
- If any damage occurs to any line, work shall be terminated and the utility owner contacted;
- Work may only proceed after the utility company gives authorization;
- When approaching the estimated location of the underground installation, hand digging or alternative safe method will be used; and
- While the excavation is open, underground installations shall be protected, supported or removed as necessary to safeguard employees.

Access and Egress:

- A stairway ladder or ramp shall be provided in all trench excavations 4 feet or more in depth.
- Employees must not have to travel more than 25 feet to obtain the access;
- If a ramp is selected, the employee must be able to exit the excavation in an upright posture without having to scale the slope; and

- All structural member of ramps and runways shall be of uniform thickness.

Exposure to Vehicular Traffic:

- Employees exposed to vehicular traffic will wear high visibility vests.

Exposure to Falling Loads:

- Employees shall not be under any loads handled by equipment; and
- Employees shall be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials.

Warning System for Mobile Equipment:

- If the operator has an obstructed view or is adjacent to the excavation, a barricade or signaling system will be utilized.

Hazardous Atmospheres:

- Where oxygen deficiency (atmospheres containing less than 19.5 percent oxygen) or a hazardous atmosphere exists or could reasonably be expected to exist, such as in excavations in landfill areas or excavations in areas where hazardous substances are stored nearby, the atmospheres in the excavation shall be tested before employees enter excavations greater than 4 feet in depth;
- A ventilation system will be utilized and monitored by the competent person should hazardous atmospheres be encountered; and
- Emergency rescue equipment such as a harness, stokes basket, or breathing apparatus will be available where hazardous atmospheric conditions exist or may reasonably be expected to develop.

Water Accumulation

- Employees shall not work in excavations in which there is accumulated water, or in excavations in which water is accumulating;

- Employees may re-enter the excavation only after adequate precautions have been taken to protect employees against the hazards;
- Controls may include support or shield systems, pumps, or safety harness and lifeline; and
- A competent person will monitor these controls. Stability of Adjacent Structures
- All adjacent structures such as buildings, sidewalks, pavement, etc. shall be shored, braced, or underpinned; and
- Excavations below footings or foundations are not permitted unless they are supported, in stable rock or designed by a registered professional engineer.

Protection of Employees from Loose Rock or Soil:

- All excavations shall be scaled to remove loose material that could pose a hazard by falling or rolling into the excavation; and
- All spoil piles shall be kept in a minimum of 2 feet from the edge of the excavation, or by the use of a sufficient retaining device, or by both.

Inspections:

- The competent person shall inspect all excavations daily and when conditions of the excavation have changed; and
- No employee shall be allowed to work in any excavation that the competent person deems unsafe.

Fall Protection:

- Walkways over excavations shall have proper guardrails; and
- Adequate barriers shall be provided around the perimeter of remote excavations.

29.4 Soil

General:

- All soil shall be considered Type C until otherwise determined by a competent person; and
- The classification of the deposits shall be made on the results of at least one visual and one manual analysis.

Visual Tests:

- A visual test must be performed and include observing the soil during excavation specifically looking for cohesiveness, cracks, layered systems, surface water, vibration, other existing underground structures, etc. which can affect the stability of the excavation.

Manual Analysis:

One of the following tests shall be performed along with the visual test:

- Plasticity – mold a moist or wet sample of soil into a ball and attempt to roll it into threads as thin as 1/8-inch in diameter. Cohesive material can be successfully rolled into threads without crumbling. For example, if at least a two-inch length of 1/8-inch thread can be held on one end without tearing, the soil is cohesive;
- Dry Strength – if the soil is dry and crumbles on its own or with moderate pressure into individual grains of fine powder, it is granular. If the soil is dry and falls into clumps that break up into smaller clumps, but the smaller clumps can only be broken up with difficulty, it may be clay in any combination with gravel, sand or silt. If the dry soil breaks into clumps which do not break up into smaller clumps and which can only be broken with difficulty, and there is no visual indication the soil is fissured, the soil may be considered unfissured;
- Thumb penetration – the thumb penetration test can be used to estimate the unconfined compressive strength of 1.5 tsf can be readily indented by the thumb; however, they can be penetrated by the thumb only with very great effort. Type C soils with an unconfined compressive strength of 0.5 tsf can be easily penetrated several inches by the thumb, and can be molded by light finger pressure. This test should be conducted on an undisturbed soil sample, such as a large clump of soil, as soon as practicable after excavation to keep to a minimum the effects of exposure to drying influences;
- Pocket penetrometer – this device will provide the compressive strengths of soils and can be obtained by contacting the Safety Director.

After performing a visual and manual test you can then determine the soil classification. They include:

- Stable rock – natural solid mineral matter that can be excavated with vertical sides remaining intact while exposed;
- Type A – cohesive soils with an unconfined compressive strength of 1.5 tons per square foot (tsf) or greater. This soil is highly cohesive and generally contains a significant clay content or is a cemented soil;
- Type B – cohesive soil with an unconfined compressive strength greater than 0.5 tsf, but less than 1.5 tsf. This soil is less cohesive than Type A and can include certain angular gravel as well as previously disturbed soils that are well compacted; and

- Type C – cohesive soil with an unconfined compressive strength of 0.5 tsf or less. This soil is the least stable, having little or no cohesive properties and includes most granular soil.

29.5 Protective Systems

General:

- All employees shall be protected while working in an excavation by the use of a protective system unless the excavation is to be measured as its greatest vertical dimension;
- Trenches less than five (5) feet in depth must be sloped or shored if they are in unstable soil;
- Although a three (3) foot trench is less than the height of a worker, it still can pose a threat to workers in a stooped or kneeling position;
- No sidewalk or structure shall be undermined unless shored; and
- A registered professional engineer must design any protective system.

Slopes:

- Sloped trenches and excavations shall be consistent with the following table:

Table 31 A – Excavation Slopes

Maximum Allowable Slopes		
Stable Rock	Vertical	90 Degrees
Type A	¾ h : 1 v	53 Degrees
Type B	1 h : 1 v	45 Degrees
Type C	1 ½ h : 1 v	34 Degrees

- A short term maximum allowable slope of ½h:1v (63º) is allowed in excavations in Type A soil that are 12 feet or less in depth;
- Short term maximum allowable slopes for excavations greater than 12 feet in depth shall be ¾h:1v
- (53º); and
- Refer to sloping diagrams.

Timber Shoring and Aluminum Shoring

- When selecting either timber or aluminum shoring systems the competent person shall use Tables C and D;
- When using manufacturers data it will be built in accordance to specifications and recommendations. Any deviation will only be allowed with the manufacturers approval;
- All data must be kept on the jobsite during construction and use of the system; and
- Refer to all diagrams.

Designs by a Registered Professional Engineer:

- Designs shall be in written form and include sizes, types and configurations of the materials to be used; and
- The design must be properly stamped and at least one copy kept at the jobsite during construction and use of the system.

Materials and Equipment:

- Material used for the systems must be free from damage that may impair their function;
- Manufactured material shall be used per their recommendations;
- The competent person shall examine material that has been damaged and evaluate if it can be used. If not sure, a Professional Engineer must be utilized;
- Installation and removal of support – members of support systems shall be securely connected;
- Support systems shall be installed and removed in a manner that protects employees;
- Individual members of support systems shall not be subjected to loads exceeding those which those members were designed to withstand;
- Before temporary removal of individual members begins, additional precautions shall be taken to ensure the safety of employees, such as installing other structural members to carry the loads imposed on the support system;
- Removal shall begin at, and progress from, the bottom of the excavation;
- Backfilling shall progress together with the removal of support systems from excavations; and
- Do not excavate more than 2 feet below the bottom member of a support system unless it is so designed.

Shield System / Trench Box:

- Shield systems shall not be subjected to loads exceeding those that the system was designed to with stand;
- Shields shall be installed in a manner to restrict lateral or other hazardous movement of the shield in the event of the application of sudden lateral loads;

- Employees shall be protected from the hazard of cave-ins when entering or exiting the areas protected by shields;
- Employees shall not be allowed in shields when shields are being installed, removed, or moved vertically;
- Do not excavate more than 2 feet below the bottom of a shield unless it is so designed; and
- The manufacturer's data sheet for all rented trench boxes will be kept on site during their use. The data sheets for all subcontractor owned trench boxes will be kept on site and a copy forwarded to the DBJV Safety Department.

30 Fall Protection

30.1 Purpose

The purpose of this program is to develop, implement, enforce and maintain a system that creates 100% fall protection for our employees that work in an environment six feet or higher off of the ground or when hazards below six feet dictate enforcement at lesser height. By providing our employees with a fall protection system that guarantees 100% protection, we believe that our employees work efforts can be maximized and used as efficiently as possible.

Applicable Regulations

OSHA 29 CFR 1926.500-503

30.2 Responsibilities

Project Management shall:

- Provide the most feasible form of fall protection when a fall hazard 6 feet or greater exists;
- Exposure engineering controls to eliminate fall hazards completely before instituting the use of fall protection systems;
- Write a fall protection plan (according to details outlined in this program) when conventional fall protection systems are infeasible or create a more serious hazard to workers;
- Purchase fall protection equipment or ensure the construction of fall protection systems meet the requirements of ANSI, ASTM and OSHA specifications;
- Ensure personal fall arrest systems are used properly;
- Appoint a Competent person to supervise a fall protection plan under the control of a qualified person. This person shall have the ability to recognize and warn employees of fall hazards and have the authority to stop work;
- Appoint a qualified person when the use of a Horizontal lifeline shall be designed, installed, and used. The qualified person shall supervise all of the design installation and use as part of a complete fall arrest system, which maintains a safety factor of at least two;
- Train employees in topics identified in this program;
- When an accident or near miss occurs that involves fall protection issues, the fall protection plan for the project shall be reviewed for potential updates of procedures or training in order to prevent a reoccurrence;

- Identify and provide means of rescue in the event of a fall of an employee when using fall protection systems.

Employees shall:

- Use all fall protection systems according to the direction of their immediate supervisor;
- Inspect their personal fall arrest systems for damage or wear before every use; and
- Remove any damaged, defective or worn personal fall arrest equipment from service.

30.3 Procedures

Restriction:

- Use of arborist saddle suspended from crane is prohibited (Z 133 5.7.9).

Guardrail systems:

- Standard rail will consist of:
    - Top rail – 42 inches plus or minus 3 inches. When wire rope is selected it shall be at least ¼ inch and shall be flagged at 6' intervals with high visibility material such as caution ribbon;
    - Mid-rails – must be installed half way between top edge of guardrail and the walking/working surface; and
    - Toeboard – must be minimum 1 x 4" lumber or equivalent.
- When wood railings are used, the posts shall be at least 2-inch by 4-inch lumber spaced not more than 8 feet apart on centers; the top rail shall be at least 2-inch by 4-inch lumber; the intermediate rail shall be at least 1-inch by 6-inch lumber;
- When pipe railings are used, posts, top rails, and intermediate railings shall be at least 1-1/2 inches nominal diameter (schedule 40 pipe) with posts spaced not more than 8 feet apart on centers;
- When structural steel railings are utilized, posts, top rails and intermediate rails shall be at least 2-inch by 2-inch by 3/8-inch angles, with posts spaced not more than 8 feet apart on centers;
- Guardrail systems shall be capable of withstanding, without failure, a force of at least 200 pounds applied within 2 inches of the top edge, in any outward or downward direction, at any point along the top edge;
- A maximum allowable deflection in the system will not exceed 3-inches;
- Guardrail systems shall be so surfaced as to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing;

- Duplex nails are not allowed in the construction of handrails and
- When guardrail systems are used at access ways and hoisting areas, a chain, gate or removable guardrail section shall be installed.

Safety Nets:

- Safety nets shall never be relied upon as a sole form of fall protection;
- Nets are designed to provide fall arrest under or around an elevated surface such as a bridge or steel structure, and are typically used on projects that are long-term nature unless other means of protection is impractical;
- The following criteria must be met when using nets:
    - Place nets as close to the work as possible, and not more than 30 feet below the work surface;
    - Install nets so the weight does not come into contact with any lower surface when dropped;
- Extend the net outward from the outermost projection of the work surface as follows:

Distance Below Work Surface	Projection Distance
Up to 5 feet	8 feet
5 to 10 feet	10 feet
Over 10 feet	13 feet

- Mesh openings shall not exceed six (6) inches by six (6) inches;
- All scrap material that may have fallen into the net shall be removed as soon as possible to help ensure a fallen employee's protection;
- Nets shall be drop tested, using a 400 lb bag of sand dropped from 42 inches above the highest working surface that employees would be exposed to a fall, on the following occasions:
    - Immediately after installation;
    - Prior to beginning work in the area;
    - After relocation;
    - Following any repairs; or
    - At six month intervals if left in one place.

- A copy of the test results shall be maintained at the jobsite;
- If it is unreasonable to perform a test drop, a competent person may certify its compliance with the standards;
- The compliance certificate must include the identification of the net and its installation, date it achieved compliance and the signature of the competent person. This certification must be located at the jobsite;
- Due to the potential liabilities involved with the certification process, all safety nets installed shall be certified by an independent engineer or drop tested;
- All defective nets shall be immediately removed from service;
- A border rope for webbing capable of withstanding a minimum breaking strength of 5,000 pounds must be used;
- Connections shall be as strong as the integral net components and not spaced greater than six (6) inches apart; and
- All nets will be inspected on a weekly basis for wear, damage or other deterioration, and after any occurrence that could affect the integrity of the net.

Warning Line System:

- Warning line systems can be an effective restraint method for working on elevated slabs or roof;
- Warning lines should be set up around the work are and be a minimum of six (6) feet back from any unprotected or leading edge;
- Lines should be 36” high and flagged every six feet to ensure visibility. They should withstand a minimal side load to avoid tipping over; and
- Access shall be a path formed by two warning lines leading to the work area.

Safety Monitoring System:

- On roofs 50 feet or less in width OSHA allows an employee to serve as a monitor where fall protection is not feasible;
- A safety monitoring system will NOT be used without Safety Director approval; and
- If approved, a detailed, site specific, Fall Protection Plan will be developed.

Covers:

- Covers will be placed and labeled “open hole” on any holes in walking/working or road surfaces that present fall hazards;
- Covers will be capable of supporting, without failure, at least twice the maximum weight of employees, materials and equipment; and
- Holes in roadways will be capable of supporting, without failure, at least twice the maximum axle load of the largest vehicle expected to cross over the cover.

30.4 Personal Fall Arrest Systems

General:

- All lanyards and harnesses must be inspected quarterly by the Contractor's Designated Competent Person and prior to use by employee using equipment (See Appendix C-24);
- All personal fall arrest equipment shall be inspected prior to use;
- Any damaged, defective or worn equipment must be removed from service;
- Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service; and
- The project must provide for prompt rescue of employees in the event of a fall or shall assure that employees are able to rescue themselves.

Full Body Harness/Lanyards:

- Approved full body harnesses are to be used when a personal fall arrest system must be used;
- Note: The only exception is for lineman performing power transmission work. Refer to OSHA 1926.959 for specific requirements;
- All lanyards shall be shock absorbing with a locking type snap hook. The anchorage point must be able to withstand a load not to exceed 5,000 pounds; and
- The attachment point of the body harness shall be located in the center of the wearer's back near shoulder level, or above the wearer's head.

Self-Retracting Lifelines (Yo-Yo's):

- Self-retracting lifelines when used will be inspected prior to use by the supervisor responsible for the fall protection system;
- The supervisor will ensure the anchorage and use will not injure the worker due to a "pendulum" effect.
- The anchorage point must be able to withstand a load not to exceed 5,000 pounds; and
- Self-retracting lifelines shall be inspected prior to use for damage and for proof of annual inspection.

Horizontal/Vertical Lifelines:

- Lifelines shall be designed, installed, and used, under the supervision of a qualified person and maintain a safety factor of at least two;
- Lifeline systems will be engineered by a qualified engineer prior to use and should consider at a minimum:
    - The number of personnel tied to the lifeline;
    - The size of wire rope to be used. It shall be a minimum 7 x 19-3/8" galvanized aircraft cable. This should provide adequate protection for 2 people using deceleration devices;
    - Distance between anchorage points (slack);
    - Obstructions, permanent material, etc. which may cause injury should a person fall;
    - Emergency rescue in case of a fall; and
    - Synthetic rope may only be used for vertical applications prior to selection: exposures to UV rays, extreme weather, abrasion activities and type of work to be performed (i.e. hot work) can all degrade the rope to an unsafe condition and must be considered.

Ladder Climbing Safety Devices and Rope Grabs:

- These devices are attached to a vertical line and allow protection during climbing operations;
- They can either be synthetic or wire rope;
- Models that require hand manipulation are unacceptable; and
- Where a lanyard is incorporated in the system, the device must always be overhead to limit fall distance.

30.5 Fall Protection Plan

General:

- A fall protection plan will be instituted for leading edge work \ that make conventional fall protection systems infeasible or create a greater hazard;
- The plan will be site specific and developed and maintained up-to-date by a qualified person;
- Any changes to the plan will be approved by a qualified person;
- A copy of the plan will be maintained on the jobsite;
- A competent person will implement the plan;
- In the event an employee falls or a near miss occurs during the use of a safety monitoring system, an inspection will take place to identify the cause of the accident; and
- Modifications will be made to the plan to prevent similar occurrences.

Components:

- The plan will detail the measures taken to protect employees from fall hazards;
- The plan will detail why conventional fall protection systems are infeasible or create a greater hazard to workers;
- The plan will detail why a safety monitoring system or a controlled access zone is the only feasible means of fall protection; and
- The plan will identify safety monitors or employees designated to work in controlled access zones.

30.6 Training

Each employee must be trained in:

- The recognition of fall hazards and procedures to follow to minimize these hazards;
- Proper procedures for erecting, maintaining, disassembling and inspecting of fall protection systems they will use;
- The role of employees in the fall protection plan (including safety monitoring systems if used); and
- OSHA requirements regarding fall protection.

Training shall be documented and shall contain: who was trained, dates of training, and signature of person providing training.

Retraining will be provided when:

- Deficiencies in training are observed;
- The work place changes; or
- Fall protection systems or equipment changes that render previous training obsolete.

Retraining shall be documented and shall contain: who was trained, dates of training, and signature of person providing training

31 Fire Prevention and Protection

31.1 Purpose

The purpose of this program is to establish procedures for work site fire protection and prevention measures. AI will also take all necessary measures to protect our employees from fire hazards and the hazards associate with flammable liquid storage, temporary heating devices and LP Gas and Propane.

Because the above listed equipment holds the possibility for extensive property damage and extreme worker injury, the rules regarding their use listed in this program will be strictly adhered to.

Applicable Regulations

OSHA 29 CFR 1926.150-155

31.2 Responsibilities

Project Management shall:

- Purchase only ABC Fire Extinguishers;
- Ensure that all equipment with an internal combustion engine is equipped with a fire extinguisher;
- Conduct an inspection covering Fire Prevention on a weekly basis as part of the Safety walkthroughs;
- Fire Extinguishers must be visually inspected by the Contractor's Designated Competent Person on a monthly basis. The results of the inspection shall be documented on the Fire Protection Inspection Verification form (See Appendix C-25).
- Train employees in requirements identified in all sections of this program;
- Purchase LP Gas or Propane equipment according to the specifications set out in this program; and
- Designate a person to use a soap and water solution to detect leaks in propane tanks; tanks should be corrected immediately upon notice.

Employees shall:

- Correctly store flammable liquids according to this program; and

- Correctly store LP Gas or Propane according to the specifications listed in this program.

31.3 Fire Extinguishers

General:

- All fire extinguishers will be a ABC Cartridge-type, except for the 2½ lb. Extinguishers kept in company vehicles; and
- Extinguishers will be inspected monthly for theft, damage, leakage, discharge and block accessibility. Metal tags or equivalent will be used to signify proof of inspection.

Location:

- An ABC Cartridge-type extinguisher will be installed on:
    - Connex boxes;
    - Welders;
    - Cranes;
    - Mechanics trucks;
    - Service trucks;
    - all combustible engine equipment; and
    - Compressors.
- Extinguishers shall be kept readily available during any hot work operation;
- A 2½lb. Extinguisher will be installed in all company vehicles;
- At least one portable fire extinguisher shall be located not less than 24 feet, nor more than 75 feet, from any flammable liquid storage area located outside;
- Mount two (2) extinguishers to all fuel and lube trucks according to the following guidelines:
    - Do not mount the fire extinguishers so close together that both could be made inaccessible by a localized fire;
    - Mount them in locations where they will not be knocked off or clogged with mud and ice in the winter; and
    - If an extinguisher is mounted inside a cabinet, be sure that it will not become blocked by loose equipment. Put a sign on the cabinet to indicate that a fire extinguisher is located inside.

31.4 Fire Response

Alert others and evacuate the area:

- The first action to take when a workplace fire is detected is to alert others of the fire.
- Perform an orderly evacuation according to your site-specific evacuation plan.

Call the Fire Department:

- It is important to call the fire company as quickly as possible to minimize the damage;
- Emergency telephone numbers should be posted by telephones. As with all emergency telephone calls, be prepared to give the specific location, telephone number where you are calling from, your name, and what has happened; and
- Do not hang up first. The dispatcher may need more information. Wait until they hang up.

Decide if it is safe to fight / control the fire:

- Only attempt to control a fire if you have been properly trained to do so;
- The only means employees will use to fight a fire is a fire extinguisher; and
- We use ABC cartridge-type extinguishers which are designed to fight all types of fires except those involving combustible metals (i.e. magnesium) which will not commonly be found on our projects.

Discharge the Fire Extinguisher:

- Remove the extinguisher from the bracket;
- Slam the extinguisher, bottom first onto a hard surface (this will break up any caked powder inside);
- Remove the hose from its storage position;
- Pull the pin, push firmly on the “Push” button to activate the CO2 charge; and
- Squeeze the extinguisher nozzle, point at the base of the fire and use a sweeping motion to fight the fire. Empty the entire extinguisher!

31.5 Flammable Liquid Storage

General:

- Only approved containers and portable tanks shall be used for storage and handling of flammable and combustible liquids;
- Flammable or combustible liquids shall not be stored in areas used for exits, stairways, or normally used for the safe passage of people;

- Structural design requirements for storage of hazardous waste, flammable and non-flammable chemical material:
    - Waste containers must be accumulated on a firm working base, such as asphalt or concrete. The base must be impervious and have a minimum thickness of four inches. There shall be a berm of at least six inches around the base or allocation enclosed by walls; and
    - The storage structure must have a containment and collection system that is capable of holding in excess of twenty percent (20%) of the total capacity of all containers or one hundred ten percent (110%) of the capacity of the largest container or tank, whichever is greater.

Indoor Storage:

- Design specifications for inside storage rooms are stated in the Standard methods of Fire Tests of Building Construction and materials, NFPA 251-1995.
- An inside storage room must be designed in a manner that renders it liquid tight and provides adequate fire resistance to adjoining building areas. The boundary between the walls and floor must be sealed so that liquid cannot leak through. Openings to other rooms must be non-combustible, liquid tight raised sill or ramps that are at least 6 inches in height. An allowable alternative is to make the floor in the storage area 6 inches lower than the floors in the adjoining rooms. The floor must be constructed of a liquid tight material;
- All transfers of flammable chemicals performed inside a building must be done in the flammable chemical storage area. If there is another room in the building that is separated from other operations in the building, or that is protected by walls with adequate fire resistance, and that is provided with adequate ventilation, then flammable chemical transfers can also be performed in that area;
- The quantity of flammable and combustible chemicals stored outside of the flammable chemical storage cabinet and inside a building must be limited. The following limits are set by OSHA:
    - 25 Gallons of Class 1A liquid in containers;
    - 120 Gallons of Class 1B, 1C, II or III liquids in containers; and
    - 660 Gallons of class 1B, 1C, II OR III liquids in single portable tank.
- OSHA also limits the quantity of flammable chemicals that can be stored in a flammable chemicals storage cabinet. The following limits are set by OSHA: no more than 60 gallons of Class I or Class II liquid nor more than 120 gallons of a Class III liquid inside a storage cabinet. When cabinets are used, these shall be vented to an outside area free from external hazards;
- Indoor storage includes building, shops and ventilated connex boxes;
- Cabinets should be labeled “Flammable – Keep Fire Away”;
- At least one portable 20lb. ABC extinguisher shall be located outside of, but not more than 10 feet from, the door opening into any room used for storage of more than 60 gallons of flammable or combustible liquids;
- Lighting fixtures shall be an explosion proof type, and general storage area(s) ventilated; and

- Inside storage of flammable liquids or other hazardous materials is discouraged and should be stored in small detached structures or out of doors and not inside buildings.

Outdoor Storage:

- Storage of containers (not more than 60 gallons each) shall not exceed 1,100 gallons in any one pile or area;
- Piles or groups of containers shall be separated by a 5-foot clearance;
- Piles or groups of containers shall not be nearer than 20 feet to a building. Minimum distance will also be maintained between the storage area, property lines, and streets, alleys or public ways. For Class I liquids, a minimum distance of 20 feet will be maintained between the flammable chemical storage area and the property line. At least 10 feet of distance must be maintained between the storage area and any street, alley or public way;
- Within 200 feet of each pile of containers, there shall be a 12-foot-wide access way to permit approach of fire control apparatus;
- The storage area shall be graded in a manner to divert possible spills away from buildings or other exposures, or shall be surrounded by a curb at least 6 inches high. When curbs or dikes are used, provisions shall be made for draining off accumulations of ground or rainwater, or spills of flammable or combustible liquids. Drains shall terminate at a safe location and shall be accessible to operation under fire conditions;
- An outside storage building that is located fifty (50) feet or less from another building or adjoining property line must have a blank wall in the exposing side with a fire resistance rating of at least two (2) hours;
- Storage areas must be secured against tampering by trespassers and should be kept free of weeds, debris, or other combustible materials not necessarily in the storage area. It is advisable to provide a covering over all containers; and
- Lighting fixtures used in outdoor flammable chemical storage areas should be at least 8 feet above the containers. If the fixtures are between 5 and 8 feet above the containers, an explosion proof lighting and electrical system must be used.

Outdoor Portable Tank Storage

- Portable tanks shall not be nearer than 20 feet from any building;
- A 5-foot clear area having a combined capacity in excess of 2,200 gallons shall separate two or more portable tanks, grouped together;
- A 5-foot-clear area shall separate individual portable tanks exceeding 1,100 gallons;
- Within 200 feet of each portable tank, there shall be a 12-foot-wide access way to permit access for the fire department;
- Storage areas shall be kept free of weeds, debris, and other combustible material not necessary to the storage;

- At least one portable fire extinguisher shall be located not less than 25 feet, nor more than 75 feet, from any flammable liquid storage area located outside; and
- Each tank shall be labeled: "(Contents of Tank) – Flammable, No Smoking".

31.6 Temporary Heating Devices

General Requirements:

- Combustible materials must be kept at least 10' away from heating devices. This includes trash, tarpaulins, plastic covers, straw, cloth, paper, scrap lumber, sawdust and anything else that can burn;
- Fire barrels are not allowed on any project;
- Do not allow clothes, gloves, shoes, etc., to be placed on, overhead, or immediately next to a heater,
- Never store compressed gas (acetylene, propane, etc), gasoline, diesel fuel, paint thinner, or any flammable liquid in a trailer or room where a temporary heating device is in use;
- Do not allow paint or thinner to be sprayed in areas where a heater may ignite the explosive;
- Make sure there is an easy escape route in case a heater malfunctions;
- Keep fire extinguishers readily available and fully charged. Make sure everyone knows how to use them properly; and
- Inspect the entire heating unit frequency for any defects, leaks or worn parts. Make repairs immediately.

Combustion Heaters:

- Adequate ventilation must be provided. These devices produce highly poisonous carbon monoxide gas that can be fatal. Combustion heaters also require large amounts of oxygen to burn. Confined areas can be extremely dangerous. You can pass out and die from oxygen starvation without ever feeling it. Simple test equipment is available to check the level of oxygen and carbon monoxide;
- Automatic shut-off valves are required to stop the flow of gas or oil anytime the flame goes out;
- Refueling shall be done only after the heater has been turned off and has had time to cool down;
- Safety cans are required for all flammable liquids (including diesel fuel) and shall be used along with funnels or spouts to prevent spills; and
- Read manufacturer's instructions before lighting a heater.

Electric Heaters:

- All electric heaters must be properly grounded and used in a dry area to prevent electric shock;

- An automatic shut-off must be built into the unit to turn if off if it is tipped over; and
- Care must be taken to keep electric cords out of mud, snow, ice and water. Cords covered with snow and ice may be unknowingly run over and damaged.

31.7 LP Gas/Propane Requirements

Equipment specifications:

- Each system shall have containers, valves, manifolds, assemblies, and regulators of an approved type and in good repair;
- Valves and fittings connected directly to the container shall have a rated working pressure of at least 250 p.s.i. (check with supplier);
- Every container and every vaporizer shall be provided with one or more approved safety relief valves or devices. These valves shall be arranged to afford free vent to the outer air;
- Portable heaters shall be equipped with an approved automatic device to shut off the flow of gas to the main burner;
- Heaters shall be equipped with an approved regulator in the supply line between the fuel cylinder and the heater unit; and
- Cylinders connectors shall be provided with an excess flow valve to minimize the flow of gas in the event the fuel lines become ruptured.

Storage:

- Containers shall be upright upon firm foundations or otherwise firmly secured (tied off);
- Storage of propane cylinders within buildings or connex boxes is prohibited;
- Propane storage locations shall be provided with at least an approved portable 20 lb. ABC fire extinguisher;
- Quantities of propane between 500-6,000 pounds will be stored 10 feet from the nearest building; and
- Tanks shall be labeled with “NO OPEN FLAMES” sign clearly mounted.

Use:

- Improper use of propane heaters can result in serious bodily injury or property damage due to hazards of fire or explosion, carbon monoxide poisoning, burn and electrical shock;
- Containers, regulating equipment, manifolds, pipe, tubing, and hose shall be located to minimize exposure to high temperatures or physical damage;

- For temporary heating, heaters shall be located 6 feet from any LP-gas container. Blower and radiant type heaters shall not be directed toward any LP-gas container within 20 feet;
- Valves in the assembly of multiple container systems shall be arranged so that replacement of containers can be made without shutting off the flow of gas in the system;
- The minimum separation between propane and flammable sources such as compressors, light plants etc., will be 25 feet. Ignitable material will be removed within 10 feet of the container;
- Use of soap and water solution to detect leaks. Leaks should be corrected immediately upon notice; and
- No welding on containers or tanks.

32 Hazard Communication

32.1 Purpose

The purpose of this program is to communicate the hazards associated with the materials and chemicals. By correctly educating our employees about the chemicals they work with, they will be better prepared to protect themselves and the environment.

This program will also apply to subcontractors on all of our worksites because they may use materials and/or chemicals that are hazardous to their employees as well as ours.

Applicable Regulations

OSHA 29 CFR 1926.59

OSHA 29 CFR 1926.1200

32.2 Responsibilities

Safety Department:

- Shall oversee Hazard Communication program; and
- Audits will be carried out on a periodic basis to ensure this program is in effect.

Project Management shall:

- Appoint HazCom coordinator;
- Evaluate materials and chemicals before purchase for potential hazards and explore the use of less dangerous substitutes as per the Health and Safety program;
- Develop a procedure for obtaining Safety Data Sheets (SDS);
- Ensure that an SDS has been obtained for any hazardous chemical on site prior to its use and include in appropriate construction plans;

- Conduct general awareness Hazard Communication training, at least once a year, and thereafter as required;
- Keep an inventory of all hazardous chemicals on site;
- Make SDS, Chemical Inventories and this Hazard Communication Program available to employees at all times, communicate the location of the above items to all employees;
- Project Management shall post Notice of HazCom and Location;
- Project Management shall inform employees of the hazards of non routines tasks and the hazards associated with chemicals contained in unlabeled pipes by way of the beginning of shift huddles or stop work authorization communication process;
- Project Management team shall act as the depository for all subcontractor MSDS programs and lists on a multi-employer job site and, where necessary, pass this information onto Construction Management as defined by the contract.

Employees shall:

- Review SDS, as part of the Job Hazard Analysis, for materials and/or chemicals prior to their use;
- Not use any chemical that has a missing or illegible label;
- Not use any chemical for which they are not authorized; and
- Be informed of the hazards of non-routine tasks and the hazards associated with chemicals contained in unlabeled pipes through the beginning of shift huddles or stop work authorization process.

32.3 Procedural Overview

Safety Data Sheets (SDS):

- Safety and Health Management Program for SDS will detail roles and responsibilities on obtaining and managing SDS;
- Every jobsite will maintain a file of SDS on every substance on the jobsite;
- These SDS will be available to all employees upon request; and
- A flagging procedure to ensure that all required SDS are received and kept current will be established.

Labels:

- All material received at jobsites will be properly labeled;
- If labels are not provided, the appropriate supplier will be contacted in order to obtain the required labels;

- All information contained on labels will comply with Federal, State and local laws and/or regulations and include the identity of the chemical products or substances in the container, hazard warnings and names and addresses of the manufacturer, importer or to the responsible parties;
- All containers of chemical products, including laboratory bottles, solvent cans, and dispensers will be labeled. Container labels will not be removed and will be replaced if illegible;
- For smaller containers (less than one gallon of 3.7 liters), labels will be consistent with standards stated above;
- Only those chemicals that can be classified "For Immediate Use" (this means the hazardous chemicals are under the control of and used only by the person who transfers it from the labeled container and only with the work shift during which it is transferred) are exempted from the stated labeling procedures;
- In storage areas where similar chemical products are stored, signs or placards to identify the material may be posted in lieu of container labels;
- If any hazardous materials are transferred from a storage tank or container through a pipeline, labels with the required information will be affixed to the line at the discharge point (valve); and
- If a chemical product other than that specified on the container label is placed in a container, the container will be re-labeled to accurately reflect the hazards of the current contents.

32.4 Training

General:

- Hazard Communication training will be performed as part of the New Hire Orientation;
- HazCom topics will also be revisited during weekly safety toolbox meetings;
- General awareness training on Hazard Communication for all employees, at least annually; and
- Specific training will be provided for materials and/or chemicals the employee will be exposed to during his day-to-day operations, as part of Job hazard analysis, and whenever a new physical or health hazard, the employees have not been trained about, is introduced the work area

33 Housekeeping (General Waste Management)

33.1 Purpose

This program specifies the procedure for the management, control and disposition of items designated as waste material for the Project, a list of the different categories of materials that will be generated during including but not limited to:

- Recyclable Materials
- Waste/Refuse Materials
- Reusable Material

The above types of waste shall be taken into consideration and a Construction Waste Management Plan put into place prior to commencement of any work activities (reference the Project Environmental Management Plan). The procedures for the management, control and disposition of these items are described in subsequent sections of this plan. All Project teams and subcontractors are required to identify, maintain proper control, and provide documentation for the disposition of materials described in this section.

Applicable Regulations

OSHA 29 CFR 1926.25

OSHA 29 CFR 1926.250

33.2 Responsibilities

Project Management:

- Ensure Planning General Waste Management at the project

Employees:

- Ensure cleaning all work areas

33.3 Procedural Overview

General Housekeeping:

- Housekeeping activities must minimize the amount of waste and maximize the amount of recyclable material that can be efficiently gathered at the local collection points and minimize the amount of refuse materials.
- The project team will assign housekeeping responsibility to a crew or an individual employee who will oversee and manage the field operations with regards to housekeeping and waste management.
- Any issues identified by this person will be discussed during the Project Schedule meeting.
- Work areas will be kept in an orderly manner at all times.
- Trash receptacles shall be provided throughout each jobsite and shall be dumped regularly to prevent overflow.
- Large waste receptacles, such as dumpsters, which would normally cause employees to have to reach up above their shoulders, are required to have a platform with steps and hand rails in place for employee access.
- Scrap materials and trash shall be disposed of as each task progresses and once the task is completed.
- Any extra materials from activities shall be returned to storage facilities at the end of each day.
- Useable scrap shall be retained in an organized scrap area away from the general work areas.
- Oily rags and waste oils shall be kept and disposed of separately in metal containers with tops.
- All scrap lumber, forms and crates with protruding nails shall have them pulled immediately.
- Glass drink bottles are not permitted at any time.
- Food waste shall be disposed of immediately as generated.
- All trailers and office space shall be kept in good, clean working order at all times.

Handling Waste and Debris:

- The following rules apply to handling waste and debris:
    - Waste materials should be handled as little as possible;
    - Waste and debris should be put into trash cans or dumpsters early in the disposal process so it can be handled mechanically rather than by hand;

- Employees handling waste materials will be trained prior to use through DBJV planning process, and shall comply with all requirements relating to manufacturer specifications.

- Trash Chute
    - Materials must never be dropped or thrown from any floor except in trash chutes.
    - A dumpster or truck shall be maintained at the bottom of the chute at all times. Materials shall be permitted from the chute if the bottom containment is not in place. Administrative controls shall be used to inform employees as to control methods.
    - A physical barrier shall be maintained around the trash receptacle at the bottom of the chute.
    - Caution signs shall be posted on the barrier to warn employees of potential hazard.

Materials Management:

- All material should be stored in weatherproof containers or otherwise protected from contamination and deterioration prior to use.
- Containers should be opened as needed and work should be sequenced to use materials efficiently and in a timely fashion. This ensures that the material meets the specified requirements and that unused or off-spec product will not become a waste. This procedure will be emphasized to all subcontractors

Licenses, Permits, Fees, and Taxes:

- All subcontractors working on the Project will be required to maintain and be responsible for all fees, licenses, permits, and taxes needed to comply with Federal, State, and Local Regulations and requirements.
- Each subcontractor will identify haulers or trucking firms they will be using on this project.

Recyclable Material:

- All material for recycling will be placed in designated containers.
- These containers will be labeled clearly and according to types of material.
- Material must be stored and handled so it is acceptable to the recycler.
- The project team will ensure containers are protected and where necessary provide secondary containment to protect the surrounding environment from contamination.

Dumpsters

- Individual Containers will be provided at the job site for local collection of material.
- The location of the containers and pickup/delivery will be coordinated by the Project team
- Pick-up Frequency shall be decided based on waste generation and shall be arranged at a frequency to prevent reduces the risk of overflow.

Empty Containers:

- A container that held any chemical or hazardous material, except a substance identified as an acute hazardous waste, is defined as an empty container if both of following criteria are met:
    - All material has been removed that can be removed using the practices commonly employed to remove material from that type of container, such as pumping, pouring, or aspirating; and
    - No more than 3% by weight of the total capacity of the container remains in the container.
- Containers with capacity of 25 gallons or less that meet above criteria may be placed in the appropriate recycling container (i.e., roll-off, hopper, and basket).
- Empty containers with capacity of greater than 25 gallons shall be managed separate from the recycle material collection containers. These containers shall be marked with words “Empty Container” and staged separate from the recycling collection containers until they have been inspected.
- Following inspection and acceptance they shall be managed according to the guidance.
- Any containers that hold an acutely hazardous substance shall be regarded as and managed as a hazardous waste. For procedures on hazardous waste refer to the environmental compliance program for Hazardous waste.

Non-Recyclable or Refuse Materials:

- It will be the responsibility of the Project Team and or subcontractor to load and transport all material identified as refuse to a designated landfill. This material may either be demolition debris or construction waste.
- Any permits required by the designated landfill site will be the responsibility of each subcontractor.
- The project management team will ensure that all procedures are followed.
- Permits will be valid throughout the duration of the project.
- These items will be tracked and documented.
- Personal trash such as papers, food containers, beverage cups, shall be bagged, removed from the site, and properly disposed of.

Fuel Storage Tank Requirements:

- All temporary fuel tanks shall be protected from collision on project sites by use of temporary road barriers or equal or greater strength
- All temporary fuel storage tanks shall have a means of secondary containment to prevent spills or containment from runoff.
- A 55 gallon spill kit shall be provided in near vicinity to the fuel storage area.
- At a minimum a 20 LB fire extinguisher shall be available
- No “Smoking signs ” shall be posted
- Follow Environmental Compliance program design criteria relating to temporary fuel storage areas.
- Containment requirements shall take account of the following:
    - Spills
    - Rain and water surface run

33.4 Documentation

- A record of each disposition activity (permits, landfill receipts, weight tickets, and any other receipts) will be maintained by Project Management.
- It is the responsibility of Project Management to collect and maintain documentation.

33.5 Training

- All employees shall be trained in good housekeeping practices and waste management control methods. Which shall include the following:
    - Proper methods of Storage and Disposal
    - Methods of containment for storage and dispensing
    - Emergency procedures to follow in the event of a spill

- Training will be delivered using the following methods.
    - New Hire Orientation
    - Subcontractor Site Orientation
    - Job Hazard Analysis
    - Plans or Planning Packets for Monthly Training Modules or Toolbox Talks

34 Illumination

34.1 Purpose

The purpose of this program is to ensure that adequate lighting is provided at all locations and during all work operations.

In addition to providing necessary illumination for our workers, we must ensure that adequate lighting is provided for pedestrian traffic that may be passing around our sites. This requirement is more often identified in project specifications and shall be strictly adhered to. Inadequate lighting in pedestrian areas leaves us exposed to general liability claims.

Applicable Regulations

OSHA 29 CFR 1926.56

34.2 Responsibilities

Project management shall:

- Ensure all work areas and operations comply with the corresponding illumination measurements identified in the Procedural Overview section of this program;
- Take periodic measurements to ensure the above standards are met. Records of measurements shall be kept with other sampling results; and
- Examine and ensure compliance with project contract specifications regarding illumination in pedestrian areas.

34.3 Procedural Overview

Jobsites shall be lighted to not less than the minimum illumination intensities listed in the following table while any work is in progress.

Table 37 A – Minimum Illumination Intensities in Foot-Candles

Foot-Candles	Area Of Operation
5	General Construction area lighting.
3	General construction area, concrete placement, excavation and waste areas, access ways, active storage areas, loading platforms, refueling, and field maintenance areas.
5	Indoors: warehouses, corridors, hallways, and exits.
5	Tunnels, shafts, and general underground work areas. (Exception: minimum of 10-foot candles is required at tunnel and shaft heading during drilling, mucking, and scaling. Bureau of Mines approved cap lights shall be acceptable for use in the tunnel heading).
10	General construction plant and shops (e.g. batch plants, screening plants, mechanical and electrical equipment rooms, carpenter shops, rigging lofts and active store rooms, barracks or living quarters, locker or dressing rooms, mess halls, and indoor toilets and work rooms).
30	First aid stations, infirmaries, and offices.

35 Ladders

35.1 Purpose

The purpose of this program is to establish our policy around the use of where ladders can or cannot be used. Ladders are a dangerous tool in the wrong hands and therefore DBJV will take steps to eliminate the use of ladders wherever feasible.

The project team will consider as part of the planning process access requirements, at height and/or below ground. As part of the planning process ladders will be considered the last solution. .

The following are to be considered preferred means of access:

- Stair towers,
- Scaffold access,
- Aerial lifts,
- Scissor lifts,
- Swing scaffolds
- Purpose built scaffold access platforms,
- Stairs
- Ramps

Project Management along with the Safety Department will review all of the above preferred options prior to selecting a ladder.

As part of the Risk Assessment Planning Process a Job Hazard Analysis will define the type of access, the hazards associated, and the controls necessary to reduce the risk to an acceptable level.

Where a ladder is determined as the option, the following rules and requirements shall apply.

35.2 Scope

The safe use of ladders, the proper design, maintenance and construction, and the proper use of access areas, used in construction, alteration, repair and demolition areas. Although potentially hazardous, following these guidelines and safe work procedures will prevent accidents and help to provide a safer work environment for our employees.

Applicable Regulations

OSHA 29 CFR 1926.1050

OSHA 29 CFR 1926.1051

OSHA 29 CFR 1926.1052

OSHA 29 CFR 1926.1053

OSHA 29 CFR 1926.1060

MSHA 30 CFR 56.1100

35.3 Responsibilities

Project Management shall:

- Determine with the Safety Department an Access / Ladder Permit (Appendix C-18) plan for all work activities and, where feasible, eliminate the use of a ladder as a means of access.
- Assign the task of constructing job made ladders to a competent person;
- Have employees trained by a competent person in use of a ladder and the use of fall protection where required.
- Ensure ladders and access systems are inspected prior to use
- Where a ladder is found to have defects, a method shall be provided of tagging the ladder out of service and removing the ladder from the project site for repair or disposal.

Subcontractors shall:

- Subcontractor's Supervisors and Designated Competent Persons are responsible for ensuring that all requirements of their program are met.
- All Subcontractors are required to implement a ladder use and inspection program.

Employees shall:

- Understand and comply with the program
- Guard against damage to the ladders
- Report any damage to supervision
- Fully participate in any training and inspection procedures.

35.4 Safe Access

General requirements:

- A ladder, ramp or stairway must be provided for workers where there is a break in elevation of 19 inches or more;
- When using a ladder, it must be kept clear to permit free passage by workers;
- A competent person will design all access into or onto the referenced access areas;
- Ladder Access into or onto areas greater than 12' above or below ground will require a fall protection plan;
- Approval by the Project Management team and Safety Department.

Access Areas:

- Access into these areas will require a plan to safely allow the movement of people with or without handheld materials. Approved access includes but is not limited to ramps approximately 2 to 1, stairways, ladders or other pre-approved engineered system to safety allow passage. Access areas include but are not limited to:
    - Material conveyors, silos, drag chutes;
    - Caissons/cofferdams;
    - Pipe Jacking Pits;
    - Platforms – permanent or temporary;
    - Roof or Mezzanines;
    - Cut and cover – prior to and during concrete work;
    - Pits in buildings,
    - Barge access – to, from, and into;
    - Tunnels and shafts;
    - Excavations;
    - Underground Installations: Manholes, Inlets, Vaults

35.5 Ladder Training

General:

- Training will be conducted by a competent person;
- Project teams will provide training to employees who use ladders, stairways and access routes as necessary through means of JHA and toolbox talk meetings or any other approved training materials.

Topics:

The components of this program include:

- Recognition of hazards associated with ladders;
- Accidents common to ladders and the safe work procedures for preventing them;
- Any of the following as applicable:
    - Nature of fall hazards in the work area;
    - The correct procedures for erecting, maintaining and disassembling fall protection systems to be used;
    - The proper construction, use, placement and care in handling of all ladders
    - The maximum intended load-carrying capacities of ladders used.
    - Inspection criteria before us

35.6 Fall Protection Plan for Ladder use

- A fall protection plan must be developed when a ladders length or use, reaches beyond the limits of this policy.
- Policy requirements are 12 feet or greater above or below ground fall protection is required.
- The plan will be developed by the project team with the cooperation of the Safety Dept and provide for the protection of employees while using ladders beyond the limits in this policy.

35.7 Ladders

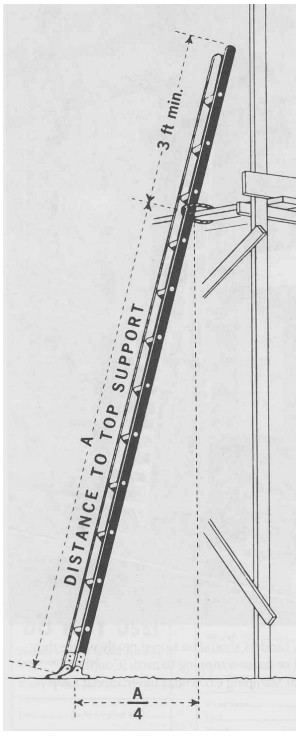
General requirements:

- There are five (5) basic types of ladder; each having it's own specific limitations and requirements;
    - Fixed ladders, above and below ground (self supporting)
    - Extension ladders (portable, non-self supporting)
    - Straight ladders (portable, non-self supporting)
    - Step or A frame ladders (portable, self-supporting)
    - Job Built
- Ladders will be equipped with ladder inspection decals and must be inspected prior to each use;
- Ladders shall not be used in a horizontal position for use as platforms, runways or scaffolds;
- Ladders must be used only on stable and level surfaces unless secured to prevent accidental movement;
- Ladders shall be tied, blocked or otherwise secured to prevent movement;
- Ladders must be maintained free of any slipping hazards;
- Ladders must not be loaded beyond the maximum intended load nor beyond the manufacturer's rated capacity;

- Manufactured ladders are not to be modified without manufacturers consent;
- Ladders must be used only for the purpose for which they were designed;
- The area around the top and bottom of ladders must be kept clear of debris and obstructions that would present a tripping hazard or otherwise obstruct employees ascending or descending the ladder;
- Ladders must not be moved, shifted, or extended while occupied;
- The top of a non-self supporting ladder must be placed with the two rails supported equally unless it is equipped with a single support attachment;
- The minimum distance between side rails shall be 12 inches;
- They must not be used on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental movement;
- Slip-resistant feet must not be used as a substitute for care in placing, lashing or holding a ladder that is used upon slippery surfaces including, but not limited to, flat metal or concrete surfaces that may become slippery;
- Ladders placed in passageways, doorways or driveways, must be barricaded to keep the activities or traffic away from the ladder;
- Ladders must not be tied or fastened together to create longer sections unless they are specifically designed for such use;
- Three points of contact shall be maintained at all times when climbing any ladder.
- Rungs and steps of ladders must be corrugated, knurled, dimpled, coated with skid-resistant material, or otherwise treated to minimize slipping;
- Wooden ladders shall not be coated with any opaque covering, except for identification or warning labels which may be placed only on one face of a side rail;

Ladder ratings:

- There are five industry standard load capacity ratings for ladders, no matter what material was used to build the ladder.
- Type 1A, 300 lb rated capacity, and 1AA, 350 lb rated capacity, are the only approved portable ladders for construction with all work pertaining to DBJV.



Extension Ladders (Non-self supporting portable ladders):

- Extension ladders are not to be used as work platforms;
- Must be capable of supporting at least four (4) times the maximum intended load.
- Must be angled so that the horizontal distance from the top support to the toe of the ladder is approximately one-quarter the working length of the ladder, or for every 4 feet in length vertical, 1 foot horizontal ratio;
- Must be used only on stable and level surfaces unless secured to prevent accidental movement;
- Ladders shall be tied, blocked or otherwise secured to prevent movement.
- The length of this ladder is different from its usable length. The height this ladder can safely reach is reduced by the angle it is set at and the top must exceed 36 inches above the landing;
- The area around the top and bottom of ladders must be kept clear of debris and obstructions that would present a tripping hazard or otherwise obstruct employees ascending or descending the ladder;
- Ladders must not be moved, shifted, or extended while occupied;
- The top of a non-self supporting ladder must be placed with the two rails supported equally unless it is equipped with a single support attachment;
- Any attachment used on a ladder must be approved by the Safety Dept before using it;
- The minimum distance between side rails shall be 12 inches;
- The length of an extension ladder is limited to 12 feet at the employee's feet. A fall protection plan must be developed beyond 12 feet.
- Non-slip safety feet shall be used on all extension ladders.
- Any attachments used on ladders to enhance, level, secure or otherwise change the original design must be approved by the safety department before use.
- *Maximum length* of a ladder for use permitted is 24 ft. Above 24 ft means of access shall be determined

Example of an Extension Ladder, Safety feet, and positive locking device.

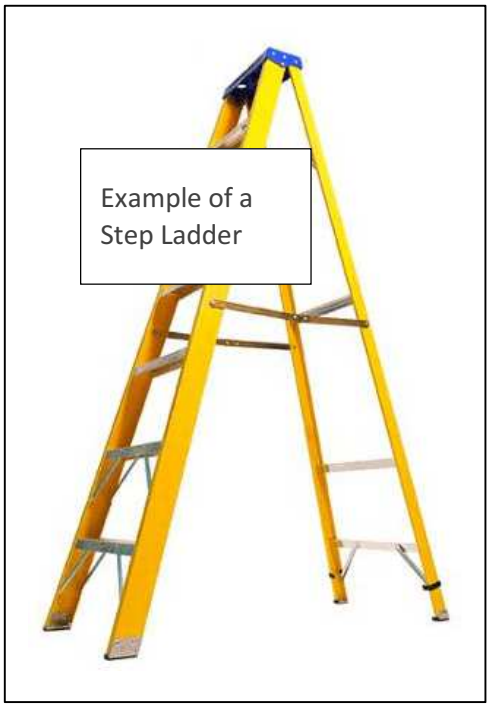
Straight or Single Ladder:

- Straight or single length ladders are non-supporting, portable ladders, nonadjustable in length consisting of one manufactured length;
- The length of a straight ladder is limited to 12 feet at the employee's feet. A fall protection plan must be developed beyond 12 feet;
- The length of this ladder is different from its usable length. The height this ladder can safely reach is reduced by the angle it is set at and the top must exceed 36 inches above the landing;
- Straight ladders are for access and are not to be used as work platforms;
- Must be capable of supporting at least four (4) times the maximum intended load.
- Must be angled so that the horizontal distance from the top support to the toe of the ladder is approximately one-quarter the working length of the ladder, or for every 4 feet in length vertical, 1 foot horizontal ratio;
- Straight ladders shall be tied, blocked or otherwise secured to prevent movement.
- The area around the top and bottom of ladders must be kept clear of debris and obstructions that would present a tripping hazard or otherwise obstruct employees ascending or descending the ladder;
- Ladders must not be moved, shifted, or extended while occupied;
- The top of a non-self supporting ladder must be placed with the two rails supported equally unless it is equipped with a single support attachment; and
- The minimum distance between side rails shall be 12 inches;

Step Ladders:

- A Step or A-frame ladder is a self-supporting, portable ladder, nonadjustable in length;
- The only acceptable ladder to be use as a work platform is a step ladder;
- All other fall protection options must be considered and deemed unsafe or impractical to use before step ladders are deployed as a work platform;
- The length of a step ladder is limited to. Maximum length
- 20 ft
- A fall protection plan must be developed beyond 6ft.
- PPE fall protection shall be used when the feet of an employee breaks the plain six feet or above on a step ladder
- Where employees are utilizing a step ladder and the waist of their torso breaks the plain of a 42 inch handrail and the employee is exposed to a fall greater than 6 ft , PPE fall protection shall be used even though the feet of the employee has not broken the 6 ft plain on the ladder itself
- Work being conducted on this ladder with both hands is limited to the shoulders being inside the rails;
- The length of a step ladder is different from its usable length. The top two steps and sometimes the top three steps are not for standing on;

- A metal spreader or locking device must be provided on each stepladder to hold the front and back sections in an open and locked position during use;
- Stepladders may not be used in any configuration other than completely open, locked in place and sitting on firm, level ground;
- Stepladders may not be used in the closed position when leaning against an object; and
- Cross-bracing on the rear section of stepladders must not be used for climbing unless the ladders are designed for and provided with steps for climbing on both front and rear sections;
- Step ladders shall not be used as stands for scaffolding planks;
- The top two steps shall not be used to climb, sit or stand on

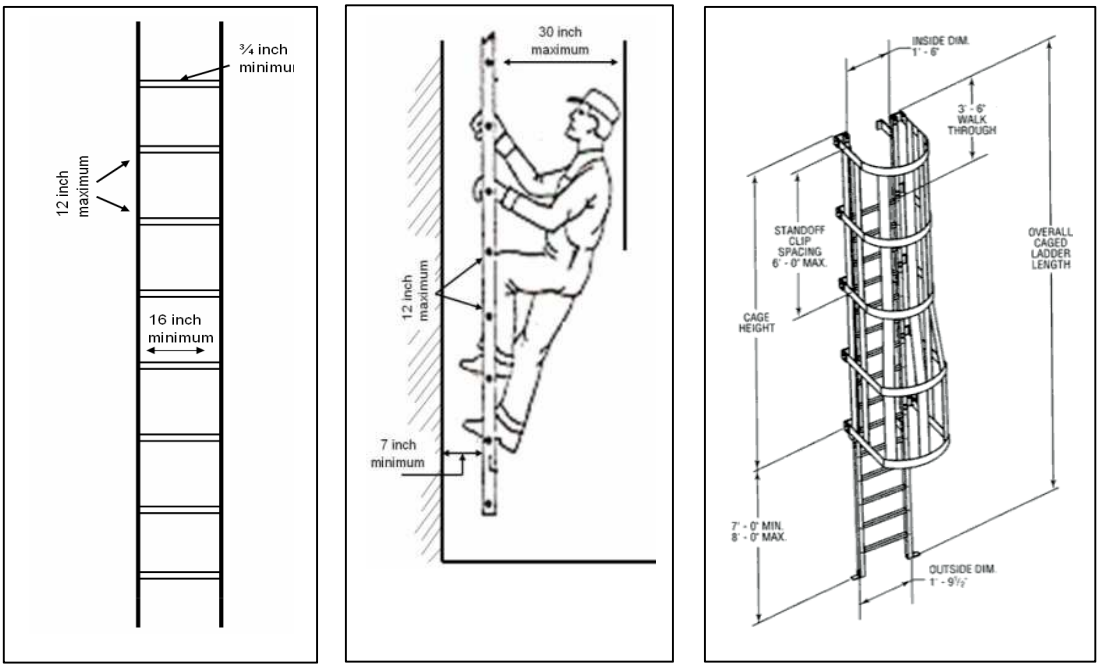


Example of a Step Ladder

Fixed ladders:

- Fixed ladders include but are not limited to access ladders for plant equipment, structures and mobile equipment;
- Fixed ladders must support at least two loads of 250 pounds plus anticipated loads caused by ice build-up, wind, rigging and impact loads.
- Each rung must support at least a single concentration of 250 pounds applied to the middle of the rung.
- Two or more separate ladders used to reach an elevated work area must be offset with a platform or landing between the ladders, except when portable ladders are used to gain access to fixed ladders;
- Fixed ladders are those placed at 90º angle (vertically). Typical applications are in our material plants and include silos, towers, stacks, and other buildings;

- There shall be a 7” clearance between the ladder rung and any obstruction behind the ladder to allow for proper footing;
- There shall be 30” of clearance between the centerline of the fixed ladder and any obstruction on the climbing side of the ladder. If an obstruction is encountered the tolerance can be reduced to 24”, provided that a deflection device is installed to guide employees around the obstruction;
- When stepping from a fixed ladder onto a ladder the step-across distance will be between 7” – 12”.
- If the distance is greater than 12” a platform must be installed to provide safe access; and
- Fixed ladders shall be provided with cages, wells, ladder safety devices or self-retracting lifeline where the length of climb is less than 24’ but the top of the ladder is at a distance greater than 24’ above lower levels.



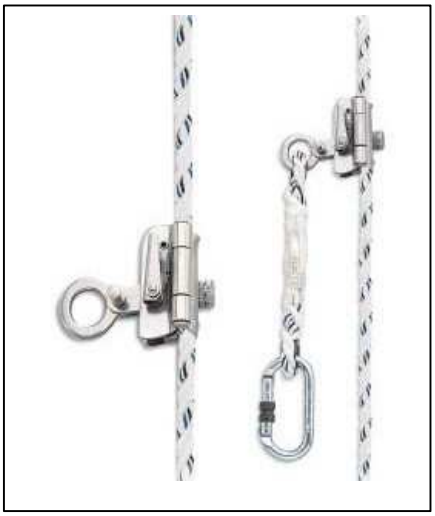
Example of a Fixed Ladder

Underground Installation Ladders:

- Ladders leading to underground vaults, manholes, inlets or other structures below ground level are limited to 8 feet in depth regardless of manufacturer. A fall protection plan must be developed beyond 8 feet;

Ladder Safety Devices:

- Where the total length of the climb equals or exceeds 12', fixed ladders shall be equipped with one of the following:
    - Self-retracting lifelines, and rest platforms at intervals not to exceed 150';
    - A cage or well, and multiple ladder sections not to exceed 50' in length; and
    - Ladder sections shall be offset from adjacent sections, and landing platforms shall be provided at maximum intervals of 50'.
- The bottom of a cage will be level 7-8' above the point of access or landing;
- The top of the cage will be a minimum of 42" above the top of the platform;
- Ladder safety climbing devices shall be capable of withstanding an 18' drop of a 500 pound weight;
- Ladder safety climbing devices shall permit the employee to
- ascend or descend without continually having to hold, push or pull any part of the device, leaving both hands free for climbing;
- Ladder safety climbing devices shall be activated within
- 2 feet after a fall occurs;
- The connection between the ladder safety climb device and the point of attachment to the harness shall not exceed 9" in length; and
- A competent person prior to use will inspect all existing fixed ladders provided by the owner and ensure they are adequate for use.

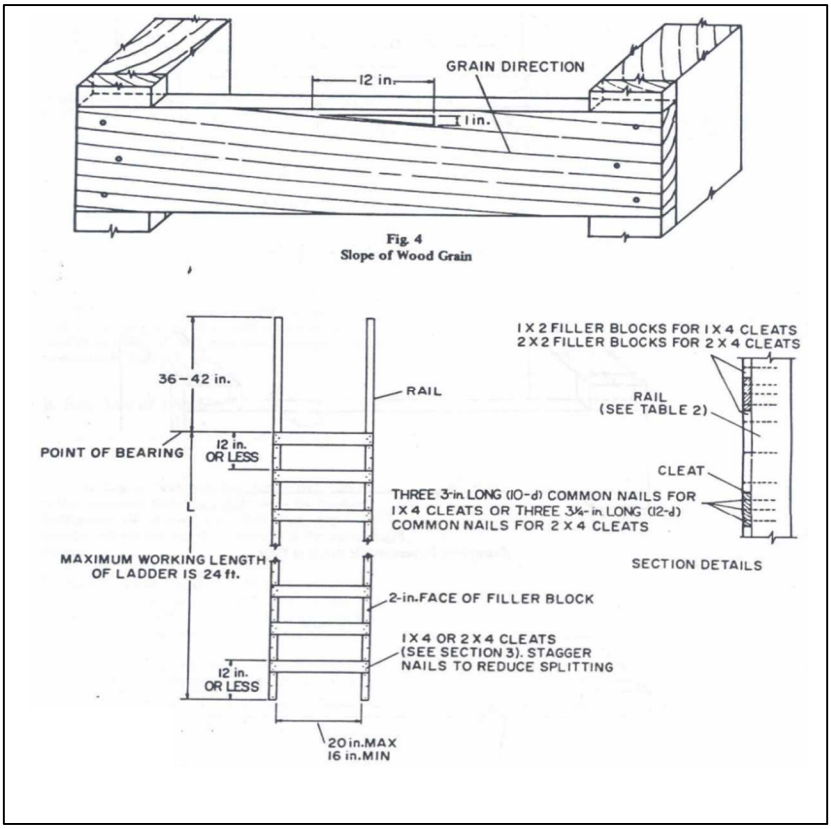


Example of ladder safety device

35.8 Job-Made Ladders

General:

- A competent person who has been designated by the job superintendent will build job made ladders.
- When job built ladders are used to access an upper landing, the side rails must extend at least three (3) feet above the upper landing so an employee can walk through the ladder by gripping the side rails while stepping onto the landing;
- When an extension is not possible, the ladder must be secured at the top to a rigid support that will not deflect and a grasping device, such as a grab rail, will be provided to assist employees in accessing the ladder;
- The grasping device must be close enough for an employee to reach without stooping or stretching;
- Under no circumstance may the extension cause the ladder to deflect under a load or slip off its support;
- A double-cleated ladder or two or more ladders must be provided when ladders are the only means of access for 25 or more employees, or when a ladder serves simultaneous two-way traffic;
- Ladder rungs, cleats and steps must be parallel, level and uniformly spaced;
- If splicing is necessary, a competent person will design it. Single-Cleat Ladder:
- For use by 24 or fewer employees, shall not exceed 12 feet in length;
- Width shall be 15 to 20 inches at the top, side rails shall be parallel or flared top to bottom not more than ¼ inch for each two feet of length; and
- 2 x 4 inch lumber shall be used for side rails up to 16 feet long; 2 x 6 inch lumber shall be used for ladders 16 to 30 feet long.



Example of a Single-Cleated Job Built Ladder

Double-Cleat Ladder:

- For use by 25 or more employees or for two-way traffic; shall not exceed 12 feet in length; and
- Side and middle rails shall be 2 x 4 inch lumber up to 12 feet in length; 2 x 6 inch lumber from 12 to 24 feet in length.

Cleats:

- Shall be set into the edges of the side rails ½ inch, or have filler blocks placed between them;
- Shall be secured with three (3) 10d common wire nails (or equivalent). Double headed nails will not be used;
- Shall be spaced 12 inches top to top; and
- When using ¾ inch thick cleats, the width shall be determined by the length of the cleat as shown below:

Table 38 A – Ladder Cleat Chart

Length of Cleat (inches)		**Width (inches)**
Up to and including 20"		3 ½
Over 10" and up to and including 30"		3 ¾
Wood Materials Acceptable for ¾" Thick Cleats		
Oregon Ash	Hackberry	Red Oak
Pumpkin Ash	Hickory	White Oak
White Ash	Holly Western	Pecan
Beach	Larch Locust	Persimmon
Birch	Hard Maple	Southern Yellow Pine
Rock Elm	Red Maple	Tamarack
Soft Elm		

35.9 Ladder Safe Work Procedures

Housekeeping:

- Electrical cords, air hoses, welding leads, and other obstructions, will not impede access at the top or bottom of access;
- Should the ladder be located in an area susceptible to mud, water, or snow, it will be inspected prior to use and relocated as needed; and
- In areas where muddy conditions are present, crushed stone and/or grating will be located at the bottom to prevent slipping while climbing.

Ladder Inspection and Repair:

- A competent person must periodically inspect ladders for visible defects and after any situation that may have affected their safe use on a quarterly basis and use color code identifications. They can use the "Ladder Inspection Verification Form" (See Appendix C-28).
- Portable and fixed ladders with structural defects, such as, but not limited to:
    - broken or missing rungs, cleats, or steps;
    - broken or split rails;
    - corroded components; or
    - other faulty or defective components,

  must be withdrawn from service by removing it from the jobsite for disposal or repair, immediately marking the ladder in a manner that readily identifies it as defective, or tagging it with "Do Not Use" or similar notices;
- When ladders are disposed of, they shall be destroyed so they may not be used;
- Non-supporting portable ladders are to be taken down when not in use. Blocking lower rungs with wood is not permitted;
- A job-built ladder can be removed from service by blocking it with plywood or other attachment that spans several rungs if the ladder is structurally part of a system;
- Job-built ladder repairs MUST restore the ladder to a condition meeting its original design criteria before the ladder is returned to service; and
- No repairs may be made to manufactured ladders that require burning, welding, or other modification. It must be removed from service.

36 Lead

36.1 Purpose

The purpose of this program is to protect workers, the public and the environment from the hazards associated with lead exposures produced by our work operations. This program is designed to eliminate the risk of overexposure to lead and subsequent lead poisoning. Lead poisoning is a serious health hazard that can severely and permanently damage a person's blood forming, urinary, reproductive and nervous systems.

The old belief that we could work unprotected outdoors is simply not true, regardless of wind conditions.

Applicable Regulation

OSHA 1926 CFR 1926.62

36.2 Responsibilities

Project Management shall:

- Be required to attend a one day supervisory lead safety training course;
- Assess operations and project conditions in which employees or the general public may be exposed to lead;
- Institute engineering and work practice controls whenever feasible to reduce employee exposure to lead below 30µg/m3;
- Provide all necessary Personal Protective Equipment, respirators, hygiene facilities, etc. to for employees performing operations with lead exposure;
- Provide training for employees performing operations with lead exposure;
- Ensure all employees working with lead take part in the project's medical surveillance program; and
- Maintain all employee medical surveillance records and lead monitoring records.

Employee shall:

- Take part in lead safety training prior to taking part in any operation involving lead exposure;
- Follow up procedures or work plans established by their supervisors for working with lead exposures;
- Use all personal protective equipment issued to them for use when working with lead exposures; and
- Take part in the project's medical surveillance program when working with lead exposures.

36.3 Exposure Assessment

Initial Determination:

- Before construction begins, each project will determine whether there is any risk of employee exposure to lead;
- Owner specifications will be reviewed to determine if the identification of lead is present on the project. Additionally, a survey will be completed to see if the Owner/Developer identified any work procedures that need to be done that may involve lead; and
- If the initial determination for lead or material suspected of containing lead is positive, the project will collect samples and send them to a laboratory for analysis of the lead content, so that we can properly protect our employees before commencing work operations.

Sources of Lead which produce Lead exposure:

- Demolition or salvage of structures where lead or materials containing lead are present;
- Removal or encapsulation of materials containing lead;
- New construction, alteration, repair or renovation of structures, substrates, or portions that contain lead, or materials containing lead;
- Installation of products containing lead;
- Lead contamination / emergency cleanup;
- Transportation, disposal, storage or containment of lead or materials containing lead on the site or location at which construction activities are performed; and
- Maintenance operations associated with all of the above.

36.4 Exposure Monitoring

If lead has been identified, the project will collect samples to establish baseline readings. Samples will be representative of a full shift including at last one (1) sample for each job classification in each work area either for each shift, or preferably, the shift with the highest exposure level. These samples must be representative of the monitored employee's regular daily exposure to lead.

Follow-up air monitoring shall be performed as listed below:

- If baseline sampling results demonstrate that the employee is below the action level of 30 µg/m3 further air monitoring is not required. If a change of equipment, process, control, personnel or a new task has been initiated may result in exposure to lead at or above the action level, then additional monitoring will be conducted;
- If baseline sampling results demonstrate exposure is at or above 30µg/m3, then two (2) samples, taken seven (7) days apart, will be required at least every 6 months until two (2) consecutive samples demonstrate the exposure is below the action level;
- If baseline sampling results demonstrate exposure is at or above 50µg/m3, then two (2) samples, taken seven (7) days apart, will be required at least every 3 months until two (2) consecutive samples demonstrate the exposure is below the PEL. Consideration will be taken to the levels of the two (2) consecutive samples. If results are below the PEL, but above the action level, sampling will resume as per the paragraph above. If results are below the action level, then sampling will be conducted as per the first paragraph;
- Whenever an employee complains of symptoms that may be caused by exposure to lead.

Recordkeeping and Notification Requirements

- Baseline and additional sampling results will be recorded and stored at the jobsite and retained by the Safety Department;
- Air Sampling Worksheets will be kept with all sampling results as per the Respiratory Program; and
- When sampling results are received, employees will be notified by letter, of the results of exposure. These letters will either be given to the employee by hand, if at the jobsite, or by certified letter delivery. If the employee receives the letter by hand, he/she will be required to sign off on the air monitoring results to show that they received the notification. The person conducting the sampling should also sign off on any air monitoring results.

Permissible Exposure Limit:

- No one shall be exposed to lead concentrations greater than 50 µg/m3, averaged over an eight-hour day without proper protection; and
- If exposure to lead exceeds eight hours per day, then the maximum time weighted average (TWA)exposure limit in µg/m3of air = 400 divided by hours of exposure during that day:

    - 400 / 08 = 50 µg/m3of air for an 8-hour work shift;
    - 400 / 09 = 44.4 µg/m3of air for an 9-hour work shift;
    - 400 / 10 = 40 µg/m3of air for a 10-hour work shift;
    - 400 / 11 = 36.3 µg/m3of air for an 11-hour work shift; and
    - 400 / 12 = 33.3 µg/m3of air for a 12-hour work shift.

36.5 Methods of Compliance

Engineering and Work-Practice Controls:

- Engineering and work practice controls, including administrative controls, shall be used to reduce and maintain employee exposure to less than 50 µg/m3;
- Where engineering and work practice controls are not able to reduce the exposure to under 50
- µg/m3, respiratory protection shall be worn to supplement the engineering and work practice controls;
- If work assignment rotation is used as an administrative control to reduce the TWA exposure to lead, then we will establish and implement a job rotation schedule. This schedule shall be detailed in the construction plan, and will include:
- The name of each employee affected;
- The duration and exposure levels at each job or work station where each affected employee is located; and
- Any other information that may be useful to assess the reliability of job location in reducing exposure to lead.
- Engineering controls shall include, but not limited to:
    - Vacuum shrouded scalers and grinders;
    - Vacuum blasters;
    - Chemical paint stripping;
    - Dust collection / ventilation;
    - Removing paint before burning;
    - Cleaning with HEPA (high efficiency particulate air) filter vacuums;
    - Wet methods to remove dust;
    - Use of long cutting torches to keep people further away from any fumes that are generated;
    - Use of mechanical ventilation to move fumes and dust away from employees; and
    - Positioning workers upwind or otherwise outside of visible fume or dust clouds.

Lead Program:

- This written program set forth in this Health and Safety Program, shall be considered the governing compliance program. This will be further supplemented by site-specific programs, such as the Worksite Specific Respiratory Program for Lead, which details overall site controls for lead.
- As per our safety, health and management system, each activity also requires individual risk assessment. This will be done in the form of construction planning. The job hazard analysis will detail: all specific elements of the activity; engineering and administrative controls; respirator protection; etc.

- Where work involving lead is subcontracted out, the Subcontractor will be responsible for providing a Site Specific Compliance Program. This program shall be approved by the Safety and Environmental Director, prior to the Subcontractor commencing work.

36.6 Personal Protective Equipment

General:

- We will provide protective clothing for all employees exposed to lead in excess of 50 ug/m3 of air;
- Protective clothing may include coveralls, disposable suites, gloves, hats and disposable shoe coverlets, face shields or goggles;
- This clothing shall be replaced daily unless the exposure to lead is minimal, such as when exposed to lead less than 15 minutes per day or when welding on “pre-cleaned” steel;
- Damaged protective clothing shall be replaced, as needed, to maintain effectiveness;
- Contaminated protective clothing shall be removed, at the completion of a work shift, only in the designated lead change areas. Employees are not permitted to move to other work areas, offices, trailers etc. without removing all clothing;
- Any person who cleans or launders protective clothing or equipment shall be notified, in writing, of the potentially harmful effects of exposure to lead;
- Contaminated clothing that is to be cleaned or disposed of, and shall be kept in a closed container. Heavy-duty plastic trash bags work well inside trashcans with lids;
- Seal each bag with a tie when it becomes full. All trash cans and bags that contain contaminated clothing shall be marked with this warning – “Caution – clothing contaminated with lead. Do NOT remove lead by blowing or shaking. Dispose of lead contaminated wash water in accordance with local, state and federal regulations”;
- Lead must not be removed from protective clothing or equipment by blowing, shaking or any other means that could disperse lead into the air; and
- Work boots shall be vacuumed or cleaned with water before being worn off the job.

36.7 Respirators

General:

- Respirators shall be used and worn in accordance with the Respiratory Protection section of this
- Health and Safety Program;
- Respirators are not considered an engineering control – they are used to provide protection while performing engineering controls aimed at reducing the PEL; and

- Respirators shall be worn at the commencement of the operation, and thereafter until air monitoring results demonstrate that engineering and administrative controls are sufficient in the control of exposure to lead.

Respirator Selection:

- Standardized respirators are as follows:

    - MSA Comfo II –It may be used if the total length of the lead exposure is less than 15 minutes per day, or for up to 10 hours per day welding pre-cleaned steel. (In order to be considered pre-cleaned steel, all lead paint must have been removed within four (4) inches in any direction of the weld).
    - MSA Powered Air Purifying Respirator (PAPR) – This positive pressure rubber face piece respirator has filtered air supplied to it by a battery-powered blower. It must be used when an employee is exposed to lead for more than 15 total minutes per day, except as noted above for pre-cleaned steel or when sandblasting. A PAPR shall also be made available to any employee who requests one.

- Additionally, the project will provide a PAPR if an employee requests one and it adequately provides protection for the individual (Refer to Table 1 for selection).

Table 39 A - Respiratory Protection for Lead

Airborne Concentration of Lead or Condition of Use	Required Respirator *
Not in excess of 0.5 mg/m3 or 5r00 lg/m3	Any air-purifying respirator equipped with HEPA filters. **
Not in excess of 1.25 mg/m3 or 1,250 lg/m3	Any powered, air-purifying respirator equipped with HEPA filters. **
Not in excess of 2.5 mg/m3 or 2,500 lg/m3	Any air-purifying full-face piece respirator equipped with HEPA filters. ** or Any powered, air-purifying respirator with a tight fitting face piece and HEPA filters. **
Not in excess of 50 mg/m3 or 50,000 lg/m3	Any supplied air respirator operated in a pressure-demand or other positive-pressure mode.

Not in excess of 100 mg/m3 or 100,000 lg/m3	Any supplied air respirator that has a full face piece and is operated in a pressure-demand or other positive-pressure mode.
Greater than 100 mg/m3, unknown concentration, or fire fighting.	Any self-contained breathing apparatus that has a full face piece and is a pressure-demand or other positive-pressure mode.

*Respirators specified for high concentrations can be used at lower concentrations of lead.

** An HEPA filter is at least 99.97% efficient against particles that are 0.3 micron in diameter.

Training and Respiratory Usage:

- All employees on projects where higher than the action level of lead are expected, shall be notified of the existence of OSHA regulations regarding lead. Posting a notice on the jobsite bulletin board or wherever all employees will see it can do this;
- All employees who will be exposed to lead shall be properly trained before that exposure begins.

Training shall be repeated annually and will cover the following items:

- The content of applicable state and federal regulations;
- A list of specific operations (burning, welding, etc.) that result in lead exposure;
- The purpose, proper selection, fitting, use and limitations of respirators;
- The purpose and a description of the medical surveillance and medical removal protection programs;
- Information on the health problems associated with excessive lead exposure. Particular emphases should be placed on the reproductive problems that lead can cause in both men and women;
- Engineering controls and work practices that will be used to control lead exposure;
- The contents of our lead exposure control program;
- A warning that chelating agents should not routinely be used to remove lead from their bodies and should only be used under the direction of a licensed physician.
- We will also make readily available to all affected employees, a copy of the regulations pertaining to lead. Videos can be used to provide some of the necessary training. The project will ensure that the Respirator Program is followed and that all employee have been properly fit-tested;
- Employee representatives should be notified that facial hair may prevent a proper fit test.
- Arrangements should be made before employees show up on the job to avoid confrontation;
- Whenever a filter respirator is selected for use, the employee will be permitted to change the filter elements whenever an increase in breathing resistance is detected. Filters do not have an

expiration date or mechanical detector for signifying its expiration. The only adequate means of filter life is breathing resistance;

- Employees wearing respirators will be allowed to leave work areas to wash their face and respirator when necessary to prevent skin irritation;
- When respirators are chosen that require fit testing, all employees will be properly fit tested;
- Employees will fill out and sign a Lead Health and Safety Agreement upon completion of training; and
- Upon completion of training, employees will complete the self-examination.

36.8 Housekeeping

General:

- All surfaces shall be kept as free as practical of lead accumulations;
- Compressed air shall not be used for cleaning;
- Vacuuming is the preferred choice for cleaning, however, wet methods such as washing, wet sweeping, wet shoveling and wet brushing may be used when vacuuming is not practical; and
- Vacuums will be equipped with HEPA filters and shall be emptied in a manner that minimized the entry of lead into the air.

36.9 Hygiene Facilities and Practices

Change Areas:

- Clean change areas will be provided for employees exposed above the PEL and as protection during initial monitoring;
- Change areas will be equipped with separate storage facilities for protective work clothing and equipment and for street clothes to prevent cross-contamination; and
- Employees will not be allowed to leave the job wearing any protective clothing or equipment.

Showers:

- The project will provide shower facilities, where feasible, for use by employees whose airborne exposure to lead is above the PEL;
- OSHA area offices should be contacted to get a better definition of enforcement on showers and their feasibility;

- Shower facilities are available through vendors that provide safety equipment for environmental concerns; and
- If a project does provide shower facilities, use will be mandatory at the end of the work shift.
- Cleaning agents and towels will be provided.

Eating Facilities:

- Lunchroom facilities will be provided for employees exposed over the PEL;
- This facility will be as free as practicable from lead contamination;
- Before using the facilities, employees will wash their hands and face prior to eating, drinking or smoking;
- Employees should not enter the facility with their protective clothing unless the surface lead dust has been removed by vacuuming or similar means; and
- Periodic wipe testing should be considered to prove the effectiveness of the program.

Hand Washing Facilities:

- The project will provide adequate hand washing facilities for use by employees exposed to lead;
- When showers are not provided, the project will assure all employees wash at each break and the end of the work shift; and
- Portable hand wash facilities with filtration devices should be considered. They can be rented or purchased from environmental vendors.

Warning Signs:

- The following warning signs shall be posted in each lead exposure area:

WARNING – HAZARD LEAD WORK AREA

NO SMOKING, EATING OR DRINKING

36.10 Medical Surveillance

Initial testing:

- The project will do an initial test for Blood Lead and ZPP levels on all employees exposed to lead on any day at the Action Level of 30 ug/m3;
- The project will arrange for these tests as part of the pre-employment sign up procedures;
- The project should consider making only a conditional offer of employment and not put new hires in a lead environment until after the results of the initial blood leads are received. (Many medical facilities will do this at their facility and have the ability to draw blood samples on site with a minimum number of employees. This option should be considered.);
- If the duration of the lead project will be exposing employees at or above the Action Level for more than thirty (30) days a year, the project will set up a medical surveillance program. This program will be performed by, or under the supervision of, a licensed physician;
- Employees have the option of a "multiple physician review". This enables employees to have a second physician review the initial physician's findings, and if necessary, do additional exams and testing. The project has the right to condition its participation, including payment, based on the following employee requirements that must happen within fifteen (15) days:
    - Notify the project of the desire for a second opinion; and
    - Employee's promptly setting up an appointment.
- If by change the two (2) physicians disagree, the project and employee will work together to get the physicians to resolve the matter;
- If these two physicians do not agree, then the employee and the project will select a third physician to perform any necessary tests;
- The third physician's findings will be what the project will adhere to unless the project and the employee resolve the matter consistent with any of the three (3) physicians; and
- To avoid the "Multiple Physician Review" process, it is important for the project to select a physician who is competent on lead in construction, is willing to work the employees' questions and concerns, and is accepted by employee representatives.

Frequency of Testing:

- If a project will last more than thirty (30) days a year, then testing will be done at least every two (2) months for the first six (6) months after the initial test. It will then be done every six (6) months thereafter;
- Blood Lead Levels vary among humans. Listed below are important levels:

- 25 ug/dl indicates the need for concern. State health officials may require laboratories to send copies of employee reports to them for follow-up;
- ug/dl triggers the need for a full medical evaluation;
- 50 ug/dl indicates the level at which an employee must be removed from lead exposure and receive a full medical evaluation. The project should discuss this with the employee's physician or state regulatory agency;
- If an employee's blood level lead test indicated a blood lead level at or above 40 ug/dl, the project will continue blood tests at least every two (2) months until two (2) consecutive blood samples indicate a blood lead level below 40 ug/dl;
- If an employee's blood lead test indicates a blood lead level at or above 50 ug/dl, the project will retest two (2) weeks after the first result;
- If the retest is less than 50 ug/dl, the project will go back to bi-monthly testing. If the result is greater than 50 ug/dl on retest, the project will test as often as possible, minimum monthly, until two (2) consecutive results are less than 40 ug/dl;
- Exit exams will be administered for employees leaving the project. Results should be forwarded to the home address with a request that they sign the second copy and return it to the project; and
- If an employee refuses to take an exit exam, it should be documented and, if possible, signed by the employee.

Notification of Blood Test Results

- Within five (5) working days after the receipt of blood test results, the project will notify each employee in writing of his or her blood lead level;
- Employees should be asked to sign a copy of the blood lead test for recordkeeping purposes and to ensure the results were received;
- The project will notify each employee whose blood lead levels exceeds 50 ug/dl that OSHA requires that person to be removed from the lead area; and
- If no work is available where there is lead exposure below 30 ug/m3, the employee will be eligible for benefits under "Medical Removal Protection.

Medical Examination and Consultations:

- The project will make available to employees exposed at or above the Action Level, exams and consultation based on the following schedule:
    - At least annually for each employee for whom a blood test conducted at any time during the preceding twelve (12) months indicated a blood lead level at or above 40 ug/dl.
    - As soon as possible, if the employee(s) indicate that they have developed signs or symptoms commonly associated with lead intoxication, that they desire medical advice concerning the effect of current or past exposure to lead and their ability to procreate a

healthy child, that she is pregnant, or that they have demonstrated difficulty in breathing during a respirator fit test or during use;
    - As medically appropriate for each employee either removed from exposure to lead due to a risk of sustaining impairment to health, or otherwise limited pursuant to a final medical determination.

- These examinations and consultations will include a variety of tests depending on the situation or symptoms. The projects will refer to the standard under 1926.62(j)(ii) for more detailed information;
- Prior to a project's doing medical surveillance, medical examination and consultations, it is necessary to provide the physician with the following information:
    - A copy of OSHA regulation 1926.62 for lead, including all Appendices;
    - A description of the affected employee's duties as they relate to the employee's exposure;
    - The employee's exposure level or anticipated exposure level to lead and to any other toxic substance (if applicable);
    - A description of any personal protective equipment used or to be used;
    - Prior blood-lead determinations; and
    - All prior written medical opinions concerning the employees in the employer's possession or control.
- The project will provide the same information to a second or third physician conducting a medical examination or consultation upon request either by the second or third physician, or by the employee.

Written Medical Opinions:

- The Project will provide copies of medical opinions to the employee. This information should contain only the following:
    - The physician's opinion as to whether the employee has any detected medical condition which would place the employee at increased risk of material impairment of the employee's health from exposure to lead;
    - Any recommended special protective measures to be provided to the employee, or limitations to be placed upon the employee's exposure to lead;
    - Any recommended limitation upon the employee's use of respirators, including a determination of whether the employee can wear a powered air purifying respirator if a physician determines that the employee cannot wear a negative pressure respirator; and
    - The results of the blood lead determination.
- The project is responsible for instructing the physician not to include in his opinion any diagnosis unrelated to lead exposure. In addition, the physician will only advise the employee of any medical condition, occupational or non-occupational, which dictates further medical examination or treatment; and

- If a physician suggests therapeutic or diagnostic treatment, the project will assure that it be done under the supervision of a licensed physician in a clinical setting with thorough and appropriate medical monitoring and that the employee is notified, in writing, prior to its occurrence.

Medical Removal Protection:

- The project will remove an employee from work having an exposure of lead at or above the action level when the blood lead level is at or above 50 ug/dl. The employee can be assigned to other tasks on the project where lead exposure is below the 30 ug/m3 action level. The employee may also be removed if the physician believes the employee has a medical condition which places the employee at risk. If the physician recommends special protective measures or limitations on the employee's exposure to lead, the project will implement the recommendation;
- An employee may return to his/her former position status:
- For an employee removed due to a blood lead level of above 50 ug/dl when two (2) consecutive blood sampling tests indicate that the employee's blood lead level is at or below 40 ug/dl; and
- For an employee removed due to a physician's recommendation when the employee no longer has detected a medical condition which places the employee at increased risk.
- The project will provide up to eighteen (18) months of removal protection benefits on each occasion that an employee is removed from exposure to lead. The project will provide these benefits as long as the project from which the employee was removed continues. These benefits will be the total normal earnings, including seniority and other employment rights and benefits, and their risk to their former job status as though they had not been removed from their job;
- The project can condition these benefits upon their right to their former job status as though they had not been removed from their job;
- The project can condition these benefits upon their participation in follow-up medical surveillance; and
- If an employee files a Workers' Compensation claim, the project will refer to the OSHA Standard 1926.62 for specific details.

37 Lock Out / Tag Out

37.1 Purpose

The objective of this procedure is to prevent personal injury and property damage while work activities are being performed on equipment and or machinery that have the potential to release hazardous energy. Energy sources include steam, air, electrical, mechanical, hydraulic, thermal, spring/loaded devices, gravity etc.

Lock-Out/Tag-Out (LOTO) procedures are established to ensure Potential energy sources to equipment, machinery or systems that have electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy are de- energized/isolated, blocked, locked and tagged out to prevent accidental injury or property damage.

Applicable Regulations: OSHA – 29 CFR 1910.146

37.2 Responsibilities of Project Management

- Project Management must be thoroughly knowledgeable of hazardous energy sources and their specific lockout/tag-out methods prior to removing, installing or servicing equipment, machinery, mechanical, electrical, hydraulic, pneumatic, chemical, thermal and/or power distribution systems.
- Ensure that all hazardous energy sources are locked and tagged out prior to removing, installing or servicing equipment, machinery, and/or power distribution systems.
- Ensure the lock-out/tag-out procedure used provides effective safety protection for all employees.
- Ensure all affected employees have received training and understand the lock-out/tag-out procedure.

Documentation relating to the training will be maintained.

- Designate competent people to serve as LOTO Administrator.
- Provide an adequate number of locks and associated equipment to be used for Lock-Out/Tag-Out.
- The Duty Manager is the supervisor responsible for that particular work activity.
- NO EQUIPMENT IS TO BE TAKEN OUT OF SERVICE OR PLACED BACK INTO SERVICE WITHOUT THE KNOWLEDGE AND APPROVAL OF THE DUTY MANAGER

- Lockout Devices shall indicate the identity of the employee applying the device.
- Periodic inspections of energy control procedures must be conducted at least annually to ensure the procedure is being followed. This will be carried out by someone other than those actually using the lockout/tag-out in progress. This will be a function of the Safety Department. A certified review of the inspection including date ,equipment, employees and the inspector should be documented

37.3 Lock-out/Tag-out Preparation

When work is to commence that requires a Lock-Out/Tag-Out, the designated Duty Manager will be notified. The Duty Manager and/or the Responsible Engineer will survey the job to locate, identify and list by location all isolating devices to be certain which switch(s), valve(s), or other energy isolating devices apply to equipment to be locked or tagged out. The possibility of more than one energy source may exist e.g. electrical, mechanical, or others.

37.4 Sequence for Lock-out/Tag-out Procedure

- Notify Management of the job activity that requires lock-out/tag-out. The Duty Manager will then meet with the person requesting a Lock-Out/Tag-Out and discuss the below items.
    - Type of work
    - Method of energy control, lock-out or tag-out.
    - Review of lock-out/tag-out procedure
    - Date and time the work is to start, and approximate finish time
- All affected employees shall be notified that a lock-out/tag-out system is going to be utilized.
- Before an authorized or effected employee turns off a machine or equipment, the authorized employee shall have knowledge of the type &magnitude of the energy, the hazards of the energy to be controlled and the methods or means to control the energy
- De-energize / isolate energy sources by lock-out or tag-out. Lock-out is the preferred method of isolation and multiple lock-outs may be required. A trained and authorized Electrical person will de-energize and energize any electrical sources in the construction phase.
- Orderly shutdown procedures must be utilized to avoid any additional or increased hazards to employees as a result of the equipment or machinery stoppage.
- All energy isolating devices that are needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment form the energy source
- Following the application of the lockout/tag-out devices to energy isolating devices. All potentially hazardous stored or residual energy shall be relieved, disconnected, restrained and otherwise rendered safe.

- If there is a possibility of re-accumulation of stored energy level, verification of isolation shall be continued until the servicing or maintenance is completed or until the possibility of such accumulation no longer exists.
- Assign alternate Duty Manager for lock-out responsibility on each shift.
- Prior to starting work on the machine or equipment that have been locked or tagged out; the authorized employee shall verify that isolation and de-energization of the machine or equipment cannot be started with devices in place.
- When preparing to work on presumably disconnected electrical equipment, the employee will test all incoming wires with an AC voltage detector. The detector will indicate electrical potential of any wire from 25 to 1500 AC volts. Current does not have to be flowing since the detector picks up static electricity that is present around a wire that is energized with AC voltage. Although the panel or equipment may be presumed dead, there is always the danger that remote circuits could present a grave danger to personnel working on the equipment.

When using a voltage detector, check each and every wire as close to the conduits as practical. This will ensure the coverage of all wires that enter the box or equipment. If you have conduits coming in, check each and every wire in all conduits. Before using a tester, check a known live circuit to make sure the tester is functioning properly.

37.5 Shift Change Procedures

- Lock-out/tag-out communication between shifts is mandatory.
- Superintendents / Foreman shall verify that lock-out/tag-out is still in force before the start of the shift.
- Advise all affected employees of lock-out/tag-out.

37.6 Multiple Lock-Out Procedures

- Where there are different groups or trades including subcontractors to work on machinery or equipment the employees will be required to have the a level of protection equal to that provided by a personal lockout or tag-out device.
- The Duty Manager will initiate all Lock-Out/Tag-Outs.
- The Duty Manager will place a multi-lock hasp on each isolation point along with the appropriate lock and warning tag.
- Each employee working on the equipment will affix their own personal lock to the lock-out device.
- The Project team will provide locks for this purpose.
- Keys to personal locks are not to be given to anyone other than the person assigned to that lock.
- When an employee has completed their work, they will remove their personal lock from the isolation point. Please Note: All personal locks are to be removed when the work is complete, or at the end of each shift.

- When the work to be performed is completed, the Duty Manager must be notified.

NO ONE OTHER THAN THE DUTY MANAGER IS PERMITTED TO REMOVE THE RED LOCK AND RETURN ENERGY TO THE EQUIPMENT.

37.7 Sequence for Restoring Energy Source

- Notification to Duty Manager.
- Notification to all affected employees.
- Removal of personal locks.
- Verification that all employees are clear from the equipment to be re-energized. (Post a Safety Watch to prevent personnel from entering the area)
- After verifying that all affected employees are safe, the Duty Manager will remove the Red Lock and restore the energy source to equipment.

37.8 Subcontractor Responsibility

- Review and understand the Lock-Out/Tag-Out procedure.
- Have knowledge of the energy source, (i.e., mechanical, electrical, hot tap, etc.
- Have knowledge of the magnitude of the energy source.
- Understand the potential hazards of the job.
- Instruct employees

37.9 Training

Employees must receive:

- Instruction in the use and purpose of the lock-out/tag-out procedure;
- Lock-out/Tag-out steps taken to avoid equipment from being operated;
- Recognition of hazardous energy source, type, magnitude of energy available;
- Means necessary for energy isolation and control;
- Limitations of tags as they do not provide restraint and they shall not be removed without authorization. The tag is never to be ignored or defeated;
- Awareness training for other than employee whose work operations are or may be in the area where energy control procedures may be utilized; and
- Retraining as required when there is a change in work assignments, in machines, a change in the energy, energy control procedures, or anew hazard is introduced.

- All training or retraining must be documented, signed and certified.

37.10 Highlights of the Procedure

- Notify Duty Manager that a Lock-Out/Tag-Out is required.
- Employee must be aware of potential hazards.
- Employee along with supervisor and the Duty Manager will identify all energy sources.
- The Duty Manager will place a multi-hasp, Red Lock and a warning tag onto the isolation device.
- Employee will to place a personal lock on the multi-hasp.
- The lock-out will be recorded on a Lock-Out/Tag-Out Log which will be kept by the Duty Manager in a central location.
- An attempt will be made to start the equipment or machinery after the isolation devices have been installed.
- On electrical equipment, a test will be performed with an AC voltage tester.
- After completion of work, notify the Duty Manager.
- Remove all personal locks.
- After ensuring all personnel are clear from the equipment, the Duty Manager will remove the Red lock.
- Record removal on the Lock-Out/Tag-Out Log.
- Notify all employees of start up.
- Ensure no employees are in danger or close proximity to the equipment.
- Start the equipment, or re-energize.

37.11 Removal of Personal Lock When Employee is Not Present

In the event a personal lock needs to be removed, and the employee is not present, the Superintendent/Foreman will verify the employee is not on site. The Superintendent/Foreman will then contact the Duty Manager and advise him/her of the circumstances, at which time a second check of the employees whereabouts will be made. Once it is determined the employee is off site and not in any danger, the lock can be removed.

In the event someone removes an employee's lock other than the employee, that employee must be notified immediately upon returning to the site.

37.12 Disciplinary Action

Any person who operates a valve, switch, or device to which “Danger” tags are attached, or remove such a tag without authorization will be subject to DBJV Disciplinary Action.

REMEMBER, “NO JOB IS SO IMPORTANT AND NO SERVICE SO URGENT WE CANNOT TAKE THE TIME TO PERFORM OUR WORK SAFELY.”

38 Material Handling

38.1 Purpose

The purpose of this program is to establish safe procedures for material handling, storage, use and disposal. By properly handling materials with mechanical means, safe work practices and correct storage methods, our employees can reduce the risk for injury or illness significantly.

Applicable Regulations

OSHA 29 CFR 1926.250

38.2 Responsibilities

Project Management shall:

- Ensure that material storage and handling is in accordance with the requirements of this program;
- Train employees in safe material handling and safe lifting procedures;
- Ensure compliance with this program; and
- Purchase and provide, at no cost to employees, personal protective equipment for material handling.

Employees shall:

- Comply with the requirements of this program; and
- Wear appropriate personal protective equipment to handle materials.

38.3 General Requirements

Material Storage

- Areas designated, as storage space shall be planned for accessibility and safe clearances;

- There will be no obstructions across passageways, traffic routes or rail beds;
- All storage space will be kept neat and clean for safe movement of materials and equipment;
- Materials shall not be stacked to an unsafe height and should be stable and secured if necessary;
- Permanent passageways should be permanently marked with “standard” traffic control signs and devices;
- Proper drainage must be planned before the lay down of materials is initiated;
- Clearance signs to warn of clearance limits for stacks of materials should be posted and highly visible;
- Overhead power lines and structures that could be hazardous to material handling equipment will be clearly marked with warning signs to keep employees away;
- All parts of cranes and material handling equipment, including loads hoisted should be kept at least
- 10 feet from energized overhead electrical lines or equipment. Minimum clearance will change according to line voltage, in cases where voltage exceeds 50KV;
- Underground utilities must be given sufficient protection from loads imposed by equipment;
- Materials must be stored in accordance with their compatibility as indicated on SDS’s;
- Fire suppression equipment must be provided in accordance with the specific class and size of fire potential posed;
- Materials bound by wrapping, banding or other means should be placed on racks, blocked, interlocked, or otherwise secured to prevent it from sliding, falling or collapsing; and
- Load limits for the floor or shelf of the structure being used for storage must be determined and not exceeded.

Manually Moving Materials

- A weight limit of 75 pounds or less has been set for employees manually lifting or carrying any material, tool or equipment;
- At weights greater than 75 pounds, employees need to get help to lift or carry such loads. Help can be in the form of material moving equipment or tools. When other employees are to share the load manually, the load cannot exceed more than 75 pounds per person;
- Employees are encouraged to use material handling equipment even when loads are less than 75 pounds;
- Inspect materials for slivers and rough, or sharp edges;
- Determine the weight of the load before applying force to move it;
- Know your own capacity for lifting;
- Clear the pathway of obstacles;
- Keep hands free of oil and grease;
- Firmly grip objects before moving and be careful to keep fingers our of pinch points;
- Use gloves and forearm protection when handing sharp-edge materials;
- Get assistance for large and/or heavy loads, getting help when you cannot properly grasp the load, cannot see around it, or cannot handle it safely;
- Use dunnage blocks under raised loads that require manual placement;

- Support loads safely with suitable blocking material or timbers. Avoid using material with evidence of cracks, rounded corners, splintered pieces, or dry rot;
- Attach handles and holders to loads when possible to reduce pinching or smashing fingers;
- Wear personal protective equipment to eliminate or reduce injury; and
- Hoist all loads with tag lines.

Lifting Techniques

- Have feet shoulder width apart, with one foot a little ahead of the other;
- Keeping your back straight, squat as close to the load as possible;
- Use diagonal opposite corners to hold the load. Use one hand to pull the load towards you and the other to lift;
- If necessary, tilt the load towards you to get a grip of the load;
- Bring the load as close to your body as possible using your arms;
- Always lift the load from your legs, keeping your back straight. Where squatting is not possible, bend the knees and allow them to take the weight of the load, relieving any strain on the back;
- When turning, make no unnecessary twists with your body moving only your legs and feet;
- When setting the load down, reverse the above process and squat, easing the load onto one corner as to protect the fingers from being pinched;
- If the load is too heavy or too bulky to carry, request the help of another employee or use a hand truck, four-wheel dolly or pallet jack;
- When more than one person is lifting a load, care should be taken to ensure that everyone makes the lift at the same time and that one person takes responsibility for calling the orders;
- When loads are lifted from a high place, position should be taken into consideration. Is the employee able to lift above themselves or will a ladder or suchlike device be required.

Moving Long and Bulky Materials

- When carrying more than one long load, materials should be tied together in several places before being carried;
- Always try to carry the load high in front to allow for good field of vision;
- Take care when turning not to strike any person(s), materials etc.
- Any material longer than ten (10) feet require an employee at each end of the load; and
- Any material that may be awkward to handle, blow in the wind etc. requires two or more employees.

Mechanically Moving Materials

- Barrels are never to be picked without the proper lifting device;

- Cutting picking eyes into barrels to move is not acceptable;
- Consider the weight, size and shape of the material when selecting equipment to move it;
- Consult the equipment's rated load chart to determine maximum weight and condition capacity. Rating charts should be posted on the equipment and not exceeded;
- Ensure that loads are centered and stable against shifting and induced dynamic loading;
- Keep the load in the lowest position possible on the equipment for traveling; and
- Stacked loads should be correctly piled and cross-tiered.

Stacking Materials

- Stacking of materials should be based on the frequency of need. Special bins should be used for odd shapes or fragile material and height limitations should be determined when planning storage space;
- Lumber: lumber cannot be stacked more than 16 feet high (if moved by hand) or more than 20 feet high (if moved by forklift). All nails must be removed from used lumber before stacking. Lumber must be stacked and leveled on solid supports and the stacks must be stable and self-supporting;
- Masonry Blocks and Bricks: stacks of loose bricks cannot be greater than 7 feet high. At 4 feet, the stack shall be tapered back 2 inches for every foot above 4 feet. At 6 feet, the stack shall be tapered back on-half block for each tier above 6 feet;
- Bags and Bundles: bags and bundles must be stacked in interlocking rows to remain secure.
- Bagged material must be stacked by stepping back the layers and cross-keying the bags at least ever ten layers. Boxed materials must be banded or held in place with cross-ties or shrink wrap plastic fiber.
- Drums, Barrels, and Kegs: stacking must be symmetrical. When stored on their sides, bottom tiers must be blocked to prevent rolling. If stacking material two or more tiers high, the bottom tier must be choked to prevent shifting in either direction. When stacked on end, planks or sheets of plywood or pallets must be placed between each tier to provide a flat, firm surface.
- Cylindrical Materials, Bar Stock, and Structural Steel: These materials should be stored in racks, when possible. Racks shall not face main aisles or traffic lanes nor create hazards to passersby when supplies are being removed. When racks are not available, material shall be stacked and blocked to prevent spreading or tilting; and
- Large structural steel beams shall be placed on solid level ground. They should be braced, especially when the height exceeds the width to prevent accidental tipping over.

Banding

- Flat and round steel strapping helps palletize and reinforce wood or containers during handling and shipping. Both are applied under tension, flat banding ends are overlapped and joined by a crimped metal seal, round strapping ends are twisted together to form a joint;
- Hazards associated with steel strapping include shifting or moving loads, loose ends, whipping, improper use of banding as handholds, tripping over banding and cuts from sharp edges;

- Load movement: banding should be removed with caution because loads may have shifted during transport and can tumble when tension is released;
- Loose End Whip: when tension is released, from removal of banding or breaks caused by incorrect strapping, loose ends will whip away from the package with enough force to cause serious injury. Always use caution when working around bundles strapped under pressure;
- Improper Use of Handholds: banding is not to be used as a handhold to access the load. Sharp metal edges can cause serious injury. In addition, if banding comes loose, the bundle may topple;
- Tripping and Cutting: tripping and cutting hazards are created when steel straps are not disposed of as soon as possible. Good housekeeping is essential when unloading bundles of material;
- Improper Use/Care of Machines: improperly maintained or abused tools and banding machines may malfunction during operation and increase the possibility of strap breakage. As with all equipment, banding machines must be kept in good condition and employees using the machine will be properly trained;
- Personal Protection: when applying or removing steel strapping, eye or face protection must be worn. If there is a break, the direction that strapping will whip is unpredictable, gloves must be worn while handling steel strapping. Leather palm gloves that extend to the wrist are recommended;
- When working around strapping machines, workers will not wear loose fitting clothes that might get caught;
- Safe removal of strapping from bound material will be with steel cutting tools designed to cut steel banding. Do not use a claw hammer, crowbar, chisel, or anything that applies leverage to a steel strap. Use of such tools will cause the band to fly apart with additional force;
- Before cutting a strap be sure other employees and/or machinery are clear of the work area to avoid being struck by flying straps or shifting loads;
- Two-hand operated strap cutters are recommended because they are designed to cut the strap and absorb the energy released when the strap is cut;
- If duck billed shears must be used, place a gloved hand on the strap and make the cut so the ungraped end is too short to reach the worker. Then if the strap springs, it will fly away from the cutter's face and body, which should be positioned out of direct line of the strap;
- Straps should be cut square and not at an angle. Straps cut on an angle have sharper ends and increases potential cut hazards.

38.4 Conveyors

General

- When using conveyors workers' hands may be exposed to nip points where the conveyor runs over support members or rollers; workers may be struck by material falling off the conveyor; or they may become caught on or in the conveyor thereby being drawn into the conveyor path;
- Employees must never ride on material handing conveyors;

- Where the conveyor passes over work areas or aisles, guards must be provided to keep employees from being struck by falling objects;
- Crossovers must be guarded to protect employees and either marked with a warning sign or painted a highly visible color; and
- Screw conveyors must be completely covered except at loading and discharge points.

Guards and Emergency Stops

- Guards must be provided at loading and discharge points to protect employees from contacting the moving screw;
- Guards are moveable and must be interlocked to prevent conveyor movement when not in place;
- Emergency buttons or pull cords designed to stop the conveyor must be installed at the employee workstation; or, the station must be adequately guarded to positively prevent all injury exposure;
- Access points on the conveyor should have an emergency stop cable that extends the entire length of exposed belt, or guarded; and
- The emergency stop switch must be designed to be reset before the conveyor can be restarted.

38.5 Disposal of Waste Material

General

- When materials must be dropped more than 20 feet to any point lying outside the exterior walls of a structure, an enclosed chute of wood or equivalent material shall be used as a ramp. When debris is dropped through holes or openings in the floor without the use of a chute, the area onto which the material is dropped shall be completely enclosed with barricades;
- Enclosure requirements are as follows:
    - Barricades must be at least 42 inches high and at least six (6) feet back from the projected edge of the opening above;
    - Wind velocity and potential for carrying materials should be calculated into the disposal plan;
    - Signs warning of the hazard of falling materials should be posted at each level.

- A spotter can be posted, if necessary, at the area of retrieval to keep area clear of unnecessary traffic;
- Debris shall not be removed from the disposal site until all handling ceases from above;
- All scrap lumber, waste material, and rubbish should be removed from the immediate work area as the work progresses;
- All solvent waste, oily rags, and flammable liquids should be kept in fire resistant, covered containers until removed from the work site;

- Used oil will be recycled; and
- Refer to the environmental program for compliance

39 Motor Vehicles & Mechanized Equipment

39.1 Purpose

The purpose of this program is to establish rules and regulations for safe operation of motor vehicles, and safe and proper use of mechanized equipment. As a company, we can avoid any unwanted loss incidents by preparing and training our employees on the proper way to operate vehicles and equipment.

Not only are motor vehicles and equipment potential hazards to employees' safety, but also equipment damage incidents are financial losses. The details of this program have been instituted to prevent such situations.

Applicable Regulations

OSHA 29 CFR 1926.600

OSHA 29 CFR 1910.178(l) OSHA 29 CFR 1926.20(b) (4)

39.2 Responsibilities

Project Management shall:

- Ensure that motor vehicles and equipment are operated and maintained according to this program, in addition to manufacturers, federal, state, and local; and
- Enforce the rules of this program.

Employees shall:

- Operate vehicles and equipment for which they are qualified;
- Perform daily visual inspections on vehicles and equipment to which they are assigned; and
- Comply with the rules of this program.

39.3 Procedure

Only trained and qualified operators who have been designated by their employer will be allowed to operate machinery and heavy equipment An Operator Designation form must be submitted to the DBJV

Safety Department Administrator for each individual worker prior to the operation of the equipment (Appendix C-22).

General

- Parked equipment shall have the wheels choked or parking brake set;
- Parked equipment on an incline shall have the wheels choked and parking brake set;
- When unloading off a trailer chocks, supports and dock plates shall be secured prior to unloading
- Operator to verify trailer chocks, supports and dock plates are secured prior to loading or unloading
- No modifications, which affect the capacity of safe operation of equipment, shall be made; without manufacturers written permission
- Replace any damaged or worn parts and carry out equipment maintenance as per manufacturer's specifications.

Daily Visual Inspections

- Daily visual inspections must be performed on each piece of equipment prior to use;
- All applicable checklists shall be completed, and turned into supervisor;
- All safety defects shall be corrected before the vehicle is used.
- If there are safety issues with the equipment it shall be locked or tagged out of service.
- Where multiple shifts occur they shall be inspected prior to each shift

Vehicle/Equipment Safety Equipment

- Every vehicle with Roll Over Protective Structures (ROPS) must have a seat belt;
- Seat belts inspected must be worn in all vehicles supplied with them;
- Every vehicle must be equipped with an audible reverse signal alarm;
- All pick-ups will have a back-up alarm;
- Equipment left unattended at night next to a highway or active construction area must have lights or reflectors to identify the location of the equipment;
- All haulage vehicles: loaders, cranes, shovels etc. must have a cab shield and/or canopy;
- All rubber-tired vehicles shall be equipped with fenders.

Safe Operation

- Tools and equipment must be secured when transported in employee compartment;
- Start the engine only from the operator's compartment;

- Never short across the starter terminals or across the batteries, as this could bypass the engine neutral-start system as well as damage the electrical system;
- Be certain no one is working on, underneath, or close to the machine before starting the engine or beginning to move the machine;
- Mount and dismount the machine only where steps and/or handholds are provided;
- Do not allow riders on the machine unless additional seat, seat belt, and Rollover Protective
- Structure (ROPS) or Falling Object Protective Structure (FOPS) are provided;
- Riding in the bed of pick-up trucks is prohibited;
- Do not operate equipment at unsafe speeds or above posted speed limits
- Pushing equipment with vehicles or other equipment is strictly prohibited.
- Access to off load flatbed trailers and rigid vehicles. A ladder for the purpose shall be provided and where access over 6 ft personal fall protection devices shall be considered while working on the trailer

- Hazards involved with operating mobile equipment, to load and unload materials onto low bed and tilt bed trucks owned by the company shall follow the below requirements:
- Only materials and equipment owned such as trench boxes, mobile equipment etc. may be loaded by the truck operator.
- Other materials such as pre-cast structures, pipe provided by suppliers, barrier and other materials provided to projects or by outside suppliers shall not be handled by drivers. A qualified operator and laborer shall be utilized when picking up or dropping off at a project site.

Where truck drivers are authorized to operate material handlers or industrial forklift trucks as per this program they may do so. This only applies to the confines of the company lay down yard but does apply to project sites

Maintenance

- Seat belt must be checked for expiration date (Typical 3 years) and replaced as necessary;
- No employee shall use any motor vehicle equipment having an obstructed view to the rear unless the reversing signal alarm is audible above the surrounding noise level. The vehicle is backed up only when an observer signals that it is safe to do so;

- Heavy machinery equipment which are suspended or held aloft by use of slings, hoists, or jacks shall be substantially blocked or cribbed to prevent falling and shifting. Safety tire rack cage or equivalent protection shall be provided and used when infusing, mounting and dismounting tires, installed or split rims or rims equipped with locking rings; and
- Trucks with dump bodies shall be equipped with positive means of support permanently attached and capable of being locked in position to prevent accidental lowering of the body when maintenance or inspection work is done.

Welding on Equipment-Vehicles

- Welding is a specialized procedure that requires the proper identification of the material to be welded, the proper selection of the welding method, welding rod, temperature settings and stress relieving methods. Each of these elements is critical to the success of the repair being made. Structural components such as main frames cross members and booms must be repaired in a controlled environment by a qualified and certified welder.
- Repair welds made on equipment or vehicles must be done based on the manufacturers' requirements.
- Welder certification must be documented and kept on file in each BU they work. Note: Welder certification must be specific for the type of welding performed; Mig, Tig, Stick, and the documentation must be resubmitted every six months.

Training

- All employees are required to be trained and certified prior to operating each specific type of equipment
- Formal Training shall include instruction, written testing and practical evaluation or task testing.
- Content shall include load capacity, instructions and controls, braking and stopping distances, refueling and fluid checks, daily inspections, elevation changes such as ramps, visibility and blind spots, counterbalances, swing radius and center of gravity stability of equipment.
- Formal training shall be carried out by qualified instructors who shall have the knowledge and ability to teach and evaluate. Qualified instructors and evaluators will be identified in a formal operators training program.
- All training shall be documented with employee name, date of training and name of instructor carrying out the training
- Refresher training will be given for the following reasons:
    - Unsafe operation
    - Accident or near miss
    - Different equipment type
    - Changes in conditions
    - Based on legal requirements Federal, state or local

- Forklift operators are required to be re-evaluated every 3 years
- CDL drivers will be re-evaluated annually
- Non –CDL operators will be re-evaluated ever three years

Personnel Transportation

- Employees will be transported from an off-site designated parking area to a designated drop off site in Terminal XX Level XX
- They will be picked up at end of shift
- Bussing schedules will adjust to reflect the phase of the work and to accommodate any alternate work shifts
- Employees will enter work areas through designated access points to the project site to verify ROCIP/ Project Enrolments

Material Deliveries

- Material Deliveries will be coordinated through a site specific logistics plan outlining delivery areas, times, staging areas, etc.

40 Noise

40.1 Purpose

The purpose of this program is to establish a noise exposure program to prevent any temporary or permanent noise- induced hearing loss to our employees. Although the easiest way to prevent hearing loss is to provide hearing protection, we must examine the feasibility of engineering controls to reduce noise levels and administrative/work practice controls to reduce the time of exposure to noise by our employees. The use of hearing protection must only be implemented after all other controls have been ruled out to reduce noise levels.

Applicable Regulations

OSHA 29 CFR 1926.52

OSHA 29 CFR 1910.95

40.2 Responsibilities

Project Management shall:

- Evaluate operations, equipment and tools for the presence of hazardous noise levels; when conditions warrant, monitor and identify workplace noise levels to determine which employees in specific areas have exposure to noise;
- Monitor noise levels in the course of day-to-day work, and when there is a change in production, equipment or controls to existing activities;
- Provide hearing protection, at no cost to employees, when monitored noise levels demonstrate their need;
- Train employees in topics identified in this program, and
- Enforce the rules of this program. Safety Department shall:
- Evaluate operations and noise monitoring results on projects. Employees shall:
- Wear hearing protection when deemed necessary by their supervisors; and
- Use engineering and administrative controls as directed in construction plan(s).

40.3 Procedure

General:

- Projects will monitor and identify workplace noise levels using a calibrated sound level meter in the course of day-to-day work, and whenever there is a change in production processes, equipment, or controls;
- The goal of monitoring noise levels is to determine if employees in specific areas have exposure to noise;
- Employees will wear hearing protection until noise monitoring demonstrates that there is no exposure;
- All employees exposed to sound levels greater than 85dBA shall use mandatory hearing protection complying with ANSI S3.19;
- Controlling noise at the source utilizing engineering controls must be considered first before any other tactics are implemented;
- Warning signs will be posted in conspicuous locations at worksites near the high noise level areas to ensure that hearing protection is worn when required;
- Evaluation of hearing protection for the specific noise environments in which the protector will be used shall be completed by Project teams where necessary based upon site specific noise assessments
- When the following tasks are being performed, hearing protection is mandatory:
- Pile driving;
- Jack hammering;
- Chipping concrete or steel with power tools;
- Operating gasoline chain or cut-off saws;
- ARC gouging; and
- Hoe Ram Operator. Permissible Noise Exposure

The following table gives the minimum Permissible Exposure Limits (PEL's) for noise exposure.

Table 42 A – Noise PEL's

Duration per Day (Hours)	Sound Level dBA Slow Response
8	90
6	92
4	95
3	97
2	100
1.5	102

1	105
.5	110
.25 or less	115

Hearing Protection:

- The project will order and provide a variety of adequate hearing protection for employees. All employees subject to work in those areas must be provided with appropriate hearing protection devices from among the types listed in the table below;
- Employees are required to wear company-provided hearing protection and at no time may an employee tamper with or modify any hearing protection equipment; and
- Damaged or defective equipment must be discarded and replaced immediately.
- Employees will be trained in the use, care and fitting of the hearing protective devices
- Hearing protection will be provided at no cost to the employee and shall be replaced as necessary

Table 42 B - Appropriate Hearing Protection Devices

Type	Advantages	Disadvantages
Ear Muffs	One size fits most adults. Can easily be seen at a distance. Can be put on, adjusted, etc. while wearing gloves. Can be warming to the ears in cold environments. Better impact noise attenuation.	Usually have a lower noise reduction rating that earplugs, but still provide effective protection. They are bulky and cannot fit in pockets or stored in tool kits. May interfere with and not sit properly when glasses, hearing aids, etc. are worn. Because of their size, may not be suitable for the work quarters. Excessive heat and sweat accumulation may make them uncomfortable to wear in hot locations. Are more difficult to clean than earplugs.

Ear Plugs (2 types) Pre-formed Expandable	Have highest noise reduction rating and are very effective in protection your hearing when properly worn. Do not interfere with work in close quarters. Are easily carried and stored when not in use. Compatible with glasses or any other type of headgear without affecting performance. Disposable.	Fitting can be complicated. Ear canals vary in diameter and the left and right ear canals are not necessarily similar in size, shape or position. Can be easily left in other work clothes or fall out of the jacket or shift pocket and become lost. Cannot be seen at a distance that makes it difficult to evaluate if person is wearing them. Gloves must be removed and hands washing prior to putting in earplugs.

40.4 Training

General:

- Training will be conducted for all employees during New Hire Orientation;
- Training will be conducted on an annual basis through means such as toolbox talks; and
- Retraining will be conducted when there are changes in the program, equipment, process, etc.

Topics

- Effects of noise on hearing;
- The purpose of hearing protectors;
- The advantages, disadvantages, protection levels, various types of hearing protection;
- The proper use, care, cleaning and fitting of hearing protection;
- The purpose of audiometric testing; and
- The details of this program. Retraining:
- Retraining will be conducted at least on an annual basis, or sooner if required; and
- Information provided on the retraining program will be updated to be consistent with changes in work processes and/or protective equipment.

40.5 Recordkeeping

General:

- The project will maintain accurate records for all noise level surveys and employees exposures;
- Records of noise monitoring will be provided to employees, or designated representatives thereof, upon written request to the project.
- Accurate records of all employee exposure measurements shall be maintained as required by the regulation.

41 Personal Protective Equipment

41.1 Purpose

The purpose of this program is to establish guidelines for the use of personal protective equipment (PPE). Although PPE can prevent an employee from injury or illness, engineering and administrative controls should always be considered first before relying on PPE.

Applicable Regulations

OSHA 29 CFR 1926.25, 100, 102

OSHA 29 CFR 1910 132, 134, 135, 136,138

MSHA PART 56 SUBPART N ANSI Z89.1-1969

ANSI Z87.1

41.2 Responsibilities

Management shall:

- Comply with all Personal Protective Equipment Policies and Procedures.
- Ensure compliance with the program at every level of the organization.
- Enforce the policies set forth within this plan. Subcontractors shall:
- Comply with all Personal Protective Equipment Policies and Procedures.
- Purchase and provide, at no cost to employees, personal protective equipment deemed necessary;
- Provide a hard hat, high visibility vest, safety glasses, leather work gloves and any other personal protective equipment necessary upon initial hire;
- Evaluate operations for application of engineering controls as a first line of defense before using personal protective equipment as a means of protection from the hazard;
- Enforce the use of personal protective equipment by employees and visitors to the site; and
- Upon initial hire train employees in topics identified in this program.
- Ensure that employee owned PPE is not allowed on the project. Employees shall:
- Wear all personal protective equipment provided to them by management when deemed necessary;
- Return old used personal protective equipment in exchange for a new issue.

41.3 Training

Employees required to use personal protective equipment will be trained in the following:

- Correct donning and doffing of personal protective equipment;
- Correct uses and protection levels;
- Cleaning, maintenance and storage when applicable;
- Limitations of the personal protective equipment with which they have been provided.

41.4 Procedure

General

The following are the minimum requirements for all personnel while working on DBJV

Projects:

- Long Pants
- Shirt with a Minimum 4" Sleeve
- Class III Traffic Vest
- Hard Hat with Bill Facing Forward
- Steel or Composite Toe Work
- Safety Glasses
- Gloves

- Hard hats shall be worn on site at all times, with the exception of inside tri-axles, dump trailers, tanker trucks, and inside office buildings;
- Bump caps are not permitted on site;
- All hard hats must meet ANSI Class B type, Z89.1-1969;
- At no time shall any type of baseball cap be worn underneath a hard hat;
- Hard hats will be worn will be bill of the cap facing forward;
- Hard hats shall be worn under all welding hoods;
- A hard hat must be replaced if it has been damaged, cracked or received a heavy blow;
- Painting or drilling of any sort will not be permitted on any hard hat;
- Suspensions must be replaced annually; and
- The shell of the hard hat must be replaced 5 years after the date of first use, NOT the date of manufacturer.

Safety Glasses

- Safety glasses at a minimum shall be worn on site at all times;
- Employees in the cab of a vehicle or equipment that is fully enclosed are not required to wear safety glasses;
- Employees who have prescription glasses must wear goggles, face shields, or over glasses or be provided with prescription safety glasses with side shields at all times;
- All eye protection will meet ANSI Z-87.1;
- All safety glasses will have a Z-87.1 symbol embossed on the product;
- Safety glasses cleaning materials will be provided. Foot and Leg Protection:
- Steel or composite toe work boots shall be worn at all times and should be 6" in height;
- Kevlar type chaps must be worn when using a chain saw to give additional protection to the legs;
- Metatarsal guards must be worn for Jack Hammering or Jumping Jacks. Protective Clothing:
- High visibility vests are required at all times while working on DBJV Projects;
- Flame-Resistant/retardant, duct or leather must be worn in environments exposing workers to extreme heats and sparks;
- Long sleeves and/or aprons, heat-resistant gloves shall be used when working with elevated liquid temperature products;
- Rubber, neoprene, vinyl or other protective material suits must be worn to protect employees when working in or around wet conditions, acids, corrosives, chemicals and dusts.
- US Coast Guard approved life jackets or buoyant work vests will be worn when working over or near to water, or where the danger of drowning exists; and
- When an employee removes his/her protective clothing, he/she must:
- Inspect it for damage, report anything that is torn or worn;
- Remove contaminated clothing from the top down, do not let clothing touch skin; and
- Place soiled or contaminated clothing in the assigned places for cleaning or disposal.

Goggles and Face Shields:

- In addition to safety glasses, polycarbonate face shields must be worn when exposure from work operations creates airborne particulates and when handling chemicals;
- These operations include, but are not limited to:
- Concrete chipping, cutting, drilling
- Loading and unloading liquid asphalt
- Elevated liquid temperature products
- Chain saw operations (wire mesh face shield only)
- Grinding or cutting wheels and shall include wire wheel
- Blowing with compressed air.
- Goggles or safety glasses shall be used when operating circular wood cutting saw or reciprocating saw.

Table 43 A – Eye Protection Table

Hitting steel upon steel	Safety glasses or goggles **
Pouring Concrete	Safety glasses
Grinding	Face Shield with safety glasses
Carb Saw	Face Shield with safety glasses
Walk behind saw	Face Shield with safety glasses
Chainsaw	Face Shield with safety glasses
Sand blasting	Air supplied sand blast hood
Portable abrasive sawing	Face Shield with safety glasses
Skill Sawing	Safety glasses
Chipping	Face Shield with safety glasses
Jack hammering concrete	Face Shield with safety glasses
Jack hammering other than concrete	Safety glasses
Working with Tar Pots and asphalt tack	Face Shield and safety glasses
Gas welding	Welding goggles #6 to #8, shade lenses #5 to #8
Gas cutting	Burning goggles #4 to #6, shade lenses
Electric arc welding	Welding Helmet #10 to #12, shade lenses and safety glasses
Welder's helper	Safety glasses, clear or shaded lenses
Insulation spraying	Air supplied face mask
Concrete breaking	Face Shield and safety glasses
Powder actuated tool	Safety glasses
Power or air nailer	Safety glasses
Corrosive acids or alkalis	Chemical goggles, face mask
Machine wire brushing	Face shield
Airborne objects in shop condition	Safety glasses
Cleaning with air lance or excavating w/air knife	Face Shield with safety glasses
High pressure water cleaning	Face shield
Stud welding and spot welding	Face shield and safety glasses

* These are minimum requirements for each task shown. Alternative equipment must provide at least the same degree of protection.

**Goggles can be used in lieu of safety glasses for any task listed above.

Welding Hoods:

- Welding hoods adaptable to hard hats must be worn at all times during welding operations.
- Welding hoods should never be worn as a face shield unless designed for impact per the manufacturer.

Welding and Chipping Goggles:

- Welding and chipping goggles must be worn during burning operations;
- Welding and chipping goggles must be cupped to protect against slags and sparks; and
- Safety glasses would meet this requirement if used in conjunction with a face shield.

Hand Protection:

- Leather work gloves will be issued by management, where required;
- Anti-vibration gloves SHALL be worn and issued to all appropriate employees during operations such as chipping, drilling and using air actuated tools;
- Rubber, neoprene or vinyl gloves SHALL be worn and will be issued to protect against chemicals;
- Heat resistant gloves SHALL be worn and will be issued to protect against thermal burns;
- Kevlar cut resistant gloves SHALL be worn and will be issued and required when laceration and puncture hazards are present;
- All Job Hazard Analyses will implement the correct glove for the specific hazard an employee might face. Check SDS's for specific instructions on which type you need for protection
- For best protection:
    - Check the gloves before wearing them to make sure they are not damaged, cracked or torn in any way;
    - Make sure that the gloves fit properly (they should cover hands completely and fit comfortably);
    - Gloves with straps used as tightening devices should never be used as they may get entangled in machinery or equipment.
    - Your hands should be protected anytime you are engaged in cutting, welding, painting, using chemicals, handling sharp materials, cleaning up scrap, handling lumber or doing anything else that may cause hand injury. Work gloves do not protect your hands from

all types of injuries and they are not a substitute for common sense and alertness. You still have to do your part if you want to maintain your hands. This not only entails keeping your hands out of pinching, crushing and burning situations at all times, but also requires that you be able to select the right glove for the task you need to accomplish and that you put them on. All Standard and On the Spot Hazard Analyses should implement the correct glove for the specific hazard an employee might face. All gloves offer some degree of protection, but there are advantages and disadvantages to all types of gloves. Each hazard you work with may require a specific kind of glove.

Glove Selection:

The gloves below are available through a number of suppliers. If a certain glove is needed for the task it should be included in the pre planning of the task and purchased.

Leather Glove: Great for material handling, some puncture resistance, shield against sparks and has some thermal resistance.

Insulated Leather Glove: Great for material handling, some puncture resistance, shield against sparks and has some thermal resistance in colder temperatures

Mesh Natural Glove: Good for cement work and general maintenance.


Insulated Mesh Natural Glove: Good for material handling in COLD conditions.


Blue and Black Palm Glove: Great dexterity. Good for work that requires handling smaller items such as nuts and bolts.


Insulated Blue and Black Palm Glove: Good for material handling and general COLD and WET conditions.


Mechanical Glove: Good Dexterity and Oil Resistance for Mechanical crews/ Mechanics. Good for carpentry work and general maintenance. Durable, puncture resistance, shield against sparks and has some thermal resistance.

Anti Vibration Glove: Required for Jackhammers, rivet busters, chipping guns and various tools that cause vibration in the hand.

Reflective Leather Glove: Good for Truck Drivers and workers that are in high traffic workzones. Can be used for operations requiring spotters.

Cut Resistant Glove: Required when working with sharp edge material and when cutting with open blades.

Fueling Glove: For use with diesel fueling operations.

42 Pile Driving

42.1 Purpose

The purpose of this program is to establish a safe operating procedure for the use of pile drivers, and pile driving equipment.

Applicable regulations

OSHA 29 CFR 1926.603

All pressure vessels and piping systems that are part of, or used with, pile-driving equipment shall meet the applicable requirements of the American Society of Mechanical Engineers, Pressure Vessels Codes.

42.2 Responsibilities

Management shall:

- Ensure compliance with the program at every level of the organization.
- Enforce the policies set forth within this plan. Subcontractors shall:
- Ensure that all employees have been trained according to company safety and health regulations regarding 29 CFR 1926.603.
- Comply with all company safety and health regulations.

42.3 Procedures

- Adequate safety glasses shall be provided and worn by exposed workers at all times;
- Ear protection will be worn by all employees as provided;
- Due to the weight and awkwardness of pile driving apparatus, strict supervision is required, especially when moving on grade;
- Outriggers and rubber-tired equipment must be in position to provide maximum stability when in use;
- A laydown plan of the piles or sheets will be done by the Superintendent;

- In cut, fill or other area where soil may be unstable, mats and substantial cribbing should be used for supports;
- Offloading of piles or sheets from the trucks may require fall protection;
- Steam or air hoses shall be securely fastened to hammer to prevent whipping or spraying of steam or air on workmen nearby;
- Whip checks, or equivalent means, shall be provided for each hose connection;
- Mechanical pile threaders and remote release shackles which are operated from the ground are our first choice when planning operations;
- All pile monkey operations will have 100% fall protection, including the use of man lifts or baskets;
- Steam or air supply lines should have shut off valves within easy reach of operators;
- Hooks, slings, leads, and all other connections shall be checked for damage and cracking prior to mobilization and periodically during use;
- All moving parts in the lead must be periodically lubricated;
- The use of metal-armored hose is recommended;
- All employees shall be kept clear when piling is being hoisted into the leads. When piles are being driven in an excavated pit, the walls of the pit shall be sloped to the proper angel, or sheet piled and braced;
- When steel tube piles are being "blown out", employees shall be kept well beyond the range of falling materials. A tag line should be attached to the pile for steadying during operations;
- Precautions shall be taken to prevent exposure to items falling from above such as cushion blocks, auger spoils, pile chips, and steel debris;
- All personnel involved with the pile driving operation shall not stand in front of the leads while driving piles;
- When shutting down rigs, all pressure should be relieved from lines;
- When not in use, hammer should be lowered to the base of leads and blocked;
- Defective air or steam hose should not be repaired with makeshift patching, but should be replaced or soundly repaired before reuse;
- Under no condition should any repairs be attempted while pile driver is operating, or under steam or air pressure;
- When the top man is guiding a pile into position in the leads, he should be cautioned against putting his arms or hands between the pile and the inside guide, or on top of the pile;
- Taglines should be used to guide the pile;
- Gears, fly wheels, and drive shafts should be fully enclosed. Boilers, hoisting drums and brakes should be kept in good operating condition;
- Blocking shall be provided on top of booms to prevent damage to lacings from hoist line whipping;
- A strong ladder, securely fastened, should extend the height of the rig, and should be maintained in good condition at all times. 100% fall protection shall be provided for climbing and working in the leads;
- Stop-blocks shall be provided for the leads to prevent the hammer from being raised against the head-block;
- A blocking device, capable of safely supporting the weight of the hammer, shall be provided for placement in the leads under the hammer while employees are working under the hammer. Guards shall be provided across the top of the head-block to prevent the cable from jumping out of

the sheaves. When the leads must be inclined in the driving of batter piles, provisions shall be made to stabilize the leads;

- Fixed leads shall be provided with ladder and adequate rings, and a ladder safety climbing device.
- If the leads are provided with platforms, they will be protected by standard guardrails;
- Hoisting of all piling shall be done by use of a closed shackle or other positive means of attachment that will prevent accidental disengagement;
- Riding the ball, hook or loads is prohibited;
- A boatswain's chair is not allowed;
- If piling cannot be pulled without exceeding the load rating of equipment, a pile extractor shall be used;
- Dogs on pile driver hoist drums that automatically disengage either by relieving the load or rotating the drum shall be prohibited;
- Pile hammers shall be lowered to bottom of leads while pile driver is being moved;
- Use caution if driving creosoted wood piles, as the hammer impact may spray creosote, injuring the eyes and skin;
- Safe access to the top of the crane and any attached power units shall be provided;
- Signaling shall be by the Field Manager, or signalman designated by the Field Manager; and
- Access into a pile driving area will require coordination with the pile driving Field Manager.

43 Respiratory Protection

43.1 Purpose

The purpose of this program is to establish, implement and maintain an appropriate Respiratory Protection Program to protect employees from respiratory hazards on our jobsites. Respiratory Protection is an area of Safety and Health that DBJV takes extremely seriously.

Through education and training, we believe that working in and around respiratory hazards and environments can be managed safely and effectively. As a company, we believe in engineering out or administratively controlling respiratory hazards and environments. When these controls cannot be instituted, we will use appropriate respiratory protection. DBJV shall ensure that respiratory hazards within our sites are evaluated and that information concerning these hazards is transmitted to all affected employees through our construction planning process.

Applicable Regulations

OSHA 29 CFR 1910.134

43.2 Responsibilities

Safety Management shall:

- The Safety Department is responsible for respiratory protection program and has the authority to make necessary decisions to ensure its implementation and maintenance. The Safety Director/Manager has the authorization to halt any company operation where there is danger of serious personal injury;
- A respiratory program administrator shall be appointed and shall approve all site specific respiratory programs prior to implementation at the site, and thereafter review as required; A Safety Manager will for the purposes of this program normally assume this role when mentioned
- The program shall be reviewed and evaluated on an annual basis, or when changes occur to 29
- CFR 1910.134, that prompt revision of this document or when facility operational changes occur that require a revision to the program;
- The respiratory program administrator shall conduct routine evaluations to ensure the written program is being followed. Topics to be considered during the evaluation shall consist of: respirator fit, selection, maintenance, interference with job performance, discomfort, employee concerns; and
- Provide a record Retention program for the Medical Evaluation Questionnaire in accordance with HIPA requirements. Shall also provide a record retention program for Fit Test results and training records of each employee required to wear respiratory protection and training.

Project Management shall:

- Evaluate work activities for the presence of respiratory hazards and prepare work package plans for each activity;
- Where employees may be exposed to harmful vapors and oxygen deficient atmospheres the project team shall look to Institute engineering and administrative controls, as a first line of defense against respiratory hazards. Where engineered control measures are not feasible or during emergency situations with high exposure, respirators shall be provided which are applicable and suitable for the intended purpose.
- Shall appoint a qualified individual to be the Site Respiratory Program Administrator who shall prepare the Work Site Respiratory Programs (WSRP) for each substantially unique airborne exposure at the jobsite. This individual must have knowledge of the complexity of the program, able to conduct evaluations and have the proper training.
- The Site program administrator must address appropriate surveillance and ensure employees leave the area to wash, change cartridges, or if they detect break through or resistance
- Purchase suitable respirators to protect employees from respiratory hazards;
- Ensure each employee wearing respiratory protection has the required medical clearance, fit test records and training prior to wearing the respirator. This shall be provided free of charge to the employee.
- Train employees in topics identified in this program; and ensure employee has knowledge of respirators, fit, use, limitations, emergency situations, wearing, fit checks, maintenance and storage, medical signs and symptoms of effective use based on OSHA standards. This training shall be provided before requiring an employee to use the respirator
- Enforce the use of respirators based on the hazards that the worker is exposed to and ensure that
- NIOSH certified respirators are selected based on the hazards and factors affecting performance
- Working in IDLH atmospheres is not allowed and shall be eliminated through practiced engineering controls, other than wearing respirators.

Employees shall:

- •Correctly wear respirators in accordance with instructions and training during operations designated by their supervisor;
- Not have facial hair of any type that interfered with the correct fit of a respirator;
- Properly clean, store and maintain respirators according to the direction of their supervisor; and
- Guard against damage to the respirator and shall immediately replace suspect respirators and shall report such damage or malfunction of the respirator to their supervisor.

43.3 Procedure

Site-Specific Respiratory Protection Program

- In addition to meeting the requirements of this program, all projects that use respirators will be required to have a site-specific respiratory protection program;
- In order to have an effective program, address the following questions in the development stage:
    - Who is the program administrator?
    - What procedures are used to select respirators for use in the workplace?
    - Who will be doing the medical evaluations for the employees (which facility or facilities)?
    - What are the fit testing procedures for tight fitting respirators?
    - What are the procedures for proper use of respirators in normal and foreseeable emergencies?
    - What are the procedures and schedules for cleaning, disinfecting, storing, inspection, repairing, discarding and otherwise maintaining respirators?
    - What are the procedures to ensure adequate air quality, quantity and flow of breathing for atmosphere supplying respirators?
    - What are the methods to be used to ensure that the employees are trained the in respiratory hazards to which they are potentially exposed during routine and emergency situations?
    - What are the methods of training employees in the proper use of respirators including, donning and removing a respirator, cleaning, positive/negative pressure fit testing, limitations of their use and maintenance and cleaning of a respirator?
    - What are the procedures of regularly evaluating the effectiveness of a program?
    - When respirator use is not required, but are provided at the request of the employees or permit employees to use their own respirators, the following criteria will be met:
        - Determine that such respirator use does not create a hazard;
        - Review 29 CFR 1926.134; and
        - Training on cleaning, storage and maintenance of the respirator to prevent it from being a hazard.

Surveillance of Work Area Conditions

- As each activity progresses, surveillance of work area conditions and degree of employee exposure or stress shall be monitored and measured;
- The site Safety Coordinator will make a reasonable estimate of employee exposure by conducting a hazard evaluation for each operation, process, or work area where airborne contaminants may be present in routine operations or during an emergency.

- The evaluation may include:
    - Identification and review of a list of hazardous substances used in the work area;
    - Review of work processes to determine source of potential hazardous substances;
    - Review of process records;
    - Employee interviews;
    - Air Monitoring (may be mandatory if the contaminant is regulated by a separate OSHA Standard e.g. Asbestos, Lead, silica, methylene chloride, etc.);
    - Published studies by trade associations, manufacturer, historical data;
    - Mathematical approaches using physical & chemical properties of the contaminant;
    - If a reasonable estimate cannot be obtained then IDLH atmosphere must be assumed; and the site Safety Coordinator will revise and update the hazard assessment as needed.

- Air Sampling will be conducted as per the requirements in this section. Air Sampling Procedure
- Baseline sampling shall commence at the beginning of each operation which is identified as a potential for airborne exposure. Historical data from similar operations producing airborne exposure can be used as baseline exposure monitoring, when feasible, but must be evaluated according to activity, length of operation, conditions in which the samples were taken, etc;
- Personal air sampling shall always be the first method to determining actual employee exposure.
- Area monitoring shall be used to supplement personal air sampling but shall not be the only method of determining exposure;
- Air Sampling will be representative of the exposure that the employee is exposed to throughout his daily shift;
- An Air Monitoring Worksheet shall be completed for each sample taken on any given day. If several different samples are taken on the same day then one Air Monitoring Worksheet can be filled out providing the conditions for each employee are the same, otherwise a separate worksheet is required;
- A Chain of Custody will be completed for each batch of samples that are to be sent to the Laboratory for analysis, along with the Air Monitoring Worksheet. Both these documents are to remain with analysis received back from the Laboratory;
- If the initial baseline results demonstrates employee exposure to be below the action level, then ;
- Personal and Area Air Sampling will take place thereafter on at least three consecutive measurements taken at least seven (7) days apart;

Air Sampling Frequency

- Results will be dealt with as follows:
    - Where results demonstrate that the employee exposure is below the action level, monitoring shall be continued until sampling shows no exposure on at least three consecutive measurements taken at least seven (7) days apart;
    - Where results demonstrate that the employee exposure is above the action level, but below the permissible exposure limit, monitoring shall be repeated at least every 6

months. The monitoring shall continue until at least two consecutive measurements, taken at least 7 days apart, are below the action level, at which time the monitoring for that employee or operation may be discontinued; and
    - If the initial monitoring reveals that employee exposure is above the permissible exposure limit, the monitoring shall be repeated quarterly. The monitoring shall continue until at least two consecutive measurements, taken at least 7 days apart, are below the permissible exposure level, at which time the monitoring for that employee or operation may be discontinued.
- Whenever there has been a production, process, control or personnel change which may result in new or additional exposure to any contaminant, or whenever AAM has any reason to suspect a change which may result in new or additional exposures, additional monitoring shall be conducted; and
- Air monitoring results and exposure assessment shall be supervised by the Respiratory Program Administrator.

Medical Evaluation:

- Persons shall not be assigned to tasks requiring the use of respirators unless it has been determined that they are physically able to perform the work and use the equipment;
- The Corporate approved physician will be used in all instances for medical evaluate and clearance for respirator use;
- The medical evaluation prior to fit testing shall be confidential and shall be conduct during normal working hours and shall be convenient ,understandable for the employee who shall be given the chance to discuss the results with the physician or other (PLHCP)
- Prior to work commencing, each required employee shall complete a Medical Evaluation Questionnaire (MEQ) in accordance with CFR 1910.134. This shall be sent to the approved physician for clearance;
- The examining physician will then evaluate the employee, based on their answers, and certify clearance for respirator use under any conditions that they see fit. This may involve clearance by MEQ alone, consultation with the Physician and/or a medical examination;
- This clearance will be forwarded to the Corporate Respiratory Program Administrator and the Site Respiratory Program Administrator for processing and recordkeeping. Any conditions stated on the clearance will be followed; and
- Additional medical evaluations shall be provided when:
    - An employee has any change in medical status;
    - An employee reports medical signs or symptoms that are related to ability to use a respirator; and
    - The physician states that the employee needs to be re-evaluated.

45A – Respirator Selection

Hazard	Respirator *
Oxygen Deficiency	Self-contained breathing apparatus. Hose mask with blower. Combination airline respirator with auxiliary self-contained air supply or an air-storage receiver with alarm.
Gas & Vapor (Contaminants immediately dangerous to life and health)	Self-contained breathing apparatus. Hose mask with blower. Air purifying full-face piece respirator with chemical canister (gas mask). Self rescue mouthpiece respirator (for escape only). Combination airline respirator with auxiliary self-contained air supply or an air-storage receiver with alarm.
Gas & Vapor (Contaminants NOT immediately dangerous to life and health)	Airline respirator. Hose mask without blower. Air purifying half-mask or mouthpiece respirator with chemical cartridge.
Particulate Contaminants (Contaminants immediately dangerous to life and health)	Self-contained breathing apparatus. Hose mask with blower. Air purifying full-face piece respirator with chemical canister (gas mask). Self rescue mouthpiece respirator (for escape only). Combination airline respirator with auxiliary self-contained air supply or an air-storage receiver with alarm.
Particulate Contaminants (Contaminants NOT immediately dangerous to life and health)	Air-purifying half-mask or mouthpiece respirators with filter pad or cartridge. Airline respirator. Airline abrasive- blasting respirator. Hose mask without blower.
Combination Gas, Vapor & Particulate (Contaminants immediately dangerous to life and health)	Self-contained breathing apparatus. Hose mask with blower. Air purifying full-face piece respirator with chemical canister (gas mask with filter). Self rescue mouthpiece respirator (for escape only). Combination airline respirator with auxiliary self-contained air supply or an air-storage receiver with alarm.
Combination Gas, Vapor & Particulate (Contaminants NOT immediately dangerous to life and health)	Airline respirator. Hose mask without blower. Air purifying half-mask or mouthpiece respirator with chemical cartridge and appropriate filter.
* For the purpose of this part, "immediately dangerous to life and death" is defined as a condition that either poses an immediate threat to life and health or an immediate threat of severe exposure to contaminants, such as radioactive materials, which are likely to have adverse delayed effects on health.	

Use of Respirators

- The correct respirator shall be specified for each job, the respirator type shall be specified in the site specific respiratory plan, by the site Safety Coordinator or designated individual, who supervises the respiratory protection program. This shall be specified through each and every Work Package.
- Each employee will be assigned their own respirator. Sharing respirators is not permitted.
- Dangerous Atmospheres. Written procedures and/or checklists for specific routine tasks/jobs shall be prepared covering safe use of respirators in dangerous atmospheres that might be encountered in normal operations or in emergencies:
    - In areas where the wearer, with failure of the respirator, could be overcome by a toxic or oxygen-deficient atmosphere, at least on additional person shall be present. Communications (visual, voice, or signal line) shall be maintained between both individuals present. Planning shall be such that one individual shall be unaffected by any likely incident and have the proper rescue equipment to be able to assist other(s) in case of an emergency; and
    - When a self-contained breathing apparatus (SCBA) or hose masks with blowers are used in atmospheres immediately dangerous to life or health (IDLH), standby personnel must be present with suitable rescue equipment.
- Respirators shall not be removed while inside a work area that requires respiratory protection. Employees shall be permitted to leave the work area to maintain, clean, change filters, replace parts, or to inspect their respirator if it is impeding their ability to work or if the respirator stops functioning as intended. Employees shall notify supervisor of when leaving the work area.
- To assure the continuing respirator effectiveness, appropriate surveillance shall be maintained of the work area conditions and the degree of employee exposure or stress. This shall include a fit check evaluation to assure proper protection. This shall be accomplished by the Site Safety Coordinator.
- Hair / Apparel. If hair growth or apparel interferes with a satisfactory fit, then they shall be altered or removed so as to eliminate interference and allow a satisfactory fit;
- Corrective Vision. If an employee wears corrective glasses or goggles or other personal protective equipment. A check shall be made to ensure that such equipment when worn does not interfere with the seal of the face piece to the face of the user. If the employees wear other safety equipment with their respirators, the employee must pass an appropriate fit test while wearing the equipment to determine a correct seal.
- Corrective vision requirements (Full-Face Respirators). Full-Face respirators having provisions for optical inserts shall be reviewed. These inserts when used shall be used according to the manufacturer's specification. The face piece and lenses shall be fitted by qualified individuals to provide good vision, comfort and a satisfactory face seal.
- Conventional eye glasses shall not be used with full-face respirators. A proper seal cannot be established if the temple bars of eyeglasses extend through the sealing edge of the full face piece.
- Contact lenses shall not be used with full-face respirators. Wearing contact lenses in contaminated atmospheres with a respirator shall not be allowed.
- Identification of chemical cartridges is by means of its label. The secondary means is by color code. All cartridges purchased or used shall be properly labeled and/or color coded in accordance with 29 CFR 1910.134 before they are placed into service. The labels and colors shall be properly maintained at all times until disposal.

- Color coding. Each cartridge is painted a distinctive color or combination of colors indicated in Table 1-1 below. All colors used are such that they are clearly identifiable by the user and clearly distinguishable from one another.

Table 46 B – Respirator Color Coding

RIC ANT(S)	COLOR(S) ASSIGNED
	WHITE
drocyanic acid gas	WHITE with a 1/2 inch GREEN stripe completely around the canister near the bottom
lorine gas	WHITE with a 1/2 inch YELLOW stripe completely around the canister near the bottom
ors	BLACK
as	GREEN
d gases and ammonia gas	GREEN with 1/2 inch WHITE stripe completely around the canister near the bottom
noxide	BLUE
nd organic vapors	YELLOW
c acid gas and vapor	YELLOW with 1/2 inch BLUE strip completely around the canister near the bottom
organic vapors, and ases	BROWN
materials, excepting noble gases	PURPLE (Magenta)
(dusts, fumes, mists, okes) in combination pors	Canister color for contaminant as designated above, with 1/2 inch GRAY stripe completely around the canister near the top with any of the
ove atmospheric ts	RED with 1/2 inch GRAY stripe completely around the canister near the top

NOTE: GRAY is not assigned as the main color for a canister designed to remove acids or vapors.

NOTE: ORANGE is used as a complete body or stripe color to represent gases not included in this table. The user shall need to refer to the canister label to determine the degree of protection the canister shall afford.

Identification of Particulate Filters.

- The 42 CFR Part 84 standards create three new series of particulate filters (“disposable”) designated by NIOSH as N, R, and P. The N series is tested against sodium chloride (NaCl) and is limited to use in atmospheres containing non-oil based particulates. Both the R and P series are tested against dioctyl phthalate (DOP) and are intended for filtering any solid or oil-based liquid particulates.

Table 46 C – Particulate Filter Designation

FILTER SERIES	FILTER TYPE DESIGNATION	MINIMUM EEFICENCY
Non-oil	N95	95%
	N99	99%
	N100	99.97%
oil-Resistant	R95	95%
	R99	99%
	R100	99.97%
oil-Proof	P95	95%
	P99	99%
	P100	99.97%

Air Quality

- Compressed air, compressed oxygen, liquid air and liquid oxygen used for respiration shall be of high quality;
- Oxygen shall meet the requirements of the United States Pharmacopoeia for medical or breathing oxygen;
- Cylinders of purchased breathing air shall meet at least the requirements of the specification for Type 1 – Grade D breathing air as described in Compressed Gas Association Commodity Specifications G-7.1-1989;
- Cylinders of purchased breathing air should have certificate of analysis from the supplier that the breathing air meets the requirements of Type 1 – Grade D air;
- Compressed oxygen shall not be used;
- Oxygen must never be used with airline respirators. Breathing air may be supplied to respirators from cylinders or air compressors;
- Cylinders shall be tested and maintained as prescribed in the shipping Container Specification

- Regulations of the Department of Transportation (49CFR PART 173 and 178);
- Oxygen concentrations greater than 23.5% are to be used only in equipment designed for oxygen service distribution;
- Moisture content in the cylinder shall not exceed a dew point of -50 degrees F at 1 atmosphere;
- Air-line couplings used shall be incompatible with outlets for other gas systems to prevent inadvertent servicing of air-line respirators with non-respirable gases or oxygen;
- Compressor shall be set up to minimize moisture content; and
- Breathing gas containers shall be properly marked and stored in accordance with NIOSH respirator certification standard 29 CFR 1910.101.

Cleaning and Disinfecting

- Respirators shall be regularly cleaned and disinfected in accordance with the manufacturers written instructions
- Respirators are required to be cleaned prior to each use, and thereafter as required;
- Respirators used in fit testing and training shall be cleaned and disinfected before and after each use.
- Respirator cleaning will take place prior to the shift ending.
- All cleaning supplies will be provided.
- The following procedure is recommended for cleaning and disinfecting respirators:
    - Remove any filters, cartridges or canisters;
    - Wash face piece and breathing tube in cleaner-disinfectant or detergent solution (see following paragraphs). Use a hand brush to facilitate removal of dirt;
    - Rinse completely in clean, warm water;
    - Air dry in a clean area;
    - Clean other respirator parts as recommended by manufacturer;
    - Inspect valves, head straps and other parts, replace with new parts if defective;
    - Insert new filters, cartridges or canisters, make sure seal is tight; and
    - Place in plastic bag or container for storage.
    - Cleaning shall be carried out in a non hazardous area

- Cleaner-disinfectant solutions shall be used to effectively clean respirators The respirator should be immersed in the solution, rinsed in clean, warm water and air-dried; and
- Strong cleaning and disinfecting agents can damage respirator parts. Temperatures above 185 degrees Fahrenheit and vigorous mechanical agitation should not be used. Solvents, which affect elastomer or rubber parts, should be used with caution.

Storage

- Respirators shall be stored in a convenient, clean and sanitary location;
- After inspection, cleaning and necessary repair, respirators shall be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture or damaging chemicals;
- Respirators placed at stations and work areas for emergency use should be stored in compartments built for the purpose, be quickly accessible at all times and be clearly marked;
- Respirators should not be stored in such places as lockers or toolboxes unless they are in carrying cases or cartons;
- Respirators should be packed or stored so that the face piece and exhalation valve will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position;
- Instructions for proper storage of emergency respirators, such as gas masks and self-contained breathing apparatus, are found in "use and care" instructions usually mounted inside the carrying case lid; and
- Emergency use respirators placed at stations and work areas for emergency use shall be immediately accessible at all times and shall be stored in compartments built for the purpose and in accordance with the manufacturer's recommendations. These compartments shall be clearly
- marked. Instructions for proper storage of emergency respirators, such as gas masks and SCBA, can be found in use and care instructions typically mounted inside the carrying case lid.

Routine Inspections

- All respirators shall be inspected routinely before and after each use. The manufacturer's inspection criteria shall be used as the basis for the inspection.
- Emergency escape respirators shall be inspected routinely before and after each use. A respirator that is not routinely used but is kept ready for emergency use shall be inspected after each use and at least monthly to assure that it is in working condition. Emergency escape only respirators shall also be inspected before being carried into the work area. The respirator manufacturer's inspection criteria shall be used as the basis for the inspections. A record shall be kept of inspection dates and findings for respirators maintained for emergency use.
- Self-contained breathing apparatus shall be inspected monthly. Air and oxygen cylinders shall be fully charged according to the manufacturer's instructions. It shall be determined that the regulator and warning devices function properly.
- Respirator inspection shall include a check of the tightness of connections and the condition of the face piece, headband, valves, connecting tube and canisters;
- Rubber or elastomer parts shall be inspected for pliability and signs of deterioration. Stretching and manipulating rubber of elastomer parts with a massaging action will keep them pliable and flexible and prevent them from taking a set during storage;
- Random inspections shall be conducted to assure that respirators are properly selected, used, cleaned and maintained. The respirator manufacturer's inspection criteria shall be used as the basis for inspections. Each jobsite will identify and document the employees who will perform random inspections; and
- Replacement or repair. Only the Site Safety Coordinator or designated individual, with NIOSH approved parts designed for the respirator, shall do replacement or repairs. No attempt shall be

made to replace components or make adjustments or repairs beyond the manufacturer's recommendations. Reducing or admission valves or regulators shall be returned to the manufacturer or to a trained technician for adjustment or repair. Respirators that have failed inspection will be taken out of service.

43.4 Training

General

- For safe use of any respirator, it is essential that the user be properly instructed in his/her selection, use and maintenance and use.
- Training shall be provided to each affected employee:
    - Before the employee is first assigned duties that require respiratory protection and at a minimum, annually thereafter;
    - Before there is a change in assigned duties;
    - Whenever there is a change in operations that present a hazard for which an employee as not previously been trained;
    - Whenever there is a reason to believe that there are deviations from established respiratory procedures required by this instruction or inadequacies in the employee's knowledge or use of these procedures; and
    - The training shall establish employee proficiency in the duties required by this instruction and shall introduce new or revised procedures, as necessary, for compliance with this instruction or when future revisions occur.

- Training topics shall include, as a minimum:
    - Respiratory Protection Program;
    - The OSHA Respiratory Protection standard;
    - Respiratory hazards encountered within the scope of work and their health effects; whether acute, chronic or both, and an honest appraisal of what may happen if the respirator is not used;
    - Need for respiratory protection and the consequences of improper fit, use, or maintenance;
    - Proper selection and use of respirators;
    - Inspection and seal checking of respirators;
    - Limitations and capabilities of respirators;
    - Respirator donning and user seal (fit) checks;
    - Emergency use procedures; Classroom and field training to recognize and cope with emergencies. This will include situations where the respirator malfunctions;
    - Maintenance and storage procedures;
    - Medical signs and symptoms limiting the effective use of respirators;

- Explanation of why more control that is positive is not immediately feasible. This shall include recognition that every reasonable effort is being made to reduce or eliminate the need for respirators; and
- Fit Evaluation: the wearer shall be trained how to check the face piece's fit each time they put on the respirator by conducting a positive/negative pressure seal check as specified in appendix A of the respiratory protection standard.
-

43.5 Recordkeeping and Retention

The following records shall be kept: and retained:

- Medical Evaluation Questionnaire result(s); (Hipa requirement employee files)
- Fit Test Records; (employee files)
- Air Sampling Worksheets for each sample; (Project files)
- • Chain of Custody for each sample; (Project files)
- Laboratory sample analysis for each sample; (Project Files)
- Calculations of exposure; (Project Files)
- Employee exposure notification records; (Project Files)
- Training records. (employee files)

44 Rigging

44.1 Purpose

The purpose of this program is to implement safe working procedures for using and inspecting rigging systems. This program will encompass not only company employees, but subcontractor requirements as well.

Applicable Regulations

OSHA 29 CFR 1910.180

OSHA 29 CFR 1926.550

OSHA 29 CFR 1926.251

44.2 Responsibilities

Project Management shall:

- Ensure that all rigging related to crane work meet the requirements of the this program;
- Ensure all riggers are qualified for the rigging tasks they are assigned to;
- Purchase crane hardware and rigging specific to corporate specifications or approval; Manufacturer's

Requirements:

- All rigging and rigging accessories shall be used per the manufacturer's guidelines;
- All rigging inspections shall be conducted per the manufacturer guidelines;
- All rigging must be approved by a qualified rigging manufacturer, proof tested and labeled appropriately before use;

Subcontractor Requirements:

- Subcontractors shall comply with all DBJV policy and all applicable rigging standards:

44.3 General Requirements

General

- Knowledge of the equipment and materials with which we work is one of the most important factors in accident prevention. Each piece of equipment and material has been designed and developed to serve a specific purpose and knowledge of what it can and cannot do, not only improves efficiency, but also eliminates hazards;
- It is the responsibility of management and supervision to ensure that the persons who prepare, use and work with or around equipment are well trained in the safe work procedures to prevent rigging related accidents;
- Rigging inspections shall be conducted by a competent person trained to inspect rigging and rigging accessories;
- Rigging inspections shall be conducted prior to use on each shift and as necessary during its use as has been deemed by the competent person for any overhead lifting rigging materials based on:
    - Frequency of use
    - Severity of service conditions
    - Nature of lifts being made, and
    - Experience gained on the service life of the slings used in similar circumstances;

Rigging must be inspected prior to each use by the Contractor's Designated Competent Person. Recording of this inspection will be documented quarterly using the form in Appendix C-27 and submitted to the DBJV Safety Department within 7 days of the last day of each quarter.

- Any rigging or rigging accessory that has an identified defect per the manufacturer's guidelines or ANSI shall be taken out of service and either destroyed or properly tagged out. No defective rigging per the manufacturer's guidelines or ANSI shall be used and removed from service immediately;
- "Out of Service" inspection criteria shall be conducted following the manufacturer's guidelines as a minimum. While a manufacturer's guidelines may allow a certain percentage of defect, it is incumbent on the competent person to make the final decision of rejecting a defect a manufacturer guidelines may allow;
- Never commence with a rigging or hoisting operation when any doubt exists as to the safety of the personnel affected by the lift;
- When weather conditions are such that the safety of the crew is affected, all rigging and hoisting must stop immediately. Refer to the equipment manufacturers manual for guidance on wind restrictions

- All rigging operations must be planned and supervised by competent personnel to ensure that the best methods and most suitable equipment are used;
- The supervisor is responsible for:
    - Proper rigging of the load;
    - Supervision of rigging crew;
    - Assuring rigging equipment meets the load criteria for the job and is in safe condition;
    - Ensuring correct assembly of rigging material or equipment as required during the operation, such as the correct installation of lifting bolts, etc.; and
    - Safety of the rigging crew and other personnel as they are affected by the rigging operation.
- Rigging equipment shall not be loaded beyond its recommended safe working load and load identification shall be attached to the rigging
- Rigging equipment not in use shall be removed from the immediate work area so as not to present a hazard to employees.
- Tag lines shall be used unless their use creates an unsafe condition.
- Hooks on overhaul ball assemblies, lower load blocks, or other attachment assemblies shall b of a type that can be closed and locked, eliminating the hook throat opening. Alternatively, an alloy anchor type shackle with a bolt, ,nut and retaining pin may be used
- All employees shall be kept clear of loads about to be lifted and of suspended loads. This is referred to as the fall zone under the new crane standard
- All rigging equipment shall have a tag or label that is legible. Any rigging equipment that is missing the tag or the information cannot be read shall be removed from service for repair or to be destroyed and shall be tagged accordingly.

44.4 Rigging Training Program

Riggers Training Program Mobile Crane

- All rigging used with cranes shall be conducted by the appropriate level of rigger;
    - Class 1 Rigger
    - Class 2 Rigger
    - Master Rigger
- All crane rigging training shall be conducted by the NCCCO or equivalent; Riggers Training Program Non-Crane
- All supervisors that supervise rigging of materials are required to take a rigging course
- All employees that utilize rigging equipment (not just mobile crane operations) are required to attend an approved rigging course before they can rig loads;
- Supervision must ensure that the persons who direct, rig and handle loads have received training in as a minimum;

The principles of rigging operation

- Are able to establish weights and proper rigging gear suitable for the loads to be lifted
- Are capable of directing the movement of the crane and load to ensure the safety of all personnel;
- Can calculate applied loads, sling angles, center of gravity, center of loads and other critical factors needed to make the lift safely;

Rigging Equipment

- All rigging and accessories shall be tagged or identified with the Working Load Limit (WLL) and other required information as required per ANSI;
- Manufacturing “In House” rigging gear should be avoided as most every rigging situation has approved rigging ready for purchase;
- When using “In House” rigging gear cannot be avoided, it must be proof tested by an approved rigging testing company such as I&I Sling, etc. and carry all required information;
- All hooks manufactured with a safety latch must have the safety latch in place and working properly;
- Chain falls, Come-Along and other similar equipment used for overhead lifting should not be side loaded per manufacturer guidelines;
- Use the proper rigging inspection tools during the inspection i.e. chain gauge, calipers etc;
- Destroy or properly tag out defective equipment; Shackles – Eyebolts
- Purchase and use of Crosby Brand Shackles is preferred
- All rigging hardware such as shackles and eyebolts must be made of alloy steel grade 80 or better;
- Never replace the shackle pin with a bolt and never allow a shackle to be pulled at any angle, because this would tremendously reduce its capacity;
- Eyebolts of the shoulder less type are to be used for vertical loads or pulls only. Even when equipped with shoulders, the safe working loads of eyebolts and ringbolts are substantially reduced with angular loading;
- To keep bending and stress to a minimum, the load should always be applied to the plane of the eye, never in the other direction. Never insert the point of a hook in an eyebolt, always use a shackle.

Turnbuckles

- Turnbuckles can be equipped with eye, hook, jaw or stub end fittings. Each are rated equally with the exception of the hook type that has a reduced rating;
- All hook types must have a safety latch installed. Turnbuckles, as with all rigging appliances, should be inspected frequently and replaced immediately if defective.

Wire Rope Slings

- Use only wire rope slings made with flemished eyes and steel swages
- Wire rope slings should be tagged with all appropriate information
- All slings, chokers and other rigging equipment must be given thorough periodic inspections, as well as daily inspections, for signs of wear and abrasion, broken wires, worn or cracked fittings, loose sizing and splices, kinking, crushing, flattening and corrosion;
- Special care should be taken when inspecting areas around thimbles and fittings, since these areas are the most likely to become damaged;
- Loops, thimbles and softeners must be used to prevent the sling from being sharply bent or cut;
- Never allow wire rope to lie on the ground for any length of time;
- Avoid dragging rope slings from beneath loads;
- Never use a wire rope sling that the D to d ratio is less than 1 to 1. D to d ratio's should be kept to 1 to 8 or more;
- Keep all rope away from flame cutting and electric welding operations;
- Avoid contact with solvents and chemicals;
- Never use slings that are knotted or kinked;
- Never wrap a wire rope completely around a hook, the sharp radius will damage the sling;
- Avoid, if possible, bending the eye section or wire rope slings around corners. The bend will weaken the splice
- No bending should be attempted near or on any attached fitting;
- When using multi-legged slings to lift loads, any two of the slings must be capable of supporting the total load.

Nylon/Synthetic Slings Program

- Nylon/synthetic slings are not to be used for general rigging. They are to be used only for those lifts that require special handling, such as tubular or angle booms, piping, etc.
- While nylon/synthetic slings are easy to use, they have some definite disadvantages that can lead to serious problems, such as, subject to deterioration from weather. Nylon/synthetic slings are harder to inspect due to the external cover that is on many of the slings. The cover gets worn and torn but too often the sling itself is not inspected and can end up with slings that have internal damage;
- Nylon/synthetic slings cannot be used to handle objects with sharp corners as they tend to cut the slings. Since the majority of the objects we rig have sharp corners we must not use nylon/synthetic slings;
- Another important consideration is the cost. The nylon/synthetic sling cost approximately 70%
- more than a compatible wire rope sling;
- All nylon/synthetic slings must have indenture thread or indicator system when damaged;
- All nylon/synthetic slings must be identified with their maximum capacity rating;
- Loops, thimbles and softeners must be used to prevent the sling from being sharply bent or cut;
- Never allow nylon/synthetic sling to lie on the ground for any length of time;
- Avoid dragging nylon/synthetic slings from beneath loads;
- Keep all nylon/synthetic away from flame cutting and electric welding operations;

- Avoid contact with solvents and chemicals;
- Never use slings that are knotted or kinked;
- Never allow nylon/synthetic slings to be in prolonged periods of sunlight (as Ultraviolet light adversely effects the slings);

Alloy Steel Chain

- Only alloy steel chain, grade 80 or better shall be used for rigging or overhead lifting;
- Chain shall be inspected with an appropriate chain gauge to determine defects that are out of service;
- Any repairs or changes to the original chain sling must be proof tested and re-tagged;

45 Sanitation and Welfare

45.1 Purpose

This program establishes requirements for job site sanitation. We establish this program as part of our safety and healthy working environment.

Applicable Regulations

OSHA 29 CFR 1926.51

45.2 Responsibilities

Project Management shall:

- Provide clean drinking water at all work locations;
- Provide toilets at the worksite;
- Provide washing facilities or an acceptable alternative to employees;
- Providing changing rooms and employee clothing storage facilities when work tasks require it (i.e.
- Lead work); and
- Take necessary measures to control vermin on the worksite.

45.3 Procedural Overview

Drinking Water.

- Clean drinking water shall be available at all times;
- Containers used to dispense drinking water shall be cleaned daily using soap and water, clearly marked, and equipped with a tap and tight fitting lid;
- Water shall not be dipped and/or scooped from containers;
- Use of a drinking cup by more than one person is not acceptable;
- A sanitary container for unused cups and a trash can for used cups shall be provided;
- Water containers and outlets that are not suitable for drinking shall be clearly marked; and
- Non-potable water shall be labeled. Toilets

- • Toilets shall be available at the worksite. This does not apply to mobile crews that have transportation available to nearby toilet facilities;
- Separate toilets should be considered for females when the project conditions justify this;
- Toilets shall be serviced and cleaned as often as necessary to maintain sanitary conditions;
- Toilets in poor repair shall be removed or repaired as soon as possible; and
- The minimum amount of toilets that shall be provided at each jobsite will be as follows:
-

Number of Employees	Minimum Facilities
Less than 20	1 toilet seat
20 or more	1 toilet seat and 1 urinal for each 40 workers
200 or more	1 toilet seat and 1 urinal for each 50 workers

Washing Facilities

- Washing facilities shall be provided near the worksite. Cleaning agents and towels or similar products shall be provided. Hand wipers are an alternative that can be considered.

Change Rooms

- Change rooms complete with storage for street clothes and separate storage for protective clothing shall be provided when employees must wear protective clothing to handle toxic materials (see Lead Program).

Vermin Control

- Enclosed workplaces, buildings, storage trailers, etc., shall be constructed, maintained, cleaned and organized to prevent the entrance and harborage of rats, mice, insects and other vermin. Extermination measures shall be used when their presence is detected.

Eating and Drinking

- Eating and drinking shall not be allowed in areas exposed to toxic materials. Insect Control
- Establish operational controls to protect animal life and prevent vermin infestation.

- Reduce areas of standing water to prevent mosquitoes breeding. Where standing water cannot be removed treat with larvicide's as per the manufacturer's instructions. If these controls are ineffective an industrial style pesticide will be used as per EPA guidelines. Insect repellant containing DEET will be provided for employees.
- Minimize mosquito breeding grounds to prevent nuisance and risk of West Nile Infection.
- Good housekeeping is essential in the prevention of vermin infestation. Construction and office waste will be regularly collected for disposal. Bags of putrescible waste shall not be left on the ground but placed in sealed dumpsters/bins. Make sure wheelbarrows, buckets, and other containers are turned upside down when not being used so they do not collect standing water.
- Provide training and communicate EMS to personnel, sub-contractors and vendors.

46 Scaffolding

46.1 Purpose

The purpose of this program is to establish guidelines for working on or around scaffolding. This program will inform our employees not only about the hazards of working with scaffolding, it will also inform them about and not limited to proper terminology, different types of scaffolds, and tagging systems.

The authorized "Competent Person" for the Subcontractor in the area of Scaffolds (erection, use and dismantling) must verify that all Scaffolds in our use, rented and owned, have been inspected on a daily basis meeting all local, state and federal regulations for their safe use.

Frequency of submission of the form to the DBJV Safety Department shall be weekly (See Appendix C-26).

Applicable Regulations

OSHA 29 CFR 1926.450 Subpart L

46.2 Responsibilities

Project Management shall:

- Ensure that there is a competent person on site at all times when scaffolding is being used;
- Ensure all project Management engaged in scaffold work are trained in the proper use of
- scaffolding;
- Identify a qualified person as the competent person for the erection and use of scaffolding, this
- person's knowledge of scaffolding will be consistent with the specifications as stated in this program;
- Ensure that subcontractors have identified a competent person whose knowledge of scaffolding is
- consistent with the requirements stated in this program.

Subcontractors shall:

- Identify their scaffolding competent person prior to the erection of any scaffolding system;

- Train their employees in the requirements identified in this program. Competent Person shall:
- Supervise the erection and use of scaffolding systems on site;
- Train employees in the requirements identified in this program.

46.3 General Requirements

Load Capacity:

- All scaffolds must be capable of supporting at least four times the maximum intended load; and
- The maximum intended load is the total load of all persons, equipment, tools, materials, transmitted loads, and other anticipated loads to be applied to a scaffold or scaffold component at any one time.

Lumber Standards:

- All wooden load-carrying components of scaffold framing must be a minimum of 1,500 fiber construction grade lumber;
- All dimensions are nominal sizes as provided in the American Lumber Standards; and
- When rough sizes are noted, only rough or undressed lumber of the size specified will satisfy minimum requirements.

Planking

- All planking must be 2 x 10 inch scaffold grad or equivalent, as recognized by approved grading rules for species of wood used;
- Laminated planking that provides the equivalent strength of scaffold grade planking is also suitable;
- The maximum permissible spans for 2 x 10 inch or wider planks of full thickness undressed lumber is:
    - 10 feet with a working load of 25 psf.;
    - 8 feet with a working load of 50 psf.; and
    - 6 feet with a working load of 75 psf.
- The maximum permissible spans for 2 x 10 inch or wider planks of nominal thickness lumber (not recommended for heavy use) is:
    - 8 feet with a working load of 25 psf.; and
    - 6 feet with a working load of 50 psf.
- The maximum permissible span for 1 ¼ x 9 inch or wider plank of full thickness lumber must be four (4) feet with medium duty loading of 50 psf.;

- All planking must overlap by a minimum of 12 inches, or be secured from movement;
- Scaffold planks must extend over their end supports at least six (6) inches but no more than 12 inches (unless cleated to prevent slipping).; and
- All working levels on scaffolds shall be fully planked. Poles:
- Poles, legs, or uprights of scaffolds must be set plumb and securely and rigidly braced to prevent swaying and displacement.

Ropes Used for Suspension:

- Wire, synthetic, or fiber rope used for scaffold suspension must support at least six (6) times the rated load.

Guardrails and toe boards:

- Guardrails and toe boards must be installed on all open sides and ends of platforms more than six (6) feet above the ground or floor, except needle beam scaffolds and float scaffolds;
- Guardrails must be 2 x 4 inches or equivalent, 42 inches high with a 3” tolerance, with a mid-rail.

Supports must be at intervals not to exceed 8 feet; and

- Toe boards must be at least 1 x 4 inch lumber or equivalent. Safety Practices:
- Scaffolds must be securely anchored and be capable of carrying the maximum intended load without settling or displacement;
- Unstable objects, such as barrels, boxes, loose brick, or concrete blocks, may not be used to support scaffolds or planks;
- The use of shore or lean-to scaffolding is prohibited;
- No scaffold may be erected, moved, dismantled, or altered except under the supervision of competent persons;
- Any scaffold including accessories, such as braces, brackets, trusses, screw legs, ladders, etc., that has been damaged or weakened in any way, must be immediately repaired or replaced;
- An access ladder or equivalent safe access to the scaffold must be provided;
- Preferred methods to a ladder access are as follows:
    - Scaffold stair contained within the scaffold
    - Scaffold Ladder / end frame access ladder

Note: Fall protection site specific requirements to be reviewed and determined based on 12 ft or above ladder fall protection requirements

- Climbing the end frames is prohibited unless their design incorporates an approved ladder and above fall protection requirements have been determined
- Neither the diagonal bracing nor scaffold rungs that are not uniformly spaced qualify as “equivalent safe access”
- Scaffolds shall not be overloaded. Tools and materials will be brought up as needed and excess materials and scrap removed as soon as possible;
- When employees must work underneath a scaffold, an 18-gauge screen, ½-inch wire mesh or equivalent protection must be placed between the toe-board and the guardrail;
- Scaffold tagging and inspection procedures must be followed at all times;
- Workers who use and construct scaffolding will be trained for the following:
    - Types of scaffolding hazards: electrical, falling, falling objects;
    - Correct procedures for erecting and maintaining scaffolding;
    - Maximum intended load and intended use of the scaffold; and
    - Requirements of OSHA Standard 1926.450 – Subpart L. Tubular Welded Frame Scaffolds
- Metal tubular frame scaffolds, including accessories such as braces, brackets, trusses, screw legs, ladders, etc. must be designed, constructed, and erected to safely support four times the maximum load;
- Bracing must be cross bracing or diagonal bracing, or both to secure vertical members laterally;
- Cross bracing must square and align vertical member to keep scaffolding plumb at all times;
- All bracing connections must be secure;
- Legs must be set on adjustable bases or plain bases placed on mud sills or other foundations adequate to support the maximum load;
- Frames will be placed one on top of another using coupling or stacking pins for vertical alignment;
- Panels will be locked together vertically by pins or other equivalent suitable means to prevent uplifting;
- Scaffolding will be secured to a structure at intervals no greater than 30 feet horizontally or 26 feet vertically;
- Drawings and specifications for all frame scaffolds over 125 feet above the base plates must be designed by a registered professional engineer;
- Upon receipt of shipment of tubular scaffolds, always make a complete, thorough inspection of all components;
- Do not assume the scaffold is complete, in proper working condition or will support all designed loads; and
- Make a good inspection to ensure the safety of your crew.

46.4 Manually Propelled Ladder Stands and Scaffolds

Design:

- The design and construction of mobile work platforms (ladder stands) and rolling (mobile) scaffolds

(towers) must conform to the following:

- Work platforms and scaffolds, including all parts and accessories, must be capable of carrying the design load under varying circumstances depending upon the conditions of use;
- The designed working load of ladder stands must be calculated on the basis of one or more 200-pound persons together with 50 pounds of equipment per person;
- Light duty scaffolds must be designed and constructed to carry a working load of 25 pounds per square foot;
- Medium duty scaffolds must be designed and constructed to carry a working load of 50 pounds per square foot;
- Heavy duty scaffolds must be designed and constructed to carry a working load of 75 pounds per square foot;
- All ladder stands and scaffolds must be capable of supporting at least four times the designed working load; and
- The height of rolling scaffolds shall not exceed four (4) times the minimum base dimension.

- Designs must produce a mobile ladder stand or scaffold that will safely sustain the specified loads;
- The material selected must be strong enough to meet test requirements and must be protected against corrosion and deterioration;
- The material selected must be strong enough to meet test requirements and must be protected against corrosion and deterioration;
- The materials used must meet manufacturer's standards, including strength, dimension and weight specifications; and they must safely support the working load;
- Nails, bolts, and other fasteners used in the construction of ladders, scaffolds and towers must be of adequate size and in sufficient number to develop the designed strength of the unit;
- Nails must be driven full length;
- Steps must be fabricated from slip-resistant treads; and
- Leveling of elevated work platforms, screw jacks or other suitable means for adjusting the height must be provided in the base section of each unit.

Safety Practices:

- No one shall ride rolling scaffolds when they are being moved;
- Rolling scaffolds shall only be used on level surfaces;
- Caster brakes must be locked when the scaffold is in use or not in motion;
- Loose material and equipment will be secured or removed before moving scaffold;
- When moving scaffolds, make certain the route is clear, watch for holes and overhead obstructions, have enough assistance to hand;
- Any exposed surface must be free of sharp edges, burrs, or other safety hazards.

46.5 Suspended Scaffolds (Swing Stages)

Design:

- Suspended scaffolds shall not be less than 20 inches nor more than 36 inches wide;
- Wire ropes used to suspend scaffolds must have a safety factor of six (6) times the maximum intended load; and
- Non-conducting insulated material shall be placed over scaffold suspension cables if there is any change of contact with an electrical arc.

Safety Practices:

- Employees working from a two-point suspended scaffold must wear a full body harness and be tied off to an independent lifeline;
- Multi-stage scaffolds require additional safety suspension lines and full protection devices;
- Ropes shall be protected from burning or welding operations;
- Suspended scaffolds shall not be less than 20 inches nor more than 36 inches wide;
- Wire ropes used to suspend scaffolds must have a safety factor of six (6) times the maximum intended load; and
- Non-conducting insulating material shall be placed over scaffold suspension cables if there is any change of contact with an electrical arc.

46.6 Scaffold Tag System

General:

- A scaffold tag system will be implemented to ensure that scaffolds are erected and used safely;
- All scaffolds will be inspected before use to prevent exposing employees to unsafe conditions;
- The job superintendent or designated competent person will sign off on all scaffolds, will be responsible for placing tags on scaffolding and will be accountable for ensuring safe conditions are provided;
- Scaffolding will be tagged appropriately during construction, use and dismantling;
- Tags will be located at each access ladder and kept current;
- Jobs shall decide how often inspections shall take place, as deemed necessary by the competent person.

Scaffolding Tag Identification Code:

- The Scaffold tag System color code will be used to determine the status of a scaffold;
- Red Tag – DO NOT USE
- Prohibits use of scaffolding during installation, alteration or dismantling except by the erection crew;

- Yellow Tag – NOT ERECTED TO CODE
- Indicates restriction or special use conditions of scaffold, i.e. a requirement for fall protection; and

- Green Tag – APPROVED FOR USE
- Indicates scaffold is erected to all safety standards and company policies and is ready for use.

46.7 Training

General:

- Competent persons will be trained by manufacturer or by manufacturer materials;
- Employees will be trained by the competent person or other qualified persons such as manufacturer reps;

Scaffold Erector/Users:

- Will be trained by a competent person in the following areas:
    - Nature of fall hazards in the work area;
    - Correct procedures for erecting, maintaining and disassembling fall protection to be used;
    - Proper construction, use, placement, and care in handling; and
    - Maximum intended load-carrying capacities.
- Retraining shall be provided as necessary so that the employee maintains a thorough understanding on compliance with these subjects.

47 Silica

47.1 Purpose

The purpose of this program is to establish procedures to protect employees from the health hazards associated with exposure to airborne crystalline silica generated by various construction activities. Due to the amount of work we do with concrete and masonry on almost any project, our workers have the potential for silica exposures. Through abrasive blasting, chipping, hammering, sawing, grinding or demolition of concrete, silica can be released into the air, breathed by employees and potentially cause silicosis.

Silicosis is a lung disease marked by hardening of lung tissue and symptoms such as shortness of breath, possible fever, fatigue and eventual respiratory failure. Silicosis also renders a person more susceptible to diseases of the lungs, such as tuberculosis. Where there is concrete, there is a potential silica exposure so it is essential to monitor our work activities and take the necessary corrective actions to protect our employees.

Applicable Regulations

OSHA 29 CFR 1926, 20, 21, 55, 57, 59, 103

47.2 Responsibilities

Safety Department shall:

- Designate a Corporate Respiratory Program Administrator; and
- Evaluate the effectiveness and appropriateness of this program, and all Worksite Specific Respiratory Plans (WSRP) as required.

Project Management shall:

- Designate Jobsite Respiratory Program Administrator;

- Develop Worksite Specific Respiratory Plan for Silica as a means to providing management of silica related activities;
- Evaluate, and plan, for all work activities for silica exposures by means of Job hazard analysis;
- Institute engineering controls as a first line of protection to reduce silica exposures as per Job hazard analysis;
- Institute all administrative/work practice controls to reduce silica exposures when feasible and when engineering controls have been explored and ruled out;
- Institute the use of respirators to reduce exposures when the above mentioned controls fail to reduce silica exposure levels;
- Monitor and evaluate job hazard analysis and activities for compliance;
- Provide training when employees are exposed to silica hazards; and
- Provide necessary respiratory protection, as well as training in its proper use, when deemed necessary.

Employees shall:

- Follow all job hazard analysis that identify and detail engineering and administrative/work practice controls to reduce their exposure to crystalline silica;
- Wear respiratory protection to reduce their exposure to crystalline silica when deemed necessary by their supervisor;
- Participate in air monitoring program when required;
- Take part in any training required; and
- Not eat, drink, use tobacco products, or apply cosmetics in areas where there is dust containing crystalline silica.

47.3 Procedure

Exposure Assessment:

- Work tasks that must be monitored for crystalline silica exposure include but are not limited to:
    - Jack hammering and chipping;
    - Grinding concrete;
    - Tunneling;
    - Sandblasting;
    - Dry sweeping or blowing concrete debris, sand or rock dust;
    - Demolition of concrete/masonry structures;
    - Crushing, loading, dumping rock or concrete; and
    - Saw cutting concrete or rock. Air Sampling Frequency

- Baseline sampling shall commence at the beginning of each operation which is identified as a potential for silica exposure. Historical data from similar operations producing silica exposure can be used as baseline exposure monitoring when feasible, but must be evaluated according to activity, length of operation, conditions in which the samples were taken, etc;
- If the initial baseline results demonstrates employee exposure to be below the action level, then ;
- Personal and Area Air Sampling will take place thereafter at on least three consecutive measurements at least seven (7) days apart;
- Results will be dealt with as follows:
    - Where results demonstrate that the employee exposure is below the action level, monitoring need not be repeated;
    - Where results demonstrate that the employee exposure is above the action level, but below the permissible exposure limit, monitoring shall be repeated at least every 6 months. The monitoring shall continue until at least two consecutive measurements, taken at least 7 days apart, are below the action level, at which time the monitoring for that employee or operation may be discontinued; and
    - If the initial monitoring reveals that employee exposure is above the permissible exposure limit, the monitoring shall be repeated quarterly. The monitoring shall continue until at least two consecutive measurements, taken at least 7 days apart, are below the permissible exposure level, at which time the monitoring for that employee or operation may be discontinued.
- Whenever there has been a production, process, control or personnel change which may result in new or additional exposure to silica, or whenever AI has any reason to suspect a change which may result in new or additional exposures to silica, additional monitoring shall be conducted; and
- Air monitoring results and exposure assessment shall be supervised by the Corporate Respiratory Program Administrator.

Engineering Controls

- In operations where there is a potential for exposure to silica, engineering controls shall be used as the first line of defense;

- Engineering controls include, but are not limited to:
    - Use of dust collection systems;
    - Wetting down surfaces;
    - During saw cutting, use equipment that provides water to the blade;
    - During rock drilling, use water through the drill stem to reduce the amount of dust in the air;
    - During abrasive blasting use abrasives with a low silica or no silica content; and

- Use local exhaust ventilation to prevent dust from being released into the air.

Administrative Controls:

- Administrative controls will be used supplemental to engineering controls;
- Where engineering controls cannot be utilized, or are not effective to sufficiently reduce exposure to respirable silica, administrative controls will be used to reduce the time of exposure for employees;
- Administrative controls, include but are not limited to:
    - Worker Rotation;
    - No eating, drinking, smoking and/or applying cosmetics shall be allowed ; and
    - Where exposure limits are at or above the action level, personal protective equipment shall be given to each employee. Where personal protective equipment is provided, trash bins will be available at the exit to each area to allow for employees to discard such items to prevent contamination to other parts of the jobsite, and to the employees personal belongings; and
    - Signs and barricades will be placed allowing for only authorized employees may enter an area where operations are taking place that may create exposure to crystalline silica. The sign shall read:

WARNING HAZARD

SILICA WORK AREA

AUTHORIZED EMPLOYEES ONLY BEYOND THIS POINT

NO SMOKING, EATING OR DRINKING ALLOWED BEYOND THIS POINT

Respiratory Protection:

- Respiratory protection shall be used as the last line of defense in the protection against exposure to silica;
- Respiratory protection shall never be used as the sole means of limiting employee exposure;
- Respiratory protection shall be required at the beginning of each identified activity until air sampling results demonstrate that the exposure is below the Action Level; and
- Respirators will be selected based on the criteria identified in the Respiratory Protection section of this manual and according to the Worksite Specific Respiratory Plan for Silica.

Hygiene Controls

- Food and drink is not permitted to be present or consumed in the work area;
- Tobacco products are not permitted to be present or consumed in the work area; and
- A wash station will be available for employees to use so that they can wash up following work in designated Silica Work Area(s).

47.4 Training

Employees will be trained in the following:

- Hazards of silica exposure;
- The requirements of this program;
- Engineering and administrative/work practice controls, if any, that have been instituted to control silica exposures;
- Personal protective equipment specific to their work assignments; and
- The employees right of access to exposure monitoring and medical records. Frequency of training:
- Shall take place via job hazard analysis prior to each activity commencing. No employees are permitted to go to work without this training;
- Shall take place thereafter, as any change in any element of the original job hazard analysistakes place;
- Refresher training will take place at such times that the jobsite requires; and
- General training will be given to all employees, whether involved in Silica Work Area(s) or not by means of Toolbox Talk or an equal alternative.

47.5 Recordkeeping

Air Monitoring

- For each air monitoring experience, the following documents, at a minimum, will be kept:
    - Air Monitoring Worksheet;
    - Chain of Custody;
    - Laboratory Analysis; and
    - Detailed calculation results.
- Training records shall be kept either with each individual construction plan, or in the toolbox talk safety meeting file, whichever is relevant.
- All of the above kinds of records must be kept as per 29 CFR 1910.1020

48 Stairways and Access

48.1 Purpose

The purpose of this program is to establish rules regarding access areas, used in shops, plants, construction, alteration, repair and demolition areas. Although potentially hazardous, following these guidelines and safe work procedures will prevent accidents and help to provide a safer environment for our employees.

Applicable Regulations

OSHA 29 CFR 1926.1050

OSHA 29 CFR 1926.1051

OSHA 29 CFR 1926.1052

OSHA 29 CFR 1926.1053

OSHA 29 CFR 1926.1060

MSHA 30 CFR 56.11000

48.2 Responsibilities

Project Management shall

- Assign the task of constructing and maintaining access to work areas
- Ensure safe access provided to all areas employees are assigned work.

48.3 Procedures

Design, Construction and Maintenance

- Stairways that are used by employees during construction work must be designed, constructed and maintained according to the following OSHA requirements:
    - Stairways that will not be a permanent part of the structure on which construction work is being performed must have landings at every 12 feet or less of vertical rise;

- Each landing must measure at least 30 inches long by 22 inches wide;
- Stairs must be installed at an angle between 30 degrees and 50 degrees from horizontal;
- Riser height and tread depth must be uniform within each flight of stairs, including any foundation structure used as one or more treads of the stair. In any stairway system, variations in riser height or tread depth must not be more than ¼ inch;
- All parts of stairways must be free of hazardous objects, such as protruding nails; and
- Slippery conditions on stairways must be eliminated. Stair Rails and Handrails

- Stairways having four or more rises or rising more than 30 inches, whichever is less, be equipped with at least one handrail and one stair rail along each unprotected side or edge;
- A standard guardrail shall consist of top rail, mid-rail or equivalent protection and post, and shall have a vertical height within the range of 39 inches to 45 inches from the support surface of the top rail to the floor, platform, runway, or ramp. (The permissible tolerance on height dimensions is one inch);
- Design and construction specification will be as follows:
    - Stair rails must be at least 36 inches high, handrails shall be between 30 and 37 inches;
    - When the top edge of a stair rail also serves as a handrail, its height cannot be more than
    - 37 inches nor less than 37 inches;
    - For all such height provisions, you must measure from the support 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;
    - Stair rails must include mid-rails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members between the top rail and the stair steps; and
    - Mid-rails must be located halfway between the top edge of the stair rail and the stair steps. Screens or mesh must be extended from the top rail to the stair step and along the entire opening between top rail supports. Intermediate vertical members and other equivalent structural members must be not more than 19 inches apart.

- Handrails and the top stair rail must withstand a force of at least 200 pounds applied within two (2) inches of the top edge, in any downward or outward direction;
- Handrails that will not be a permanent part of a structure must have a minimum clearance of three (3) inches between the handrail and walls, stair rail and other objects;

Additional measures for safeguarding employees include:

- Surfacing handrails and stair rails to prevent injury from punctures or lacerations and from snagging clothes;
- Hand holds for grasping to avoid falling; Construction that does not create a projection hazard; and Guardrail protection of stair sides and landing.
- In wooden construction, the posts must be at least 2 x 4 inch nominal material spaced not to exceed six (6) feet, top rails must be smooth with rounded corners and not less than 2 x 4 inch nominal material;
- Single mid-rails may not be less than 2 x 4 inch nominal material and must be installed on the contact side of the guardrail;
- Where toe-boards are required, they shall be constructed of wood, concrete, metal or other suitable material;

- The top of toe-board shall not be less than 3½ inches above the platform, walkway, or other working level and the bottom clearance shall not exceed ¼ inch; and
- All guardrails, connections and anchorage, shall be designed for a live load of 200 pounds per linear foot applied either horizontally or vertically downward at the top rail.

48.4 Access Program

General

- A competent person will design all access into or onto the referenced access areas;
- The access plan will be reviewed and approved by the Job Superintendent or Project Manager prior to implementation (See Appendix C-18); and

Access Areas

- Caissons/cofferdams;
- Pipe Jacking Pits;
- Platforms – permanent or temporary ;
- Roof or Mezzanines;
- Cut and cover – prior to and during concrete work;
- Pits in buildings;
- Large manholes / catch basins;
- Barge access – to, from, and into; and
- Tunnels and shafts. Crossing Live Roadways
- When concrete or other temporary work zone barriers are erected for employee protection, employees may not climb on or over these barriers for any reason in live traffic;
- This policy applies to all roadwork where a physical barrier to keep workers and traffic separated is in place;
- When traffic control devices such as cones, barrels or other delineators are used, the traffic control plan must stipulate the access areas for workers to cross the roadway. During morning huddles and as necessary, employees must be told where and when they can cross the roadway. It is not acceptable to cross live traffic other than the areas designated for accessing;
- Working outside of any barrier or delineator during live traffic is never acceptable. When working in live traffic, all work shall be done behind the delineators.

48.5 Training

General

- Training will be conducted by a competent person; and
- Projects will provide training to employees who use ladders, stairways and access routes as necessary through means of Job hazard analysis, New Hire Orientation and toolbox talk meetings.

Topics:

- The components of this program;
- Recognition of hazards associated with ladders, stairways and access routes;
- Minimization of hazards associated with ladders, stairways and access routes; and
- Any of the following as applicable:
    - Nature of fall hazards in the work area;
    - The correct procedures for erecting, maintaining and disassembling fall protection systems to be used;
    - The proper construction, use, placement and care in handling of all stairways and ladders;
    - The maximum intended load-carrying capacities of ladders used.

49 Tools

49.1 Purpose

The purpose of this program is to establish safe work practices for the use of hand and power tools. Because we are reliant so heavily on this type of equipment and use it frequently, hand and power tools are the source of many injuries on our projects.

We must ensure all tools are used correctly, properly maintained and removed from service when no longer suitable for use. Above all, only qualified and trained personnel will be permitted to use these tools.

Applicable Regulations

OSHA 29 CFR 1926.300

49.2 Responsibilities

Project Management shall:

- Purchase all hand and power tools according to company program specific to brand and model;
- Ensure that all tools requiring guards are equipped as such before they are put into service on the job; and
- Develop a procedure for the distribution of abrasive wheels for cutoff and chop saws. Employees shall:
- Not remove any guard on a hand or power tool;
- Inspect hand and power tools prior to use to ensure safe operating condition; and
- Report any damaged or defective tools to their foremen.

49.3 General Requirements

- Maintain all hand and power tools and similar equipment in a safe condition;
- When power operated tools are designed to accommodate guards, they shall be equipped with such guards when in use. Should the guard obstruct the work it will not be removed;
- Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains or other reciprocating, rotating or moving parts of equipment shall be guarded if such parts are exposed to contact by employees or otherwise create a hazard;
- Impact tools, such as drift pins, wedges and chisels, shall be kept free of mushroomed head; and
- The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.

- It is the responsibility of contractors using tools and equipment to have equipment inspections completed by the end of each inspection period using quarterly color code. The color code will be as follows:

  January – March: White;

  April – June: Green;

  July – September: Red;

  October – December: Orange.

- The quarterly inspection shall be documented on the Electrical inspection verification form and submitted to the DBJV Safety Department within 7 days after the quarter ends. (Appendix C-23)

49.4 Power-Operated Hand Tools

- Electric power operated tools shall either be the approved double-insulated type or grounded;
- Do not use a power tool with broken or defective insulation on the cord, broken or defective plugs, or loose or broken switches;
- The use of electric cords for hoisting or lowering tools is not permitted; and
- If the tool is provided with a side-mounted handle, it must remain on the tool to prevent wrist injuries should the tool bind during operation.

49.5 Powder Actuated Tools

Loading

- Tools shall not be loaded until just prior to the intended firing time; and
- The tool shall be tested each day before loading to see that the safety devices are in proper working condition. The method of testing shall be in accordance with the manufacturer's recommended procedure.

Use

- Use the lowest velocity on the tool until penetration is found;
- Any tool found not in proper working order, or that develops a defect during use, will be immediately removed from service, tagged out and not used until properly repaired;
- Neither loaded nor empty tools are to be pointed at any employees;
- Keep hands clear of the open barrel end;
- Do not leave loaded tools unattended;

- Fasteners shall not be driven into very hand or brittle materials including, but not limited to, cast iron, glazed tile, surface-hardened steel, glass block, live rock, face brick, or hollow tile;
- Driving into materials easily penetrated shall be avoided unless such materials are backed by a substance that will prevent the pin or fastener from passing completely through and creating a flying missile hazard on the other side;
- No fastener shall be driven into a spalled area caused by an unsatisfactory fastening;
- Tools shall not be used in an explosive or flammable atmosphere; and
- All tools shall be used with the correct shield, guard, or attachment recommended by the manufacturer.

Charge Storage:

- Live loads/cartridges must be stored in an approved, locked storage cabinet to meet applicable OSHA regulations. Do not throw explosive charges into trash containers or leave them lying around. Return them to your supervisor.
- PPE:
- Personal protective equipment, including eye, ear, head, and hand protection is to be worn by all tool operators.
- Training:
- Only employees who have been trained in the operation of the particular tool in use shall be allowed to operate a powder-actuated tool. Users should possess a qualified operator's card that is issued by the manufacturer's representative

49.6 Air Powered Tools

Hoses

- Air hoses will be inspected prior to use looking for bends, kinks, or swelled areas. Hoses that are not in good condition shall be removed from service. DUCT TAPE IS NOT TO BE USED FOR REPAIRS;
- Hoses used under compressed air conditions must be a reinforced wire braided type. Hoses used for water service many be standard airline hose;
- Hoses will not be placed in access ways or across ladder passage. Where this is unavailable, lines should be blocked over, or at least flagged;
- Whip checks will be used on all airlines and tools to prevent against the hazards when uncoupling occurs. Whip checks shall be positioned on the hose rather than the fitting – if the hose should break, the fitting may stay connected while the hose will whip around; and
- All air hose clamps must be crimped into place. Do not use worn gear clamps to attach couplings and fittings to air hoses.

Use

- Air powered tools should be oiled via in-line air oil;
- Air powered tools and compressed air create certain health hazards where fine particles of dust, or chemicals are blown into the air. This air contamination should be eliminated by wetting agents, or exhaust ventilation;
- Loose clothing, which can get caught in the moving parts of equipment, should not be worn while working with rotary tools;
- Compressed air should not be used to clean off clothing. Air pressure against the skin can penetrate causing internal hemorrhaging and intense pain. Air that enters body openings can burst internal organs and lead to death;
- When air powered tools create hazards to others, warning signs or placards shall be posted detailing the type of hazard(s) and direction for protection; and
- Airlines must be bled before disconnecting an air tool.

PPE

- When silica or lead exposures are present when using air powered tools, use appropriate respiratory protection;
- Demolition operations may require steel-toed boots and/or metatarsal protection; and
- When performing any operation with an air powered tool that produces high vibration levels, carpal tunnel gloves should be used

49.7 Abrasive Tools

Bench Grinders

- Grinders shall be labeled with maximum operation R.P.M.;
- Adjustable work rests shall be provided and kept at a distance not to exceed 1/8-inch from the surface of the wheel;
- Objects that may kick back must be braced using a clamp or any device that securely holds objects prior to cutting;
- Face shields shall be worn while using a bench grinder. Hand-held Grinders:
- Guards shall remain in place at all times;
- Trigger locks must be removed from grinders or made inoperable by a qualified person (effective
- 2/27/98). A positive pressure switch shall be used after said date;
- Many grinders are supplied with handles designed to protect against wrist injuries, as well as support the tool. They shall not be removed, regardless if they interfere with the operation. A substitute tool should be considered;
- Arbor on wheel must be the exact same size as the arbor shaft on the grinder;
- Grinders shall be labeled with maximum R.P.M.;

- Only abrasive wheels, which are compatible with the rated RPM, will be used;
- A face shield must be used when using grinder plus safety glasses; and
- When grinders with blades 7’ or bigger are used, chaps will be required at the discretion of the
- Project Management.

Abrasive Blades/Wheels

- Only approved blades authorized through our purchasing department will be used;
- Abrasive blades shall be used only on designated materials;
- Only a qualified person shall mount blades per manufacturer’s instructions;
- Blades should be stored in a climate-controlled area (avoid freezing, extreme heat, or wet conditions);
- Use blades only on designated tool (i.e., do not use chop saw blades on a cut-off saw);
- Discard all abrasive blades with illegible labels;
- Inspect all blades prior to use;
- The arbor hole should match the arbor of the tool, use only manufactured arbor adapters;
- The RPM of the wheel shall equal or exceed the RPM of the tool;
- Blades will be removed from the tool whenever, the tool is transported by vehicle, the tool is being stored, and the condition of the blade is suspect;
- Allow newly mounted wheels to run at full RPM for at least 1-minute prior to use; and
- Using the side of the “cutting” blade as a grinder is strictly prohibited.

49.8 Chainsaws

Equipment

- When purchasing chain saws, always buy those with anti-kickback chains. Regular chains should be disposed of and replaced with anti-kickback chains. Anti-kickback chains are designed to skim the surface of the work in the event that the upper part of the chain comes into contact with the work. Older chains have a flat link between each of the raised cutters while newer chains have either a triple thick raker in front of each cutter or an extra raised section between cutters.
- All chainsaws shall be equipped with a momentary finger contact or constant pressure “on/off”
- control switch that will shut off power when the pressure is released;
- All saws must have spark-arresting mufflers; and
- Electric chain saws shall be approved, double insulated, or grounded. Inspection and Service
- Equipment will be inspected for defects and broken or worn chains. Any chain saw that is broken or defective must be taken out of service and repaired immediately or removed from the job;

- Chains shall be kept sharp, well lubricated and properly tensioned at all times. The chain needs sharpening when it must be pushed through to cut or when it throws sawdust rather than wood chips;
- Chain saws shall be inspected before each day's use and during each refueling. Saws that are not in safe operating condition will not be used; and
- • If electric chainsaws are used, disconnect the power source from the chain saw before making any adjustments or repairs.

Use

- Do not walk with a running chainsaw;
- Work "down" with the saw whenever possible;
- If electric chainsaws are used, never use the cord to hoist or lower the tool;
- Before refueling, saws must be cool to the point that spilled gas will not ignite
- Keep the air filter clean and use the correct mixture of fuel and oil;
- Fully charged 20lb. ABC fire extinguishers shall be kept at all refueling areas;
- Saws must be kept clean of excess oil to prevent slipping or fire hazards. Any spills that occur must be cleaned up immediately;
- Chain saws will be carried or moved with the engine in the off position;
- When starting a chain saw, place it on the ground, hold the handle with one leg and pull the starter with the other hand. Never start a saw in the air or on your leg;
- Running saws must be gripped with both hands; and
- Maintain a clear work area free of tripping hazards and obtain firm footing before commencing any work. Keep your weight balanced on both feet and do not over reach.

Personal Protective Equipment

- Employees using chain saws are exposed to flying debris, dust and noise. Kevlar fire resistant leg chaps, hard hats, safety glasses and face shields (mesh is acceptable), and gloves are required when working with chain saws. No loose or ragged clothing will be allowed. Additionally, hearing protection must be worn.

Training

- Always read and become familiar with the manufacturer's instructions before use; and
- Operators shall be trained in the safe operation and maintenance of chain saws, proper tree falling procedures and the use of personal protective equipment.

49.9 Cut-Off Saws

Inspection

- Ensure guard is installed and functioning as intended by the manufacturer;
- Handles are installed and functioning as intended by the manufacturer;
- Trigger releases freely when released;
- Muffler is installed;
- Ensure no bolts are missing and all bolts are tight and functioning as intended by the manufacturer;
- The pull cord handle is not broken or cracked;
- The RPM of the tool is clearly marked on the tool;
- The wheel flanges are clean and straight so the blade will spin true. The wheel flanges are recessed and are of the same diameter;
- The wheel flanges are at least one-fourth the size of the blade;
- The wheel arbor is the correct size for the blade. Never alter a wheel arbor to force a blade to fit the cut-off saw; and
- If there is a blade in the tool, remove the blade and follow blade inspection guidelines. Personal Protective Equipment
- Employees using cut-off saws will wear a hard hat mounted full-face shield in addition to safety glasses;
- Proper hearing protection;
- Proper protection from silica (see Silica Exposure Program);
- Kevlar fire resistant leg chaps; and
- Leather work gloves.

Abrasive Blade Storage

- Store blades on a level and firm surface;
- Do not subject the blades to heat, moisture, high humidity, rain or snow, freezing, or condensation;
- It is recommended that blades be stored in a controlled atmosphere such as the project office and that a blade distribution and inventory program be put in place;
- Never transport the cut-off saw with the blade mounted; and
- Remove blades after each use and return them to a proper storage area. Do not store the cut-off saw with the blade installed.

Abrasive Blade Inspection

- Do not use broken, cracked, warped, wet or otherwise damaged blades. Do not use blades if the label blotter is unreadable;
- Remove the blade from the cut-off saw for inspection. You can not properly inspect a blade while it is mounted; and
- Check the maximum operating speed for the blade as indicated on the label blotter. The blade's maximum rated RPM must be equal to or greater than the maximum RPM of the cut-off saw.

Diamond Cutting Wheels

- The manufacturer's instructions for use of diamond cutting wheels must be reviewed prior to installing the blade;
- Following the minimum guidelines established for abrasive blades above to supplement the manufacturer's recommendations;
- Diamond cutting wheels are intended for use when cutting concrete, masonry, architectural stones and granite, clay pipe and other materials recommended by the manufacturer;
- Do not use diamond cutting wheels to cut metal or any other materials not recommended by the manufacturer;
- Consider using water when cutter to eliminate silica exposure; and
- Check the maximum operating speed for the blade as indicated on the label blotter. The blade's maximum rated RPM must be equal to or greater than the maximum RPM of the cut-off saw.

Fueling

- Fuel the saw in a well-ventilated area, outdoors only;
- Always shut the engine off and allow it to cool before refueling. Relieve tank pressure by loosening the fuel cap slowly;
- Always use a funnel and avoid over filling the tank;
- Select bare ground for fueling and move at least 10 feet from the fueling spot before starting the engine; and
- Use the manufacturer's recommended fuel mix of oil and gasoline. Starting Instruction
- Do not drop start. Place the cut-off saw on level ground and have a firm grip on the handle to pull start the engine;
- Never attempt to start a saw that is in a cut, as it may rebound; and
- Position your body so that it is clear of the cutting attachment before pull starting. Adjust loose clothing to eliminate entanglement in the cutting attachment.

Cutting Operations

- Review and understand the hazard analysis prior to using the cut-off saw;
- Check that the wheel arbor matches the blade arbor;
- Check that the blade's maximum RPM is equal to or greater than the maximum saw RPM. Select a blade specifically designed for use for the type of material you are going to cut;
- Tighten the wheel flanges to secure the blade;
- Allow the blade to spin freely at operating speed for at least one minute prior to use;

- If you feel unusual vibration, stop the saw, determine the reason for the unusual condition, and correct the problem before using the saw again;
- Maintain balance and solid footing while cutting. Do not over reach or position yourself in any way that could cause you to fall or lose control of the saw, particularly if the saw was to “kick back”;
- Adjust the guard to throw sparks away from your body. Remove any flammable items prior to beginning the cut;
- Do not attempt to cut anything above your shoulder height;
- Let the tool do the work. Do not force the blade into the cut;
- Make sure the blade has stopped spinning before letting go of the handles;
- Carry the saw with the blade in the rear;
- Do not transport the cut-off saw with the blade attached. Do not grind with the side of the cutting wheel. Inspect the tool and the blade before each use; and
- When you are done with the cut-off saw, remove the blade and return the saw, blade and PPE to its designated storage area.

49.10 Chop Saws

General

- Use only wheels designed for the saw (RPM rating on blade must meet or exceed that of the saw)
- and compatible with the material being cut;
- Be sure to follow lock-out/tag-out procedures when changing wheels or performing any repairs; an
- Do not remove the wheel guard. Cutting Operations
- Make sure the tool is on a solid base and access to the tool is free of debris;
- Use a vice to clamp the work when necessary;
- Never start the tool with a person in-line with the wheel, this includes the operator;
- Do not cut masonry or wood with a chop saw, and only use correct blade for item being cut;
- Do not force the tool through the work; and
- The saw should return to an open position after a cut. If it does not, the spring assembly may need repair.

49.11 Radial Arm Saw

Maintenance

- When connecting saw to power source, be sure to follow guidelines outlined in instruction manual;
- Keep the manual in a location where operators can easily obtain it;
- During installation, the front-end unit will be slightly higher so that the blade will return gently to the starting position when released by the operator. A return reel is an option accessory to be sure this occurs;

- Operators shall do a safety walk around the radial arm saw area prior to commencing work;
- Dull, badly set, improperly filed, or warped saw blades, and saw blades with damaged teeth, shall be immediately removed from service before they result in causing the material to stick, jam or kick back when it is fed to the saw at normal speed;
- Cleanliness around the wood working machinery is to be maintained to ensure proper functioning of guards, bearings, motors, and electrical equipment, and to prevent generation of fire hazards;
- Adequate lighting in the work area shall be provided;
- Do not use blades or larger diameter than recommended;
- Do not operate the saw unless it is properly grounded;
- A positive means of lockout shall be provided for rendering such controls or devices inoperative while repairs or adjustments are being made to the machine;
- All belts, pulleys, gears, shafts, or other moving parts shall be guarded;
- Lower blade guards will be in place during ALL cutting operations;
- Each circular hand-fed saw shall be provided with a hood-type guard that will cover the blade at all times;
- Each saw shall be provided with an anti-kickback device so as to oppose the thrust or tendency of the blade to pick up the material and throw it back toward the operator; and
- An adjustable stop shall be provided to prevent the forward travel of the blade beyond the position necessary to complete the cut in repetitive operations. A limit chain or other equally effective device shall be provided to prevent the saw blade from sliding beyond the edge of the table or the table shall be extended to eliminate over-run.

Operation

- Where the wearing of gloves creates a possible hazard, they shall not be worn;
- Long hair shall be confined;
- Loose flowing garments, sleeves, etc. offer a decided accident hazard and shall not be worn by operators of machines;
- Safety glasses or goggles are mandatory;
- When employees are subjected to noise levels exceeding limits, hearing protection is required;
- Keep the working area clean from trip hazards and fire possibilities;
- Keep hands well away from saw blades and other cutting tools;
- The practice of stopping blade rotation by placing a piece of wood against the rotating blade is prohibited;
- Never leave the machine with the power on;
- Respiratory protection should be considered if harmful dusts, fumes, or vapors are present;
- Before a worker is permitted to operate any woodworking machine, he shall receive instructions in the hazards of the machine and the safe method of its operation;
- General superintendents should designate only certain personnel to use the saw;
- Always return carriage to full rear after each operation;
- Do not rip from wrong direction – observe caution tag on guard;
- Do not force cutting system;

- Do not place hands closer than 6 inches from the saw blade during a cut; and
- One operator only, the person who pulls the saw should position the work.

50 Utility Protection

50.1 Purpose

The purpose of this program is to establish requirements for the safe work procedures pertaining to locating and conducting excavation and other related work operations near or on pre-existing buried utilities on all DBJV construction project sites. Detecting, marking and uncovering utilities are potentially hazardous work operations that involve excavation as one of our core competencies and a key component of the vast majority of our projects.

During the pre-construction planning phase, Project Management must:

- Identify pre-existing utilities located on their project;
- Identify specific work operations involving these utilities;
- Determine all safety requirements to be satisfied pertaining to work operations involving these utilities; and
- Create a project-specific Safety Plan that includes detailed instructions for satisfying all safety requirements for work operations involving pre-existing utilities. Incorporate the use of all pertinent Safe Work Procedures, or industry-mandated safety/work procedures as necessary and prudent.

Applicable Regulations

OSHA 29 CFR 1926.650-652

50.2 Specific Responsibilities

Project Management shall:

- Follow all applicable State and local requirements in regard to locating, excavating, protection and of utilities;
- Review drawings and contact their state or local One Call or other utility locating service to detect and mark all utilities that will be encountered during excavation work.
- Provide notification and adequate time (based on local practice) for response, to Utility Companies and Owners;
- Utilize soft hand-digging or other alternative safe method of excavation when approaching the estimated location of an underground installation;
- Protect, support or remove underground utility installations as necessary to safeguard employees while the excavation is open;

- Terminate work immediately and contact Utility Company or Owner if any damage occurs to any line;
- Re-start work near a damaged utility line only after the Utility Company or Owner gives authorization; and
- Train all employees and ensure that they safe working procedures as outlined in this program. All training shall be documented

50.3 Procedures

The Utility Locating & Location Verification Process is composed of the following important stages:

- Stage One – Identification of our work zones and placement of Utility One-Call calls.
- Stage Two – Inspection of One-Call Markings & completion of all due diligence required to account for all unknown & unmarked utilities.
- Stage Three – Verification & documentation of all utilities within twenty five feet of our work zones using soft dig methods and communication of utility information to our Crews.
- Stage Four – Safe excavation and / or construction of our contracted work in areas with utility conflicts while protecting the utility at all times. A state minimum buffer must be maintained between the machine & the utility during excavation.
- • Stage Five – Continued maintenance of utility location markings, overhead hazard signage/communication and of the Miss Utility Ticket.

General Requirements

- On all projects we are required to physically locate / uncover ALL known or suspected existing underground utilities that are within 25' of our excavation zones PRIOR to excavating with hydraulic equipment near and / or above them or traveling large equipment across them using non invasive excavation / location techniques (air knife, vac truck, shovel etc.).
- DO NOT dig until you know with 100% certainty what's below the incoming bucket teeth.
- Maintain a reasonable clearance, to include the width of the utility line, if known, plus 24 inches, between the marked or staked location of an underground utility line and the cutting edge or point of any mechanized equipment, considering the known limit of control of the cutting edge or point to avoid damage to the utility line.
- When planning to work adjacent to an overhead electrical utility we must first seek to have the source de energized during the early planning stage of the project. If the utility is unable to be de energized the minimum clearance distance identified within this procedure must be maintained at all times and be verified by a spotter as identified in this procedure.

50.4 Responsibilities

Stage One

- One-Call Utility Tickets are required for any crews performing excavation or demolition work that requires disturbing the earth's surface. This includes excavation, pipe, concrete, blasting, curb, etc. One-Call Utility Calls are to be coordinated as part of the Pre Construction Planning process. Project Managers (or their designee) will be responsible for placing a Web Based One-Call ticket before any excavation work can begin. The law requires that One-Call be submitted three (3) working days prior to excavation, drilling, blasting or boring on public or private property. The duration for the dig ticket within the state is 27 working days.
- Project teams will continually review their active tickets and identify new jobs, changes in scope of work such as blasting to excavation, changes in the work location and additional areas requiring One-Call Tickets.
- Project teams must maintain any active One-Call Utility tickets where work will be continuing beyond the scope of the current ticket. This will be accomplished by completing a Web Based Entry to One-Call Utility.
- New tickets may be entered using the web based entry system at any time.

Subcontractor Responsibilities

- Subcontractors must complete all of the activities within this section for all work activities that involve any activity that disturbs the earth's surface.
- Subcontractors will submit confirmation of such compliance to DBJV upon request.
- Subcontractors will be responsible for all tickets, soft digging, and protection of the utility lines as set forth by state law and in this section.

Administrative Responsibilities

- The Safety Department will have access to the One-Call Utility Web Based Entry System and have the ability to develop a listing of all tickets entered by a project team. This will be done on an as needed basis to provide over sight control and obtain information necessary to investigate utility strikes.

Project Manager/ Project Engineer Responsibilities

- Ensure that valid One-Call Utility tickets are submitted for all areas where work will take place.
- Meet regularly with the superintendent to keep the information contained on the tickets current as to location, scope of work and termination.

- All One-Call Utility Tickets are to be entered utilizing the Web Based Entry System.
- The Project Manager and Project Engineer must know and comply with the One-Call Utility requirements.
- All Project Managers, Project Engineers and second year Career Track Engineers will complete the Web Based Entry Training Program.
- Project Managers will assist the superintendent in preparing the Hydro Excavator daily log, drawings to be attached to the daily log, and will schedule the Hydro Excavator to verify the location and elevations of all utilities after they are marked out. No work may proceed until this process has been completed.

Superintendent Responsibilities

- Review all active tickets and makes any corrections or changes relative to the information on the ticket.
- Notify Project Manager/ Engineer of when to terminate One-Call Utility Tickets for inactive projects or areas where work is no longer continuing.
- Know and comply with the One-Call Utility requirements.
- The Superintendent should also be the point of contact for utility owners and meet personally with utility company representatives on a regular basis to ensure that cooperation and coordination exist.
- The Superintendent will be responsible for meeting with the Hydro Excavator prior to the crew starting work, and will document all findings with the Hydro Excavator crew at the end of the shift. The Superintendent will also coordinate traffic control if necessary for Hydro Excavator to perform work.
- Superintendents are required to hold a brief group meeting with each crews Field Manger Operator (that will be excavating/working near utility) and Laborer (that directs and guides the Operator working around the utilities) at the upcoming workzone each day to review the utilities that the Crew will be working around. The superintendent will make sure that the Field Manager, Operator & Laborer clearly understand what utilities are in their workzone and what the plan is for working around them. PM, PE or Safety Rep can substitute for them when requested to do so by the Superintendent.

Foreman Responsibilities (prior to excavating)

- It is assumed that the Foreman shall be the lead of all work activities and be working with the crew at all times each day.
- The project engineer will print a copy of the confirmation Email received from One-Call Utility Ticket and ensure that each field manager working in the affected area receives a copy. The field manager must log the One-Call Utility serial number on their Daily Job Control Report (this will serve as a safety check). Under no circumstances is a Field Manager to excavate until he has

confirmed a recent One-Call Utility Ticket for the area in which they will be digging and has received a copy of the confirmation.

- Prior to beginning excavation it is the Foreman's responsibilities to review all plans and to complete the Utility Verification Checklist verify any known or "unknown but discoverable" utilities. The Utility Verifier shall be used to confirm all marks installed by the utility location company and to discover private utilities not mark by the utility location company. To finalize the discovery process it is necessary for the Foreman to complete a 4 directional scan with the utility verifier in the defined area of excavation to attempt to located unknown but discoverable utilities.

Hydro Excavator Crew Responsibilities:

- The Hydro Excavator crew will follow One-Call Utility standard operating procedures, as well as verifier's standard operating procedures.
- The Hydro Excavator crew will locate all utilities identified by the project team.
- The crew will provide the location and elevation of all utilities (top and bottom elevations), and mark with screenings / stone and Lateral Board with cut to top and bottom of utility.
- The crew will provide diagrams as needed to clarify conflicts and as built the Project Team provided site plans.

Stage Two

- Subcontractor, Superintendent, & Safety Coordinator are to Inspect the One-Call Utility Call Markings provided by the utility locating service and verify that all potential underground utilities have been marked. It is our intent to discover all errors and omissions from the existing utility plans and from the utility locating services markings by accounting for all unknown & unmarked utilities (The attached "Surface Penetration Permit", (Appendix C-14), is a tool to help us with this). Suspected unmarked utilities are to have their locations aggressively pursued with the Utility Company and / or Utility Locating Service prior to Excavation by our Crews. Completion of our Utility Verification Checklist is required to ensure that we have accounted for all unknown & unmarked utilities to the best of our ability.
- Completed checklists are to be stored with the projects safety documentation and distributed to and reviewed with all Foremen prior to construction or excavation.

Stage Three

- Subcontractors, Superintendents, Safety Coordinators and / or Foremen will verify and document the exact location & depth of all utilities that are within twenty five feet of our work zones using

soft dig methods prior to the start of any movement of equipment or excavation within twenty five feet of the expected utility location.

- Verifiers are to be used to scan all areas prior to the movement of construction equipment and / or prior to excavation.
- Written & physical (paint marks, guard stakes, etc.) documentation is to be completed.
- Written documentation is to be stored with the projects safety documentation and distributed to Foremen prior to construction or excavation. Written documentation and physical documentation (paint marks, guard stakes, etc) is to be reviewed with Foremen prior to construction or excavation.
- Overhead Power Lines: All overhead lines within our work zones are to be identified and noted on our Utility Verification Checklists in stages two and three of this procedure. All overhead lines are to be planned for and communicated to the Foreman.

Table 52 A - Minimum Clearances From OHPL

Voltage (kV)	Minimum Clearance (feet)
Up to 50	10
50 to 200	15
200 to 350	20
350 to 500	25
500 to 750	35
750 to1000	45
Over 1000	Established by line owner

- Spotters are to be used at all times when our equipment has the ability (size) to reach from the beginning of the “Safe Zone” to the wires. When this condition occurs, spotters are to be used when our equipment is within 100’ horizontally of the wires (on each side).
- Overhead Lines warning signs are to be used on each side of overhead lines (100’ in each direction) on all overhead lines less than 50’ high.
- Overhead lines less than 50’ high must have warning devices attached to prior to construction to increase visibility.

***Other Warning devices and communications shall be considered by the project team based on the scope and hazard of the work including; proximity alarm indicators, barricades, additional signage or hazard area identification markers (speed bumps, paint, barrels, cones etc.) Remember the warning device is only as good as the communication and diligence of the project as a whole (including subcontractors and suppliers) to maintain the awareness.

Stage Four

- Extreme care is to be taken when moving equipment on top of underground utilities and when excavating around them.
- Verifiers are to be used to scan all areas prior to the movement of construction equipment and / or prior to excavation.
- Shock proof shovels are to be used when electrical lines are suspected to be encountered. All exposed utilities need to be supported and protected at all times.
- Maintain a reasonable clearance, to include the width of the utility line, if known, plus 24 inches, between the marked or staked location of an underground utility line and the cutting edge or point of any mechanized equipment, considering the known limit of control of the cutting edge or point to avoid damage to the utility line.

Stage Five

- •Continued maintenance on all controls including warning barriers, spotters, signage & documentation is required. At the event of a change in the operation review all procedures to assure the necessary steps are taken to comply with this policy.

50.5 Verifier – Standard Operating Procedure

The following standard operating procedures apply to all field managers assigned utility verifiers.

1. Subcontractor or Foreman using a “verifier” will participate in the formal training class provided by the manufacturer. Training will be conducted in the proper use and operation of the underground utility locating device. This instruction may include a formal classroom presentation to be followed by hands on training in the field. A manufacturer’s representative, subcontractor representative, or the safety department will conduct annual refresher training if necessary. Each subcontractor or foreman must successfully complete this training prior to operation.
2. Prior to excavating, each subcontractor or foreman will establish the “One-Call Utility Ticket” has been received. Subcontractor or foreman will receive a copy of the Ticket and enter the serial number on their daily work plan. No excavation work may take place unless the subcontractor or foreman has this information.
3. Prior to excavation work beginning, the subcontractor or foreman must meet with the Project Superintendent on location and familiarize himself with the scope, location, and method of excavation. This familiarization will include a walk of the site and general scan of the work area for evidence of utilities such as: ditch lines, pole drops, road cuts and patches, meters and boxes. The Project Superintendent will also review with the subcontractor or foreman the design phase plans, construction plans and all diagrams and as-built made by the Hydro Excavator crew.
4. Prior to the start of the work operation the subcontractor or foreman is responsible to assure that all utility marks are confirmed with their utility verifier and that 4 directional scan is done of the area. If

you identify a utility with your “verifier”, the “One-Call” requirements are: “To exercise due care and take reasonable steps to avoid injury to or interfere with any known utilities”. In the tolerance zone: “The contractor shall employ prudent techniques, which may include hand digging test holes until the marked facility is exposed”. Prudent techniques also include but are not limited to using an air knife, insulated probes, Hydro Excavator or other soft dig technology that will not damage a utility.

5. Company policy requires that we DO NOT excavate with any mechanized equipment (i.e. backhoe, excavator, grader, dozer etc.) until we use the soft digging means available (Hydro Excavator, shovel and/or the air knife, etc.) to locate and expose utilities (marked or unmarked) along the proposed excavation within a 25 ft. radius. Once locate all soil within 24” of the located utility must be removed by shovel, air knife or hydro excavation equipment.
6. If the subcontractor or foreman supervision verifies a utility at a different location (other than what is marked); they still have a legal responsibility to treat that utility as a marked location and to apply prudent technology during excavation.
7. Subcontractors or foreman performing limited excavation work (e.g. curb crews/stone and grade crews, etc.) should utilize the services of more experienced crews with verifiers. Additionally, these types of crews should utilize the Hydro Excavator, air knife and other technology to assist in their efforts to verify utility locations.

51 Welding and Cutting

51.1 Purpose

The purpose of this program is to establish guidelines to protect employees from the hazards of welding and cutting and the compressed gasses used in these operations. Due to the amount of work we do on projects with metals, it is necessary to have safeguards such as welding screens and personal protective equipment to protect employees as well as welding screens to shield the public from the welding arcs.

These procedures will be strictly adhered to on all projects. Applicable Regulations

OSHA 29 CFR 1910.251-252

OSHA 29 CFR 1926.350 Subpart J

51.2 Responsibilities

Project Staff shall:

- Purchase all welding and cutting equipment according to Corporate program specific to brand and model;
- Provide, at no charge, all necessary personal protective equipment for safe welding operation;
- Enforce the details of this procedure;
- Ensure workers use compressed gas cylinders and welding and cutting equipment according to the procedure as set out in this program;
- Allow only qualified employees to use welding and cutting equipment; and
- Provide ventilation equipment when welding operations create hazardous atmospheres.

Employees shall:

- Only use welding and cutting equipment if they have been designated to do so by their supervisor;
- Use all personal protective equipment and welding screens when designed by their supervisors.

51.3 Procedure

Compressed Gas Cylinders Handling, Storage and Use

- Keep valve protection cap in place at all times when a cylinder is not in use;
- Secure cylinders in an upright position, use carriers or carts and isolate them from welding and cutting operations;
- Cylinders, when transported by vehicle, will being an upright position;
- When hoisting cylinders, secure them on a cradle or cart;
- Do not hoist individual cylinders with a chain or a choker sling;
- Compressed gas cylinders must be stored at a minimum of 20 feet from fuel gases or separated by a noncombustible barrier wall at least five feet high with a ½ hour noncombustible rating (1/4" steel plate minimum). Storage must be in a well-ventilated area with a minimum distance of five feet from other materials;
- Storage of propane inside a building is prohibited;
- Gas hose shall not be stored in an unventilated connection or knack box;
- Carts shall have half hour resistant wall between cylinders;
- Fuel gas and oxygen manifolds must be located in well-ventilated areas;
- Do not use a bar to pry cylinders from frozen ground, use warm water to thaw the cylinders; and
- Do not take oxygen, acetylene or other gas cylinders into a confined space. Gas Welding and Cutting

Safe Practices and Procedures

- Reverse flow check valves will be installed at the torch end;
- Flashback arrestors will be installed at both the torch end and the regulator (most are manufactured this way);
- Inspect hoses and fittings daily and replace damaged hoses to prevent leaking gases;
- Keep hoses, cables and other equipment clear of passageways, ladders, and stairs;
- Place cylinders away from the work, so that sparks, hot slag, or flame cannot reach them;
- Use only approved regulators, gauges, and torches;
- Use only friction lighters – strikers – to ignite torches;
- "CRACK" (open and close quickly) all cylinder valves to remove any dirt or dust, prior to connecting a regulator;
- Keep all hose, regulators, cylinders, valve protection caps, couplings, apparatus and torch connections free of grease and oil;
- Do not weld or cut on any containers that have contained toxic or flammable materials;
- Do not place anything on or near a manifold or cylinder top that may interfere with prompt shutoff in case of an emergency;
- When shutting down a system make sure to shut off regulators and bleed lines; and
- Do not use oxygen for personal cooling, cleaning off surfaces, ventilation or blowing dust from clothing. Oxygen clings to porous cloth and greatly enhances the risk of igniting the cloth that will subsequently burn in the oxygen rich environment that has been created.
- Operators of equipment shall report any equipment defect or safety hazard and discontinue use of the equipment until its safety has been assured. The equipment shall be tagged out of use. Repairs shall be only made by qualified personnel

Arc Welding and Cutting Safe Practices and Procedures:

- Wear boots that extend above the ankle and pants extending below the tops of the boots;
- Be sure that your welding hood is properly attached to your hard hat and in place before striking and arc, and during welding;
- Wear safety glasses under the hood or shield;
- When leaving electrode holders unattended, remove the electrode and place the holder in a place so that the electrical contact will not occur;
- The welding machine should be shut off when not in use for a substantial period of time or it is being moved;
- Use noncombustible or flameproof screens to protect employees and passerby's from arc flash whenever practical;
- Put rod stubs in a container, if they are left around loosely, they present a slipping hazard;
- Do not use cables with repairs or splices within 10 feet of the holder unless the insulation is valued equivalent to the original;
- Do not weld on any drum or container that has contained gasoline, oils or other flammable liquids; and:
- Use appropriate earmuffs, or earplugs when performing plasma arc welding or cutting.

Ventilation:

- Ventilation must be sufficient to supply respirable air to the welder and to passersby;
- Mechanical ventilation must be provided when welding or cutting on metals is done, in a space less than 10,000 cubic feet per welder, in a room having a ceiling height less than 16 feet or in a confined space'
- Such ventilation shall be at the minimum of 2,000 cubic feet per minute per welder, except where local exhaust hoods, booths, or airline respirators are provided; and
- Natural ventilation is considered sufficient when the above restrictions are not present.

Protective Clothing:

- All parts of the body should be protected from radiant energy, sparks, and molten metal particles.
- Clothing made from wool and wool blends is generally better than cotton from a safety standpoint. Some welding processes such as inert gas, metal arc welding will cause exposed cotton clothing to deteriorate rapidly;
- Leather capes, jackets, leggings, and aprons will provide additional protection; and
- The use of dark clothing will reduce the amount of reflected light. Respiratory Protection:

- Arc welding and gas cutting and welding generate carbon monoxide, carbon dioxide, and nitrous gases. When these potentially hazardous materials are present in a job in amounts that exceed OSHA's personal exposure limits, respirators will be provided that are suitable for the particular hazard;
- Any welding, cutting on lead base metals, zinc, cadmium, mercury, beryllium or exotic metals or paints shall have proper ventilation and respirator protection
- Respiratory Protection procedures will be according to that corresponding section in this Health and Safety Plan ;
- The material safety data sheet must be consulted on the material being welded, the welding rods being used, or the flux required determining what toxic materials the process may emit.

Eye Protection

- Welders and their helpers should wear filter lens to protect their eyes against infrared and ultraviolet light. The guide on the following page shows shade numbers of filter lenses and their recommended use.

Table 53 A - Welding Lens Shade Chart

Welding Operation	**Shade Number**
Shielded metal-arc welding 1/16, 3/32, 1/8, 5/32 inch diameter electrodes	10
Gas-shielded arc welding (non-ferrous) 1/16, 3/32, 1/8, 5/32-inch diameter electrodes	11
Gas-shielded arc welding (ferrous) 1/16, 3/32, 1/8, 5/32-inch diameter electrodes	12
Shielded metal-arc welding 3/16, 7/32, ¼ inch diameter electrodes	12
5/16, 3/8-inch diameter electrodes	14
Atomic hydrogen welding	10-14
Carbon arc welding	14
Soldering	14
Torch brazing	3 or 4
Light cutting, up to one inch	3 or 4
Medium cutting, 1 inch to 6 inches	4 or 5
Heavy cutting, over 6 inches	5 or 6

Gas welding (light), up to 1/8 inch	4 or 5
Gas welding (medium), 1/8 inch to ½ inch	5 or 6
Gas welding (heavy), over ½ inch	6 or 8

Unless a welding arc is behind a screen or barrier, not only the welder but also employees within 30 feet will need eye protection.

Fire Protection:

- Prior to commencing any welding operation thoroughly inspect the work area to make sure that there are no combustible materials nearby. Clear and maintain a 35 foot radius;
- Keep a fire extinguisher within 30 feet of your work area;
- A thorough visual inspection of the work area should be made after each shift (approximately ½ hour) to make sure that combustible material is not smoldering and that all equipment has been shut down and properly secured;

- Institute a "Hot Work Permit";

    - The Hot work permit will initiate the precautions to be taken, the inspection of the area prior to welding is permitted and provide a written authority for welding and cutting operations to begin.

- A fire watch will be assigned for all Hot Work activities;

    - A fire watch is required when welding, cutting, brazing and or soldering is performed near combustible materials and or locations where fire may develop.
    - Fire watchers shall have fire extinguishers readily available.
    - At a minimum, one Fire Watch is required at each Hot Work location with the sole purpose of being a Fire Watch.

- Criteria for welding on immovable objects;

    - Objects to be welded or cut that cannot readily be moved shall ensure all moveable fire hazards are removed from the area.

- Objects to be welded or cut that cannot be moved, then guards and shields, fire blankets shall be used to confine the heat, sparks and slag and to protect the immoveable fire hazards
- Where fire hazards cannot be taken to a safe place or guards cannot be used to confine heat, sparks, slag and protect the immovable fire hazards, the welding and cutting shall not be performed

52 Work Zone – Maintenance of Traffic

52.1 Purpose

The purpose of this program is to develop maintenance of traffic regulations to protect not only our employees but the public when DBJV is involved in operations that directly impact traffic and the flow of it. This program is made site specific according to the environment and needs of the site.

OSHA 29 CFR 1926.200

OSHA 29 CFR 1926.201

Manual on Uniform Traffic Control Devices (MUTCD).

2011 Work Area Protection Manual (WAPM)

52.2 General Requirements

Multi-lane (Two lanes in same direction or greater) roadways or Lane merging is required or long term lane closures greater than 24 hours the following policies and procedures will apply:

- A designated Traffic Control Supervisor (TCS) shall be appointed. The TCS will primarily be concerned with planning, layout and maintenance of traffic control, Supervision of the MPT crews.
- Other responsibilities will be referenced in the following pages regarding specific activities.
- The DBJV. MPT Permit (Appendix C-17) shall be completed by the TCS before any pattern set-up or work begins in a work zone.
- Any pattern set-up or removal of devices from the MPT truck shall be done in a forward progression.
- Vehicles backing to set or recover devices shall be done only after written approval from the Project Manager and the Safety Department.
- There shall be two-way communication (Radio) between all vehicles and the TC Supervisor in charge of traffic control, including employees working at the back of the vehicle.
- When signs and channelizing devices are installed and removed several times during an operation, a spot should be painted or marked where each sign or device is located to minimize time required to reset the signs or devices;
- All aspects of the closure must provide clear, concise direction to all drivers. Be sure of positioning and visibility of all signs, flashing arrow/message signs, barricades and delineators.
- A checklist shall be completed to ensure the signs and devices are in their correct position and maintained.
- During day or night operations, a “back-up”, “shadow”, or “protection” vehicle shall be used and should be positioned 100 feet or more behind the “MPT” truck as the first signs are placed. This process is to be followed for set-up and removal;

- Unless working behind barriers, in work zones where working crews are separated by approximately
  1000 feet or more, an additional crash truck shall be used. 1000 feet is a guideline and is considered the maximum distance between crews. Conditions may warrant additional crash trucks less than 1000 feet.
- All MPT crews working in or around the closure shall wear as a minimum a Class III garment to fully defining the body and proper PPE. This also applies to subcontractors;
- Other applicable considerations include:
- Retro reflective striping on hard-hats;
- Eight (8) hour snap light sticks pinned to clothing; and
- Hard hat mini-light attachments.
- Before making night time closures, all materials and equipment must be inspected and in good working order;
- All message boards and flashing arrow signs shall be tested to ensure all lights and switches are functioning properly and that the equipment is fueled and fully charged;
- A pre-shift inspection and maintenance procedures shall be documented daily and/or nightly;
- Devices maintained in project inventory must be kept clean, stored properly to avoid marring and organized to verify that all items are in stock and readily retrievable;
- Devices shall be inspected when they are returned to inventory;
- Any devices that are non-standard or in poor condition shall be retired, modified or repaired; and
- Equipment on work sites must be in good operating condition to avoid breakdowns and delays.

52.3 Responsibilities

All Project Management shall:

- Comply with all company safety and health regulations.
- Conduct Pre-Construction planning with the Safety Department whenever employees or subcontractors work in the following traffic work zones:
- Multi-lane (Two lanes in same direction or greater) roadways.
- Lane merging is required.
- Long term lane closures greater than 24 hours.
- Solicit the customer to provide barrier protection for employees working in the work zone.
- Solicit the customer for Police support in traffic control. Training shall:
- Comply with specific training regulations in section 6D.03 of the MUTCD Traffic Control Supervisor training requirements are the “ATSSA Traffic Control Supervisor” certification.

MPT crewmembers are employees engaged in traffic control set-up, removal and maintenance. All MPT employees are required to have ATSSA Traffic Control Technician (TCT) training.

The only exceptions are:

- MPT crew members will receive the eight hour State Highway work zone safety training instead of ATSSA TCT.
- Be sure that other construction workers engaged in construction in the work zone have work zone hazard awareness training. This also applies to subcontractors;

52.4 Traffic Control Plan

- Each State requires a traffic control plan for work zone activities.

- Definitions

Maintenance and Protection of Traffic Plan (MPT)

Maintenance of Traffic (MOT)

- Traffic Control Plans shall contain at a minimum the following:
    - A designated Traffic Control Supervisor (TCS).
    - Copy of current specifications;
    - Maintenance of Traffic Permit;
    - Duration of plan;
    - Traffic conditions (volume, speed, etc.);
    - Existing traffic control measures;
    - Photos and/or video of existing conditions along with periodic photos as the plan changes.

52.5 Vehicles Specifications:

- Multi-lane (Two lanes in same direction or greater) roadways or Lane merging or long term lane closures greater than 24 hours the following vehicle will be required.

Minimum requirements for the Cone Truck shown above:

- Shall be equipped with a work platform on each side of the body behind the cab.
- The platform allows workers to stand while setting out devices in the pattern, one on each side built into the bed frame. This design will help to ensure the safety of the worker while reducing the possibility of an injury due to excessive bending;
- The platform shall provide fall protection for the employee.
- Shall have a 360-degree rotating, high intensity, rotating, flashing, oscillating or strobe light on the roof.

Minimum requirements for the Panel or Barrel truck:

- Shall be equipped with a work platform on each side of the body behind the cab.
- Shall have a work platform on the back of the body. The platform allows workers to stand while setting out devices in the pattern. This design will help to ensure the safety of the worker while reducing the possibility of an injury due to excessive bending.
- Workers in the body of the truck must be protected from falls.
- Shall have a 360-degree rotating beacon on the roof.

- The work platform, shown below, used for employees to work from shall be a slip resistant all weather surface;
- It shall have handrails on all sides;
- It shall have a positive connecting system to the truck frame;

Minimum requirements for the Crash Truck:

- Shall be equipped with a 360 degree rotating beacon
- Type I arrow board
- There shall be an approved Truck-Mounted Crash Cushion (TMCC) attached to the rear of the truck for protection against vehicle impacts. The TMCC must meet the manufacturer's recommendations for truck size and installation.
- The crash truck must always be the last vehicle in the traffic control procession.

The MPT truck can be any vehicle if it meets the following requirements;

- Shall have a 360-degree rotating, high intensity, rotating, flashing, oscillating or strobe light on the roof.
- Front and rear strobe warning lights.
- Construction Vehicle Warning Sign displayed on the rear.

52.6 Flagger Control

- Flaggers are required:
  - When the work zone is a short-term, low speed (less than 45 mph) zone;
  - When workers or equipment intermittently block a traffic lane;
  - When plans call for one lane to be used for two directions of traffic with a flagger at each end;
  - When safety determines there is a need; and
  - When required by the owner.
- Flaggers must have been trained and have a valid flagger certification card before beginning any flagging activities. Valid certification is through the Flagger Certification Program;
- Flaggers must be designated by their employer using the designation form and the form is required to be submitted to the DBJV Safety Department. (See Appendix C-21).
- Flaggers shall be alert, intelligent, neat in appearance and have good hearing and eyesight;

- They must be placed per the MOT plan to be effective in slowing or stopping traffic before it enters the work zone;
- All flaggers must wear Class III reflective garments (Vest and Pants) day or night and hard hats, use sign paddles and when necessary, carry two-way radios;
- From sunset to sunrise, flagger stations must be illuminated so the flagger is clearly visible to approaching traffic;
- When communicating through radios, a spare battery pack shall be readily available; and
- If communication breaks down between the flaggers, the operation is to be shut down immediately until the situation is remedied.

52.7 Documentation

- The TC Supervisor will be responsible for documenting traffic control including the "Maintenance of
- Traffic Permit" each shift.
- A pre-shift equipment check to ensure all equipment used for traffic control is in good working order will be done prior to the start of shift and documented.
- Further documentation shall include an accident kit with camera (available in the glove box of the truck) for recording any accidents or incidents. These pictures should be in a successive series from advance warning, all the way up to and including termination of the traffic pattern.
- Documentation records should include:
    - Starting and ending times of work;
    - Location of work;
    - Names of crewmembers;
    - Types of equipment used;
    - Changes in temporary or permanent regulatory devices;
    - Installation, change and removal of traffic control devices; and
    - Drawing of working closure to include all devices.

- When an inspection requires correction to include maintenance, the documentation should include:

    - Description of the corrections needed, and when it was noted and by whom;
    - Corrections made or deferred and why;
    - Replacements made or deferred and why; and
    - Any other needed actions.

52.8 Control Warning and Guidance Devices

Effective warning and guidance devices are planned out in advances, and should be uniformly placed and well maintained. There are six categories of devices: signs, barricades, delineators, high level warning

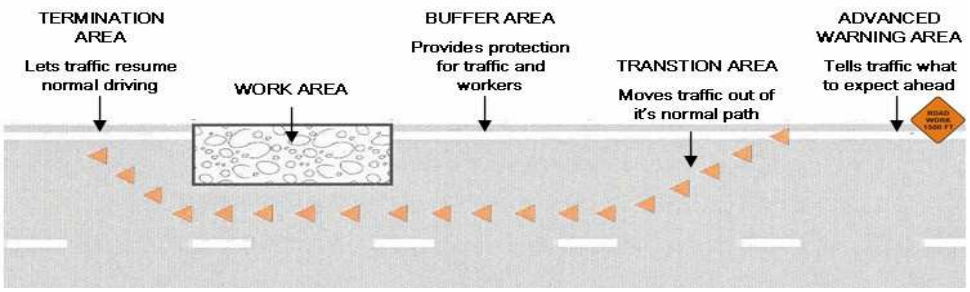
devices, warning lights/illumination, and flashing arrow/message boards. See site specific MPT plans for specific layout requirements of the following.

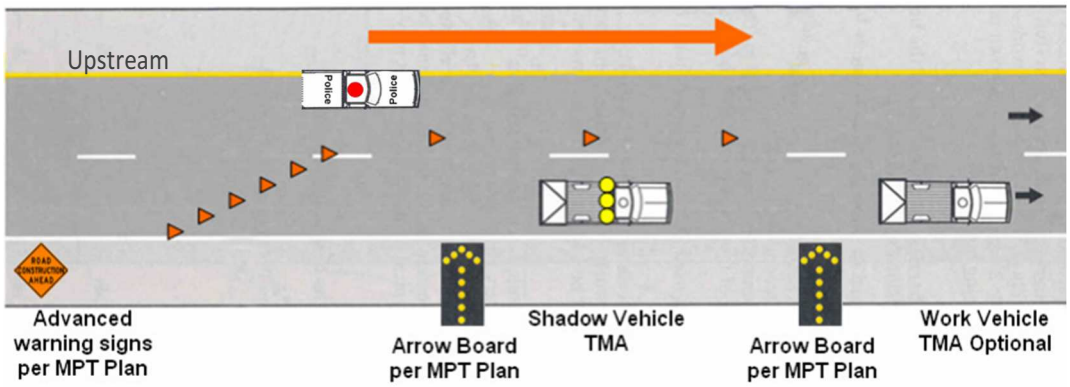
52.9 Road Closures

Multi-Lane Closure Procedures:

The largest number of vehicle accidents involved on construction sites occurs during daylight hours. It is vital that all closures begin well in advance of the area where work is conducted to provide a strong cushion of worker safety.

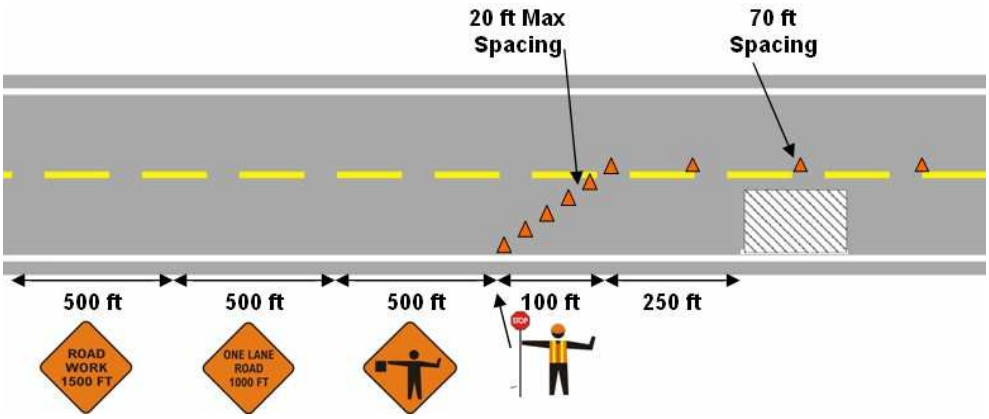
- Devices should be installed in the direction of traffic in the following order:
    - First Advance Warning Sign;
    - Advance Warning Zone;
    - Transition Zone;
    - Buffer Zone;
    - Work Zone; and
    - Termination Zone.





Multi-Lane Set-up procedure (see diagram above)

- Signage and pattern set-up per MPT plan;
    - Using an MPT truck and a Crash truck as a shadow vehicle with Police support if available, set signs in affected lane.
    - TMA remains upstream while arrow board is placed.
    - TMA remains upstream of transition area while taper is set.
    - The TMA will always remain upstream of the MPT truck while the tangent is set.
- Signage and pattern removal per MPT plan (see diagram above);
    - Removal of pattern with Police and TMA upstream of MPT truck or MPT crew on foot to retrieve devices in a forward progression starting at the taper.
    - Remove signage with Police and TMA upstream of MPT truck or MPT foot



Short term, single lane, low speed (less than 45 mph) Flagger Procedure, Single or

double flagger pattern;

- Signage and pattern set-up per MPT plan (see diagram above);
    - Using MPT truck or Field Manager Truck with required lights and signs upstream of crew, place advanced warning signs in unaffected lane.
    - Set signs in affected lane.
    - If single flagger is used with no taper or tangent, position the flagger in an area where they can effectively control traffic with direct line of sight to all entrances to the work area.
    - If taper and tangent are used, position flaggers at both ends of the pattern to stop traffic.
    - Set taper and tangent with no traffic movement.

- Signage and pattern removal per MPT plan;
    - Removal of pattern with traffic stopped at both ends.
    - Remove signage from affected lane with MPT truck or Field Manager truck upstream of crew.
    - Remove signage from unaffected lane with MPT truck or Field Manager truck upstream of crew.

Crossing Live Roadways:

- When concrete or other temporary work zone barriers are erected for employee protection, employees may not climb on or over these barriers for any reason in live traffic;
- This policy applies to all roadwork where a physical barrier to keep workers and traffic separated is in place;
- When traffic control devices such as cones, barrels or other delineators are used, the traffic control plan must stipulate the access areas for workers to cross the roadway. During morning huddles and as necessary, employees must be told where and when they can cross the roadway. It is not acceptable to cross live traffic other than the areas designated for accessing;
- Working outside of any barrier or delineator during live traffic is never acceptable. When working in live traffic, all work shall be done behind the delineators.

52.10 MPT Permit

All work zone activities require the following permit to be completed and submitted to the project team for review. (Appendix C-17)

52.11 Pedestrian Control

General:

- Pedestrian Traffic shall be maintained or detoured at all times;
- Wayfinding Signs shall be placed per a Pedestrian Control Plan for all phases of work;
- All pedestrian paths and covered tunnels through work zones shall be kept free of obstructions and meet ADA requirements;
- Pedestrian tunnels under scaffolding or erected to convey pedestrians through work zones will be designed to protect the public from overhead and surrounding work and shall be lit; and
- Emergency exits shall be marked.

53 Conclusion

Any person working on the Great Hall Project shall use this Design and Construction Health and Safety Plan as a tool and reference guide for their pre-construction and construction activities. The information in this plan should aid the subcontractors in performing injury free work while working within the project limits. DBJV is committed to maintaining a safe working environment for all their subcontractors and will aid the subcontractors in any way they feel necessary or as requested by the subcontractors.

54 Appendices

- Appendix A Emergency Action Plan
- Appendix B DBJV subcontractor safe start document
- Appendix C Forms

APPENDIX A. Emergency Action Plan

1. Purpose and Scope

The purpose of this Emergency Action Plan (EAP) is to provide all subcontractors and employees of DBJV with a set of instructions for responding to and controlling further harm resulting from any emergency or situation which presents a threat to public health and safety that must be immediately managed by the persons directly involved or witness thereto.

This EAP is compliant with DEN's "Airport Emergency Plan" September 21,2015.

In addition, this EAP has been developed to comply with the requirements of OSHA 29CFR 1926.35, and

1910.119(h) (i) "Employee Emergency Action Plans".

2. Responsibility and Authority

For the areas that the DBJV are operating in, the DBJV' Safety Personnel have the primary responsibility for responding to emergencies to ensure that all control actions for any emergency are immediately initiated. This includes responding appropriately to ensure the safety of Site Personnel and the public, such as evacuation from the site.

The Safety Personnel must also ensure that the appropriate authorities have been notified, and follow-up reports have been completed.

The Project Supervision must ensure that corrective measures have been implemented in order to prevent a recurrence of the same type of emergency.

3. Communication

The principal communication method on the Project site for normal operations is cell phone. The cell phone is for primary communication during work and will be used for communication during emergencies.

Within individual subcontractor crews, a line-of-sight voice communication will be maintained. Any persons required to perform work in areas out of sight or in isolated locations will be provided with suitable means of communication to call for help in case of an emergency.

Radio use may be an alternative to communication in areas where cell phone reception is not an acceptable means of communication due to the work area. If this method is used, the crew in the work area must identify the location of the nearest cell phone communication area for contact to emergency services if necessary.

In Case of Emergency

Initial Contact by Cell Phone:

- The affected workers shall notify the nearest supervisory personnel carrying a cell phone.

- The Supervisor shall decide as to the severity of the injury and the level of emergency assistance, if required, by outside Emergency Medical Services (EMS) agencies.

Notification for DEN EMS Assistance:

- DEN Airport has its own local EMS services that can respond more quickly than calling 911.
- The Supervisor shall call **303-342-4211 for DEN EMS** directly on their cell phone
- The Supervisor shall ensure that they identify to the dispatcher the specific location of the incident utilizing the Site Specific Emergency Access Points (Appendix A4).
- The Subcontractor Supervisor will arrange to have clear access for emergency vehicles into the work area near the designated access points.
- If the Supervisor is unable to get the injured employee to the access point, 4 wheel drive vehicle access or a clear walking path will be identified to get emergency personnel to the access point. Access Points will be the primary extraction location for all personnel emergency contact.
- Safety Personnel or the Supervisor shall ensure that the rest of the field supervisors are made aware of the emergency so that control of the situation can be initiated and maintained.
- A designated Subcontractor representative will meet EMS personnel at the access point and escort them to the scene of the emergency (if appropriate).

303-342-4211 Call Procedures:

The following call procedures are very important for managing the emergency at hand effectively.

- Stay Calm – Speak slowly and clearly
- Identify WHO you are
- Describe WHAT has happened
- Describe WHERE you are located
- Indicate WHAT kind of assistance is needed
- Do not hang up until instructed to do so by the 911 operator

Additional Contacts:

Immediately after emergency services are summoned, the following persons must also be notified of the emergency (See Appendix A3)

- DBJV D&C Project Director
- DBJV Construction Manager
- DBJV D&C SE Manager

4. Initial Responses to Emergency Situations

The most important thing in handling emergencies is protecting personnel from initial or further harm. The immediate control and correction of unsafe conditions or the rescue of the injured personnel must take place only if these activities do not seriously endanger the rescuer. The rescuer may become part of the problem instead of part of the solution if they become injured. Exposures to falls, crossing active highways, or entry

into suspect confined spaces are examples of rescue activities that frequently turn rescuers into victims themselves.

If the scene of the incident is reasonably safe, immediate action should be taken to prevent further harm from taking place. It is important however, that persons only perform operations for which they have received specific training. Extinguishing fires, performing first aid, stopping traffic, and entering confined spaces are examples of activities that require specific training to perform. Training required to ensure everyone conforms with the EAP will be outlined in the Subcontractor Safe Start Document (Appendix B in the D&C HSMP)

5. Handling Specific Emergencies

5.1 . Bodily Injury (Serious or Fatal)

- Obtain immediate and adequate treatment for all injured persons.
- Secure accident site to prevent risk of further injury.
- Minimize disruption to remaining work.
- Retain worker and owner confidence in our operations.
- Document the events.

When required by Federal OSHA CFR Part 1904.8 and or state OSHA regulations, accident will be reported to OSHA by the D&C SE Manager.

Injury to DBJV Employee

In the event of a death or serious injury of a DBJV employee, the Project Director shall:

(A) Determine where the injured employee is being taken.

(B) Determine general cause of incident (fall, electrocution, etc.).

(C) Inform the spouse or other family member in person of the accident and appoint a project team member to assist in any manner possible in making calls or handling arrangements. In the absence of the Project Manager, the Project Superintendent shall assume this personal notification responsibility.

(D) Every assistance shall be provided to the employee's family. Contact should be maintained with a relative or close friend of the spouse or family member. Work with Risk Management to ensure appropriate insurance benefits are processed in a timely, hassle-free manner.

Injury to Subcontractor Employee

In the event of the death or serious injury of a subcontractor employee, the Project Manager shall contact the subcontractor's on-site or home office manager, and advise said person of all information then known regarding the identity of the employee, the time of the accident, the nature of the injuries, and the medical facility, if any, to which the employee has been taken.

5.2 Property Damage

1. Structural Collapse or Damage to Major Equipment, Including Cranes and Hoists.

- Secure accident site to prevent risk of further damage or injury to persons.

- Maintain worker and owner confidence in our operations.
- Minimize disruption to remaining work.
- Document the events.

2. Fire

- Dial the emergency number for the fire department
- Suppress fire and prevent re-ignition.
- Provide immediate and adequate treatment for all injured persons, acting within scope of training.
- Minimize disruption of Owner's operation.
- Minimize disruption to remaining work.
- Secure accident site to prevent risk of further injury or damage.

3. Sabotage

- Obtain immediate and adequate treatment for all injured persons.
- Minimize disruption to remaining work.
- Minimize disruption of Owner's operation.
- Retain worker and Owner confidence in our operations.
- Secure site to prevent risk of further injury or damage.

5.3 Environmental Incidents

1. Toxic Gas

- Obtain immediate and adequate treatment for any injured persons.
- Minimize risk of exposure to persons or property.
- Minimize disruption to remaining work.
- Minimize disruption of Owner's operation.
- Retain worker and Owner confidence in our operation.

2. Other Hazardous Material

- Contain spill and minimize exposure to persons or property.
- Minimize disruption to remaining work.
- Minimize disruption to Owner's operations.
- Retain worker and Owner confidence in our operations.

MHS does not respond to the hazardous material releases of our subcontractors, or other sources of material releases without a written plan and appropriate training and/or supervision by a qualified person authorized jointly by a MHS safety representative and the Director of Operations.

5.4. Additional Emergency Event Planning

Severe weather (Flooding, tornados, hurricanes, wind, etc.) will be dealt with as per the procedures set out in the DEN Emergency Plan.

6. Site Evacuation

The need may arise to call for an evacuation of the work area surrounding an incident, and perhaps the entire site. This will serve the dual purpose of removing site personnel in an orderly fashion from dangerous conditions and to enable us to count all personnel to determine if anyone is missing (and possibly injured and unable to self-rescue).

The need to evacuate shall be determined by the Subcontractor Supervisor or the Safety Coordinator (or alternates as appropriate).

See Appendix A-1 for an emergency response flowchart

6.1 Evacuation Alert

- The Evacuation Alert will be communicated by the use of Cell phone or contacts from the Subcontractor Supervisor.

6.2 Site Evacuation Instructions

- Any specific instructions will be delivered by cell phone to all affected Subcontractors and work crews.
- Upon receiving the Evacuation Alert:
    - Walk to the closest access point.
- Routes of travel from work areas to the access points must be chosen based on:
    - Designated access point locations
    - Location of the specific emergency
    - Prevailing wind direction. Stay crosswind and upwind if possible.
    - The shortest travel distance to minimize driving distance.
    - The safest driving route. Keep to well-traveled roads if possible.
    - Clear and well maintained walking path of the shortest route to the access point.
- Before leaving the work area:
    - No equipment will be allowed to operate after the Evacuation Alert has been sent out. Turn off all equipment.
    - All generators, welding units, and oxyacetylene cutting rigs and compressed gas cylinders must be shut down/turned off.

6.3 Evacuation Access Points

All Subcontractors shall be designated duties as follows:

- All contractor, subcontractors, and office coordinators shall provide “head counts’ and unaccounted for personnel to the Safety Coordinator.
- Personnel verification shall be made available to the Safety Coordinator based upon:
    - Daily crew rosters or time sheets (dependent upon size of contracted workforce)
- Site management and office personnel shall be included in the above rosters.

- All Subcontractors shall verify personnel head counts and report results to the Safety Coordinator.

6.4 Unaccounted for Personnel

- Personnel that cannot be verified as having left the site shall be contacted by the Safety Manager ASAP through their company business office.
- The Safety Coordinator shall request EMS personnel to re-enter the emergency area to search for and locate any person(s) believed to be in need of assistance when there is a life threatening emergency event.

6.5 All Clear – Return to work directions

- The all clear signal will be issued through mutual agreement between the DBJV and DEN after a thorough analysis of the situation and consultation with police and fire authorities.
- No personnel will be allowed to leave the access point to return to their work area until the all clear signal has been given.

7. First Aid

7.0 Purpose

First aid services and provisions for medical care shall be made available for every employee. First Aid/CPR and Bloodborne Pathogens training shall only to be performed by qualified and certified individuals. Employee's that take part in the training are not compensated for performing any First Aid on site and retain the right not to perform First Aid if they choose to do so or if the required Personal Protective Equipment is not available. In all cases, employees who are trained in First Aid/CPR and Bloodborne Pathogens are required to follow the required Standards of Care as set forth in their training program. First Aid care should also be performed in strict compliance with laws and regulations as set forth in the CPR and First Aid Program and Bloodborne Pathogens Standard and in compliance with this program. Employees should not be considered as First Aid Providers until they have completed and received certification for both the required programs.

Applicable Regulations OSHA 29 CFR 1926.50

7.1 First Aid and CPR Instructor Requirements

Instructor Requirements

- The Safety Department shall be a trained First Aid/CPR and Bloodborne Pathogens Instructor.
- All training shall be conducted in accordance to the accepted Standards of Care.
- The Safety Department shall maintain certification and renew annually.
- The Safety Department shall attend any courses required by Medic to keep fully versed in accepted Standards of Care and Procedures.
- The Safety Department shall maintain all training records and shall keep records of training for 3 years.

- The Safety Department shall comply with all Medic Certification and Record Procedures. First Aid Attendant Requirements.
- Each crew shall have, at all times, 1 employee trained in First Aid/CPR and Bloodborne
- Pathogens.

7.2 Requirements for Medical Services and First Aid

General

- At the commencement of each Project, provisions shall be made in the Emergency Action Plan for prompt medical attention in case of injury or illness. This shall include, but not be limited to, contact details and maps to the nearest clinic or hospital and communication systems in the event of a first aid emergency.
- Telephone numbers shall be posted on all sites for physicians, hospitals or ambulances. First Aid Station.
- Each site shall have a designated First Aid Station complete with, but not limited to: a fully stocked first aid kit in accordance with ANSI-Z308.1-1978; an eye-wash station capable of at least a 15 minute flush; running water, both hot and cold; and CPR Resuscitation Masks and Non-Latex Gloves as PPE for First Aid Providers.
- Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses is prohibited in the First Aid Station.

First Aid Supplies

- First aid supplies shall be easily accessible when required.
- Each site shall have at least one First Aid Kit. An evaluation of the workplace shall take place to determine the need for further kits according to location, size, number of employees' etc. This evaluation should also determine any additional types and quantities of first aid equipment and supplies in the first aid kits.
- Contents of the first aid kit shall be checked prior to initial use and thereafter on a weekly basis to ensure that any expended items are replaced.
- The contents of the first aid kit shall be placed in a weatherproof container with individual sealed packages for each type of item.

7.3 Exposure Determination

This Program requires that no employee shall render first aid unless they have been trained and certified as completing the First Aid/CPR and Bloodborne Pathogens training sessions. As such, those who have been designated as First Aid Providers are the only employees who have the potential to be exposed to blood or OPIM and, therefore, are required to comply with the provisions set forth in this program.

Methods of Compliance

- All blood and fluid is to be considered potentially hazardous material and, as such, Body Substance Isolation (BSI) techniques shall be observed to prevent contact with blood or OPIM.

Engineering and Work Practice Controls

- Engineering and work practice controls shall be used to eliminate or minimize employee exposure.
- Where there can be a reasonably anticipated exposure of employees to infectious material a written exposure control plan shall be implemented.
- A copy of this plan shall be made available upon request
- Engineering Controls shall be examined, maintained and replaced (as required) on a weekly basis to ensure continued effectiveness.
- Hand washing facilities (running water, both hot and cold) shall be available at the First Aid Station. As soon as the First Aid Provider has treated the victim: PPE should be removed; hands and any skin that has come into contact with blood and/or OPIM should be washed with soap and water. If the First Aid Provider treats the victim at the site of the incident, PPE is to be removed at that location, antiseptic towelettes shall be used immediately and then the Provider is to wash their hands at the First Aid Station.
- Where hand washing facilities are not feasible, then appropriate antiseptic hand cleanser in conjunction with cloth/paper towels or antiseptic towelettes must be provided.
- Reusable sharps containers shall be available. These containers shall be: puncture resistant; labeled or color-coded (red or orange red); and leak proof on the sites and bottom. Reusable sharps that are contaminated with blood or OPIM shall not be stored or processed in a manner that required Providers to reach by hand into the sharps container. If outside contamination of this container occurs then it should be placed within a second container that complies with the above requirements.
- The first aid provider shall not eat, drink, smoke, apply cosmetics or lip balm or handle contact lenses in the First Aid Station or in the work area where there is a reasonable likelihood of occupational exposure.
- All procedures involving blood or OPIM shall be performed in such a manner to minimize splashing, spraying, splattering and generation of droplets of these substances
- Hepatitis B vaccine shall be made available to all employees that have occupational exposure at no cost to the employee
- Records for each employee with occupational exposure must be maintained for at least the duration of employment plus 30 years.

Personal Protective Equipment

- PPE shall be checked and maintained to ensure availability and quantity on a weekly basis and shall be stored in an area that is free from potential contamination. PPE will be provided at no cost to the employee
- First Aid Providers shall always wear PPE prior to attending to any victim(s). If the PPE becomes compromised during treatment, then the Provider should replace immediately.
- Appropriate personal protective equipment shall be available, in a variety of sizes, at the First Aid Station and in First Aid Kits. This includes, but is not limited to: gloves; resuscitation devices; face shields or masks and eye protection; and gowns. Hypoallergenic gloves, glove liners, powder less

gloves, or similar alternatives shall be readily accessible to those Providers who are allergic to Latex. All PPE shall not permit blood or OPIM to pass through to or reach the Provider's skin, eyes, mouth, other mucous membranes or work clothes.

- PPE is to be considered as single-use and shall be disposed of immediately in an appropriate container following care to the victim(s) and prior to clean up of the work site.

Housekeeping

- All equipment and environmental and working surfaces shall be decontaminated after contact with blood or OPIM. Acceptable decontamination solution will either be an approved cleanser or a 10% bleach solution. The bleach solution should be freshly made daily and should not be kept for more than 24 hours.
- Contaminated work surfaces shall be decontaminated as soon as treatment has been provided.
- Bins, pails, cans and similar receptacles intended for reuse which house contaminated materials shall be inspected and decontaminated as soon as feasible upon visible contamination.
- Broken glass which may be contaminated with blood or OPIM shall not be picked up directly by hands but by mechanical means, such as brush and dustpan or tongs.
- Reusable sharps that are contaminated with blood or OPIM shall not be stored or processed in a way that requires the Provider to reach by hand into a container where they are stored.
- All equipment and surfaces shall be cleaned and decontaminated after contact with infectious material

Regulated Waste

- Contaminated sharps shall be discarded immediately or as soon as possible in containers that are: closeable; puncture resistant; leak proof on sides and bottom; and labeled or color-coded (red, red-orange).
- The containers shall be stored in the First Aid Station, and shall be maintained in an upright position throughout use. Its contents shall be removed regularly and will not be allowed to overfill.
- When removing the containers from the First Aid Station, the containers shall be closed prior to removal to prevent spillage of contents during handling, storage, transport or shipping. If there is leakage, then the container will be placed in a secondary container.
- All other blood or OPIM waste shall be placed in the appropriate waste storage at the First Aid
- Station. There will be two forms of containment:
- A garbage can shall be available that is closeable, constructed to contain all contents and prevent leakage of fluids during handling storage, transport or shipping, and color coded or labeled. This can is to remain closed at all times and is subject to the terms set forth in this program.
- All waste inside the garbage can shall be housed in the color coded and labeled waste biohazard bags. Prior to removal from the garbage can, this bag should be closed.
- Under circumstances in which differential between body fluids is difficult or impossible all body fluids will be considered potentially infectious

Laundry Provisions

If, during the course of providing first aid care, there is a compromise in the PPE and the First Aid

Providers clothes become contaminated, the following provisions apply:

- PPE shall be used when handling contaminated laundry, by means of protective gloves and other appropriate PPE.
- Contaminated laundry shall be removed either by the rolling method or shall be cut from the
- Provider, whichever allows for minimum agitation.
- Contaminated laundry shall be bagged at the location into labeled or color-coded bags and will be collected by Clean Venture Total Hazardous Waste Management Services.

Exposure

- A report of any exposure incident must be made immediately to the Safety Department and/or
- Project Manager.
- Following this report, the employee shall have a confidential medical evaluation and follow-up made available to him/her in compliance with 29 CFR 1910.1030.
- As part of the medical evaluation and follow-up, the following information shall be provided to the Healthcare professional who is responsible for the employee's Hepatitis B vaccination:
    - A copy of 29 CFR 1910.1030;
    - A description of the Employee's duties as they relate to the exposure incident;
    - Documentation of the route(s) of exposure and circumstances under which the exposure occurred;
    - If available, results of the source individual's blood testing; and
    - All medical records relevant to the treatment of the employee.
- Within 15 days, DBJV shall obtain and provide the employee with a copy of the healthcare professional's written opinion. The information shall be limited and comply with 29
- CFR 1910.1030.
- All medical records shall be maintained in accordance with OSHA Recordkeeping requirements.

Insect, Plant, and Animal Exposure

- Long pants, a shirt with a 4 inch sleeve and a study leather work boot are normal attire for working areas. If other exposures warrant, further clothing protection like long sleeves and gloves will be worn.
- Waders will be used when entering wetland areas along with other water protection devices.
- All clothing should be washed separately in hot water with detergent.
- Barrier skin creams may be used depending on the hazards. These creams should be washed off and re-applied throughout the day.

- Daily cleaning of tools with alcohol or soap and water shall take place.
- Do not burn plants at any time due to potential hazards and fire exposures.
- Use appropriate insect repellent when insects are in the work area.
- Do not provoke insects or animals. Insects and Animals will attack when feeling threatened.
- If an employee is allergic to any items, additional precautions shall be discussed according to the medical treatment for such allergy.
- Each employer shall train all employees in prevention methods associated with environmental hazards.
- First Aid should be applied as training provides to ensure no further action is necessary. First aid would involve but not be limited to:
    - Removing employee to a safe area.
    - Washing with soap and water.
    - Ice or an Ice Pack on the affected area.
    - Itching cream.
    - Antibiotic cream.

7.4 Hazard Communication

Labels

- Warning labels shall be affixed to all containers used to store or transport blood or other potentially infectious materials. Red bags or red containers may be substituted for labels.
- All Labels must include the Biohazard Legend.
- All labels will be orange or orange-red with the lettering and symbols in contrasting color.
- All labels will be affixed as close as feasible to the container by whatever means that prevents their loss or unintentional removal.

Information and Training

- First Aid and CPR training shall be given to all First Aid Provider candidates before initial assignment. This training certificate will be valid for 2 years after the class has been successfully completed.
- Bloodborne Pathogens training shall be given to all First Aid Providers on commencement of their completion of the First Aid/CPR training course and thereafter, on an annual basis.
- Additional training, for First Aid, CPR and/or Bloodborne Pathogens will take place if there is any modification of tasks or procedures or institution of new tasks or procedures that affect the employee's occupational exposure.
- All training shall be in compliance with the National Safety Council First Aid, CPR and
- Bloodborne Pathogens training curriculum.
- Bloodborne Pathogens training shall be provided at the time of initial assignment and within 1 year of previous training

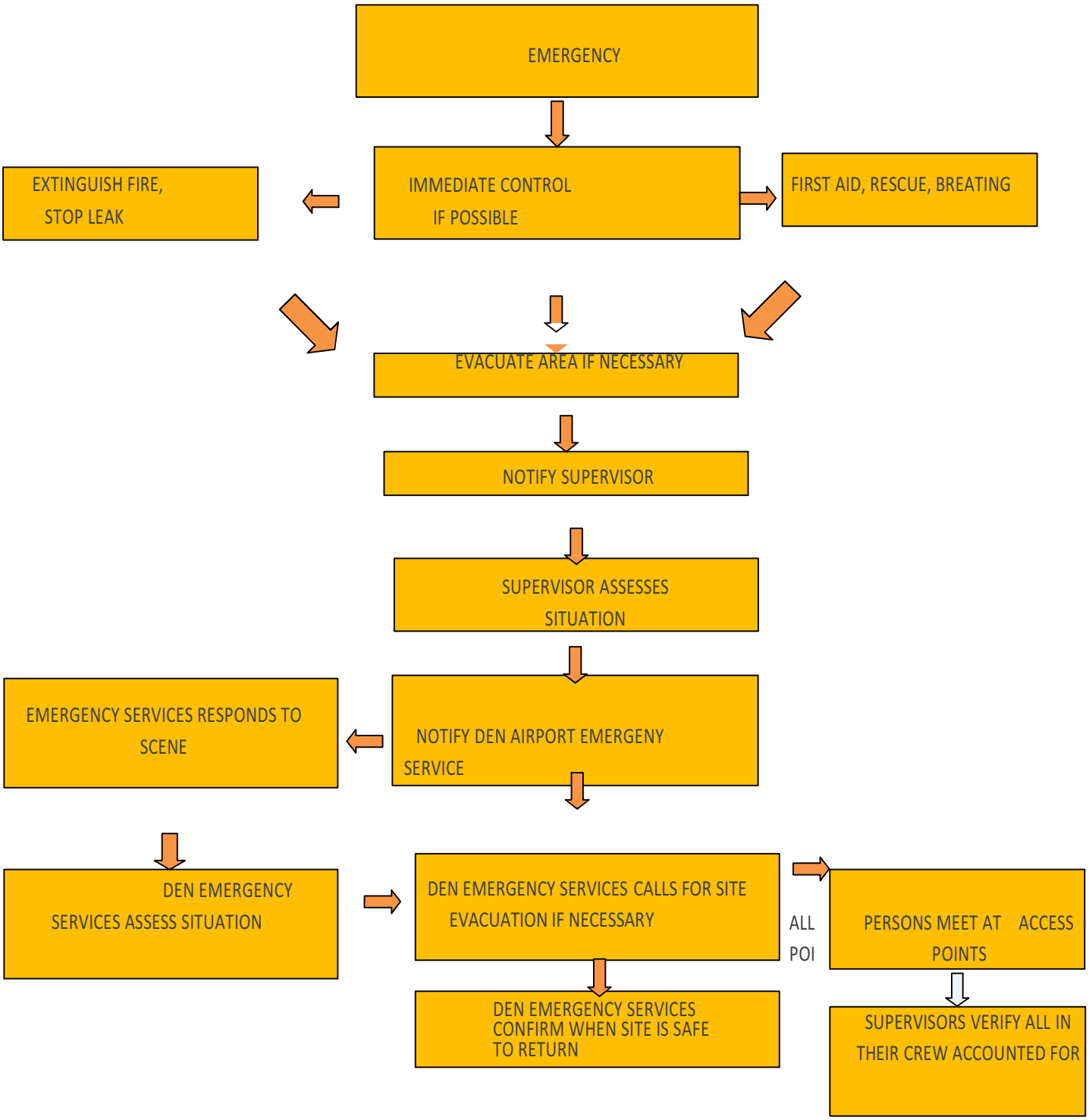
8. Training Requirements

- All employees shall be trained in the above procedures and safe work practices necessary to perform their work as part of DBJV Project Orientation.
- Training shall also be completed as the site conditions warrant and/or the current plan changes.
- Training shall include instruction in hazards related to potential fire, explosive, and chemical or toxic release. The training, where necessary, will cover hot work and confined space permit requirements.
- The training will be part of a job hazard analysis, SDS information will be reviewed for the related hazards, and controls related to the work activity and will include emergency provisions for unplanned spills or releases.
- All training shall be documented as follows:
- Site orientation to emergency action plan
- Site specific orientation training will cover at a minimum Hazards, Controls, Access Points, and Emergency communication and reporting

9. MEDIA/NEWS CREWS

Media is only allowed on the project site if accompanied by the Owners' Representatives. If any Media arrives following an incident, the Project Manager should be notified immediately, and the guard personnel at each access gate will not give them access onto the job site. Any media requests for information need to be referred to DEN. DBJV employees will not try to cover any cameras, as it may appear that there is something to hide.

APPENDIX A1 Emergency Action Plan Flowchart



APPENDIX A2

FIRST AID GUIDE FOR TEN COMMON CONSTRUCTION SITE INJURIES

The following general guidelines are intended to be a quick reference guide for common injuries found on Project sites. It is not a substitute for formal training in first aid. DBJV requires first aid training for all personnel expected to perform first aid as indicated in the Emergency Action Plan. Training can be arranged through the Safety Coordinator.

Bleeding and Wounds

- Put clean cloth, gauze, or your gloved hand over wound, and apply firm, steady pressure. Seek medical aid if bleeding is severe.
- Elevate the injured arm or leg above the level of the injured individual's heart if possible.
- Continue to apply pressure by securing the cloth with a bandage. Do not lift the cloth from the injury to check the bleeding. Be sure the bandage is not so tight that it cuts off circulation.
- Never use a tourniquet unless you cannot control severe bleeding and life is threatened. Tourniquets may result in subsequent medical amputation!
- Take steps to prevent shock (see Section 10).

Broken Bones

- DO NOT move the injured individual unless in immediate danger.
- 2 DO NOT move the injured individual's body parts or try to reset the bone.
- Control bleeding (see Section 1).
- Cover any protruding bone with a clean, moist dressing.
- Take steps to prevent shock (Section 10).
- Send someone to call for help as soon as possible.

Burns

Chemical or compressed gas burns:

- Flush away all traces of chemicals with water while removing all contaminated clothing from the injured individual.
- Cover burn loosely with clean, dry cloth.
- Take steps to prevent shock (see Section 10).
- Send someone to call for help as soon as possible.

Heat Burns:

Send someone to call for help as soon as possible.

- Cool the burn.
- Immerse burned area in cool water or gently apply cool compression until pain is relieved. Bandage with clean, dry dressing.
- Do not break a blister if one forms. Do not use ointments or remove embedded clothing.

Electrical Burns:

- Care for life-threatening emergencies first!
- Send someone to call for help as soon as possible.
- Cover burn loosely with clean, dry cloth.
- Treat for shock (see Section 10).

Electric Shock

- Send someone to call for help as soon as possible.
- DO NOT touch the injured individual until power has been disconnected.
- Unplug or switch off source of electricity if possible.
- If the injured individual is not breathing and has no pulse, begin CPR.
- If the injured individual has a pulse but is not breathing, begin rescue breathing.

Eye Injury

Chemical:

- Hold the eyelids apart and flush the eyeball with running luke warm water until ambulance arrives. Be careful not to let run-off water get into other eye.
- Place a gauze or cloth pad over injured eye and secure with a bandage.

Cut, Scratch, or Embedded Object:

- Place a gauze or cloth pad over injured eye and loosely secure with a bandage.
- Do not try to remove an embedded object.
- Get to an eye specialist or emergency room immediately.

Head / Neck / Back / Pelvic Injury

- DO NOT move the injured individual unless in immediate danger.
- Stabilize the injured individual's head and neck as you found them by placing your hands along both sides of the head.
- Send someone to call for help as soon as possible.
- Keep the injured warm, but not hot, using blankets or clothes.

Heat Stroke / Heat Exhaustion

Heat stroke can be life threatening! Signals can include a body temperature of 105° or higher, dry, hot, or flushed skin, rapid pulse, unconsciousness, and lack of perspiration.

- Get the person out of the heat and into a cooler place and call for help.
- Place person on their back, with feet up.
- Remove or loosen their clothing.
- Cool person by applying cloth-wrapped cold packs or wet towels.
- Treat for shock (see Section 10).

Heat Exhaustion signals include near-normal body temperature, pale, clammy, cool skin, weakness, headache, nausea, dizziness, thirst, and cramps.

- Perform steps 1-5 under heat stroke.
- If the person is fully conscious and can tolerate it, give him/her about 4 oz. of water to drink every 15 minutes until help arrives.

Frost Frosbite

Symptoms include initial pain in area affected, followed by numbness. Skin in area affected may be grayish-white, hard, and partially frozen.

- Get person into a warm place.
- Put the frozen parts in warm but not hot water (100°-105°). Handle them gently but do not rub or massage.
- If person is alert, give them a warm drink that does not have alcohol or caffeine.
- Loosely bandage the affected area and elevate. If the toes or fingers are affected, put dry, sterile gauze between them after re-warming them.
- Seek medical attention as soon as possible.

Severed Body Part

- Save the severed body part. Put it in a clean plastic bag and then in a container filled with ice.
- Send it with the victim to the hospital. See bleeding and wounds (see Section 1).

Shock

Shock can be life threatening! Signals include cold sweat, weakness, irregular breathing, chills, pale or bluish lips and fingernails, rapid weak pulse, and nausea.

- Send someone to call for help immediately.
- 2. Do not give the injured food or drink.
- Lay injured individual on their back, but do not move them if they have leg or back injuries. If injured individual is unconscious, has severe injury to the lower face/jaw, or vomits, lay them on their side and be sure they are getting air.
- Keep injured individual warm, but not hot, using blankets or clothes.
- Raise injured individual's feet and legs with a pillow unless painful or severe injuries are suspected

APPENDIX A3:

DBJV Project

EMERGENCY CONTACT NUMBERS		
DBJV	Name	Contact Number
D&C Project Director		
Construction Manager		
D&C SE Manager		

Emergency Services		
DEN FIRE - POLICE - AMBULANCE	**303-342-4211**	

APPENDIX A4:

Site Specific Emergency Access Points

Access Point	Area	Location Plan/ Street Address

APPENDIX B. DBJV's Subcontractor safe start document

DBJV

SUBCONTRACTOR SAFE START DOCUMENT

Project:_____

SUBCONTRACTOR:_____

DATE:_____

Meeting Conducted By:_____

Reviewed By:_____

NOTE: This page of the document must be signed and the entire document brought to the Safety Start-Up Meeting.

Safe Start Record of Meeting

This document is a record that a safe start meeting occurred with the following attendees. This document is to be kept with all other project specific safety records.

DATE:_____ LOCATION:_____

NAMES OF ATTENDEES (PRINT NAME)	SIGNATURE

Agenda Items completed:

Subcontractor Requirements

Subcontractor Training Records

Subcontractor Contact List

Subcontractor Disciplinary Action

Other Requirements

(Site specific subcontractor crew orientation)

Completed By:

_____

_____

_____

_____

_____

TABLE OF CONTENTS:

Section 1

DBJV, Subcontractor

Safety Requirements

DBJV SUBCONTRACTOR GENERAL SAFETY

REQUIREMENTS

Providing an incident-and injury free work environment is the Subcontractor's number one priority and responsibility. The following Safety requirements are minimum requirement for all personnel on this project. They are not intended to be all inclusive. In the case of any conflicts between these requirements and those in either the Comprehensive Agreement or the Health, Safety, and Plan, the most stringent standard applies.

- DBJV Health and Safety Program overview - Health and Safety Program (HASP) is an additional document that may be sent regarding specific health and safety information.
- A Work Plan will be provided to explain how an activity will be accomplished. It must must be completed for all work on the project
- A "Job Hazard Analysis" (JHA) must be completed by the subcontractor to cover each specific scope of work. A contractor cannot perform work without an approved plan.
- Subcontractor must review and be familiar with the "Site Specific Emergency Plan" for access points and other emergency procedures. This document is part of the project safety documentation (daily sign in may be required).
- A Subcontractor shall identify a person responsible for safety for all subcontracted work prior to the start of work. A letter showing competence (see letter template in Section 2) to perform such a role shall be submitted in writing to the Safety Coordinator and Safety Manager for approval (a minimum of OSHA 10 - 30 Hour required). When 40 or more subcontractor employees are on a project, a full time safety person shall be provided by the subcontractor and that appointed subcontractor employee shall only perform Safety duties as part of the project. The requirement for a fulltime safety person may change based on the scope and risk associated with a given scope of work (40 employees is a minimum requirement).
- A Copy of the Subcontractor Safety Program is required and will be retained on file by DBJV.
- The Subcontractor is to provide a completed safety performance prequalification form
- (see Appendix B-1).
- Drug and Alcohol – As per contract, "Contractor is strictly prohibited from the use of Illegal Drugs or Alcohol on any job sites or premises".
- Subcontractor Safety Contacts (Complete Section 3 and return to DBJV).
- Subcontractor's employees and site management must attend project site meetings as requested:
    - Morning Huddles
    - Scheduling
    - Subcontractor safety meetings
    - Site orientation
- Hazard Communications – Chemical Inventory List is required to be submitted with accompanying Safety
- Data Sheets.
- Construction Safety Training – Subcontractor employees must be trained in the following applicable areas as is required by OSHA/MSHA or any other regulatory agency having jurisdiction to the subcontract work area. The subcontractor must maintain their own documentation. Examples of training and required documentation are as follows:
    - Mobile equipment task training

- Rigging certification documentation
- Signal Person documentation
- Powdered actuated tools
- First Aid/CPR
- Respiratory
- Fall protection
- Fire extinguishers
- Ladders
- Hazard Communications
- HAZWOPER
- Work zone safety – Flagger – ATSSA TCT, TCS ,
- Lockout/Tagout Electrical / GFCI
- Welding
- Power tools / Hand tools

** Documentation of training must be provided to DBJV when applicable

- A site orientation shall be conducted for all new employees on site specific requirements before start of work. The Emergency Action Plan (EAP) site specific requirements shall be covered as part of the orientation program.
- Weekly Toolbox Talks – Subcontractors should be conducting weekly safety-training meetings with their employees while performing work on DBJV Project. Copies must be submitted to Safety Coordinator weekly.
- Accident/Incident or Near Miss Reporting - Project Teams must be notified immediately of all accidents/incidents or near misses on the Project. A completed written accident report must be submitted to DBJV Safety Coordinator within 8 hours. A monthly summary report shall be submitted to the Safety Coordinator (see Appendix B-3).
- Review of Disciplinary Action Policy (see Section 4).
- Weekly each subcontractor crew will fill out and submit the Contractor Safety Inspection Form or equivalent to DBJV Safety (See Appendix B-6).
- At least annually, and prior to each demobilization, a copy of the OSHA 300 log shall be provided to DBJV ' Safety Coordinator.

DBJV Health and Safety Requirements

Subcontractor agrees to pursue its work in a safe manner at all times and take all necessary precautions to prevent injury and damage to all employees on the Project, the public and the Project site. Subcontractor shall comply with all laws, ordinances, codes, rules, regulations, and standards relative to safety and the prevention of accidents. Subcontractor shall also comply with all provisions and requirements of DBJV safety standards and the Occupational Safety and Health Act, including any and all amendments and supplements to such Acts, all other standards referenced herein or more stringent Federal, State or Local requirements as are applicable in the performance of the Subcontract Work.

DBJV specific safety requirements include Items 1 thru 16 above plus the following additional requirements:

- 100% ANSI Z87 approved safety glasses to be worn while onsite

- Gloves shall be provided as per OSHA and/or will be required to be worn 100% of the time due to a site specific or client requirement
- Seatbelts must be worn at all times
- No riding in rear of pick-ups
- Life jackets are mandatory when working on, over, or near water. Check with Safety Coordinator for clarification if necessary.
- First aid/CPR required (at least one employee at all times)
- Work Attire – Hard hats, approved eye protection, long-pants covering the legs and ankles, t-shirts covering the shoulders with at least a 4" sleeve.
- Foot Wear – Hard-soled, 6 inch work boots at minimum. Steel toe and metatarsals when required by OSHA such as operating a jack hammer, tamper etc.
- No sneakers or walking shoes will be allowed
- Electrical – All electrical on Project will be on temporary GFCI. If working in an area with permanent power, employees must be utilizing GFCI pigtails.
- 100% Fall Protection required while working 6 feet and above. This may include double lanyards, retractable lanyards, etc. Fall protection plan shall be submitted prior to initial start date and shall include a rescue plan.
- Blasting Procedure – Only a Licensed Blaster shall be in charge of and responsible for the preparation of, and the firing of, a blast. A blasting plan must be submitted for approval according to State/Local Laws. If blasting will be conducted the DBJVblasting procedure will be added in the subcontractor contract.
- Work Zone Safety – Comply with State/Local Law requirements. Subcontractor employees working in a work zone/and or adjacent to vehicular traffic shall wear at a minimum a class 2 garment or a higher classification where federal, state or client requirement supersede the minimum class 2 requirement.
- Flagger Class 3 garments
- Utility 1 Calls – Subcontractor must call the appropriate State Specific Body before you dig, drill or blast, for example Pennsylvania = PA 1-Call, Maryland, DE and = Miss Utility.
- Subcontractors must adhere to appropriate state law regarding digging, drilling, or blasting within utility tolerance zones. For example, in PA, always hand dig or use other soft dig technology when within 18" on either side of any marked line. In DE, always hand dig or use other soft dig technology when within 24" on either side of any marked line.
- In the event of an OSHA Compliance Officer showing up on the Project, the subcontractor is required to immediately notify the Project Manager and/or Project Superintendent for the job.

- Ladders:
    - When an employee's feet break the plane of a height of 6ft when working on an a frame ladder, fall protection requirements will be implemented
    - Fall protection PPE required on access ladders over 12ft above or below ground

-
- Subcontractors will be encouraged to find other working practices other than the use of ladders

- Fall protection and Tie off are mandatory when operating scissor lift
- Subcontractor to ensure all of the above are communicated to second and third tier subcontractors
- Permit requirements – Hot work, confined spaces
- Carb saw (In line pipe cutting not allowed without permission)
- Stop work authority requirements
- Other site safety requirements as per contract or client to be covered (Appendix B-2).

Signature of persons attending this meeting indicates that they have read and understood the above DBJV Requirements.

PRINT NAME	COMPANY	SIGNATURE	DATE

Section 2

Subcontractor/ Employee Training Records

SUBCONTRACTOR TRAINING CHECKLIST/RECORD

SUBCONTRACTOR EMPLOYEE NAME:_____

Please review and sign all of the following conditions. For those that do not apply to your scope of work, write N/A.

_____I have received Hazard Communication Training as required by the OSHA Standard 29 CFR1926.59. I am in possession of the HazCom Manual, which includes the Company Program, Hazardous Chemical Inventory List and Safety Data Sheet (SDS's).

_____I have received Fall Protection Training as required by the OSHA Standard Subpart M.

_____I have received Ladder Training as required by the OSHA standard 29 CFR 1926.1060. I have been trained to recognize hazards related to ladders and know the procedures to follow to minimize these hazards.

_____I have received Excavation Training as required by the OSHA Standard Subpart P.

_____I have received Scaffold Training as required by OSHA Standards Subpart L.

_____I have received Fire Extinguisher Training.

_____I have received Work Zone Safety/Procedure Training. , etc.)

_____I have received Safety Training regarding assigned tasks in accordance with OSHA regulations.

Print Name _____Title/Trade_____

Signature_____Employee #_____

TRAINER:

** I hereby certify that the above named employee has been provided with the training/education as listed above:

Authorize Subcontractor Trainer's Signature_____ Title_____

SAMPLE LETTER

Date:

Subcontractor's Address:

DBJV Address

Attention:

Dear:

This will verify that (Subcontractor Name) employees who will work on DBJV Improvements Project have been trained and educated in the following areas of Safety and Health applicable to our work operation:

- Sample: Confined Space training, etc.

Sincerely,

Name:_____

Subcontractor Designated Party

Section 3

Safety/Competent Person Contact List

SAFETY/COMPETENT PERSON CONTACT LIST

Subcontractor Name (Company): _____

SAFETY CONTACT(S): Corporate vs. Site

Corp. Safety Contact Name	Title	Company Name	Address	Contact Number
Corp. Safety Contact Name	Title	Company Name	Address	Contact Number

Competent Person(s):

See Appendix C-1 for Competent Person Designation Form.

Name	Competent Areas	Company Name	Address	Contact Number

Section 4

Disciplinary Action

SUBCONTRACTOR DISCIPLINARY ACTION POLICY

Subcontractor's supervisor and employee safety violations for failure to comply with DBJV Health and Safety Program (HASP) and all other applicable safety policies will be presented with the following disciplinary procedure that may include your employee(s) discharge from the DBJV Corridor Improvements Project.

The following steps are an outline of DBJV progressive disciplinary action policy:

- First Offense - Written Warning.
- Second Offense - Immediate 3-day suspension from the DBJV Project.
- Third Offense – Permanent discharge from the Our project.

***DBJV reserves the right to immediately discharge any subcontractor employee(s) for failure to comply with the safety and health policies, namely in the case of negligence or in Immediately Dangerous to Life and Health (IDLH) situations without following the progressive procedure defined above.

Section 5

Appendices

Appendix B-1 - Subcontractor Safe Start Pre-Qualification Form

Company Name:_____

Owner:_____ Phone #: _____

Address: _____

EMR (Experience Modification Rate) Last 3 Years:

1) _____ 2)_____ 3)_____

ACCIDENT AND ILLNESS STATISTICS

Incident rates for last 3 years: (№ of incidents x 200,000/total man hours worked)

1) _____ 2)_____ 3)_____

How many man-hours has your company worked in each of the last 3 years?

1) _____ 2)_____ 3)_____

How many OSHA recordable injuries did your company experience in each of the last 3 years?

1) _____ 2)_____ 3)_____

Based on the above listed formula, what are your incident rates for each of the last 3 years?

1) _____ 2)_____ 3)_____

How many lost time accidents/days away from work accidents has your company experienced in each of the last 3 years?

1) _____ 2)_____ 3)_____

Has your company experienced a fatality in the last 3 years?

1) _____ 2)_____ 3)_____

OSHA Citations:

Has your company had a Federal or State Plan OSHA inspection within the last 3 years? Yes / No

If yes, how many of each of the following types of citations have you received?

Willful 1) _____ 2)_____ 3)_____

Serious 1) _____ 2)_____ 3)_____

Other 1) _____ 2)_____ 3)_____

Give brief description of each:

_____

_____

_____

_____

Does Your Company have a Drug Free Workplace Program? Yes / No

Does your company have a Written Safety Program? Yes / No

Appendix B-2 - Client or contract specific site safety requirements

(Blank sheet provided for all other site specific safety requirements as required by contract or by client that need to be addressed with the Subcontractor.)

Appendix B-3 - Subcontractor Monthly Safety Report

Subcontractor Name:

Contract Location:

Reporting Period: Month: Year:

This form must be submitted to DBJV Project Manager, Superintendent, or Safety Department no later than the 10th of each month. It is to be submitted even if no accidents occurred.

DIRECTIONS: Report OSHA recordable medical cases. Report number of OSHA recordable medical cases that had lost work days, and number of days away from word (do not count first day of injury). Carry Over Days are for a previously reported lost time case where the worker is still off work in this reporting period. Report number of OSHA recordable medical cases that had restricted or light duty work and the total number of days on restricted or light duty (do not count first day of injury). Carry Over Days are for a previously reported restricted or light duty case where the worker is still on restricted or light duty. Report number of first aid only cases for period as well.

	Man-hours Worked	First Aid Injuries	Recordable Injuries	Lost Time Injuries	Days Lost	Restricted Work Job Transfer Injuries	Days of Restricted Work Job Transfer
Month							
Year to Date							

Attach copy of employer First Report of Injury or OSHA 301 Report for each recordable injury case reported.

Person Making Report: _____ Phone Number: _____

APPENDIX C. FORMS

1. **Competent Person Designation Form**
   Reference pages:24,37
2. **Visitor Form**
   Reference pages: 25
3. **Work Plan**
   Reference pages:37
4. **Work Plan Review**
   Reference pages:37
5. **Job Hazard Analysis**
   Reference pages:34
6. **Daily Safety Assessment**
   Reference pages:43
7. **Medical Treatment Authorization Form**
   Reference pages:30
8. **Injury Investigation Report**
   Reference pages: 31,32
9. **General Liability Investigation Report**
   Reference pages:31
10. **Near Miss Communication**
    Reference pages:32
11. **Employee Written Warning**
    Reference pages:28
12. **Mobile Crane Check-In**
    Reference pages:76
13. **Power Line Close Proximity Permit**
    Reference pages:95
14. **Surface Penetration Permit**
    Reference pages:241
15. **Confined Space Permit**
    Reference pages:65
16. **Daily Excavation Check-List**
    Reference pages:107
17. **MPT Permit**
    Reference pages:254,262
18. **Access Plan/ Ladder Permit**
    Reference pages:136,225

19. **Crane Operator Designation**
    Reference pages:76
20. **Crane-Specific Qualified Person Designation**
    Reference pages:76
21. **Flagger Designation**
    Reference pages:258
22. **Operator Designation**
    Reference pages:175
23. **Electrical Inspection Verification**
    Reference pages:95,227
24. **Fall Protection Inspection Verification**
    Reference pages:116
25. **Fire Protection Inspection Verification**
    Reference pages: 119
26. **Scaffold Inspection Verification**
    Reference pages:213
27. **Rigging Inspection Verification**
    Reference pages:207
28. **Ladder Inspection Verification**
    Reference pages:146

Appendix C-1- Competent Person Designation

COMPETENT PERSON DESIGNATION

PROJECT:		GENERAL CONTRACTOR:	

CONTRACTOR:		EMPLOYEE:	

As Authorized Representative of the above named Contractor, I hereby designate the above mentioned Employee as a Competent Person in the areas I have indicated below.

The Occupational Health and Safety Administration (OSHA) defines a Competent Person as “one who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to workers, and who has authorization to take prompt corrective measures to eliminate them”. This can be fulfilled through training, qualification, certification, experience or any combination thereof.

Knowledge of ALL current local, state and federal requirements, regulations, standards, procedures and practices that are applicable to the encircled areas below is mandatory

COMPETENT PERSON IN THE FOLLOWING AREAS (please circle all that apply)							
Aerial Lifts	Confined Spaces	Cranes/Derricks	Demolition	Electrical	Excavations	Fall Protection	Fire Protection
Lock out/ Tag-out	Ladders	Respiratory Protection	Toxic and Hazardous Substances	Scaffolds	Underground Construction	Utilities	Welding/Cutting

Areas not listed above:

_____

_____

I, the Authorized Contractor Representative, understand that if at any point in the future this Employee loses this designation, is unable to fulfill the responsibilities of this role, is terminated or is removed from the Project, I will provide written notification to the DBJV Safety Department within 2 business days.

AUTHORIZED CONTRACTOR REPRESENTATIVE	DATE

EMPLOYEE ACKNOWLEDGEMENT OF THIS DESIGNATION	DATE

Please indicate if applicable:

☐ This employee is a supervisor

☐ This individual is an employee of a subcontractor to the Contractor under contract with DBJV.

Appendix C-2. Visitor Form

VISITOR FORM

DBJV is pleased to welcome you to this project. Because of the hazards and risks associated with any construction site, we require every visitor to the site to be alert for his/her own safety and to sign a written Waiver and Release absolving DBJV and others associated with this project of any and all responsibility in connection with all risks encountered at the site. While on the construction premises, please be on guard constantly and follow good safety practices, including but not limited to, the following:

- Hard-hats and safety glasses must be worn by all visitors at all times.
- All Visitors shall wear a Hard-soled 6 inch work boots at minimum.
- All Visitors shall wear long pants and a shirt with a minimum 4 inch sleeve.
- Class 3 traffic vest shall be worn at all times.
- Gloves are required to be worn 100% of the time while visiting the project.
- Seatbelts are to be worn at all times in moving vehicles. No riding in the back of pickup trucks
- Life jackets are mandatory when working on, over or near water
- All Visitors are to be escorted at all times while on the site.
- Be alert for changing conditions and ongoing construction activities while walking on the site.
- Be aware of uneven walking surfaces and extreme care shall be taken with each step.
- No firearms, drugs or alcoholic beverages are permitted on site.
- All warning signs and barricades must be obeyed.
- Do not stray from the approved path for ingress and egress.
- Do not enter areas with inadequate lighting.
- Be aware of and stay clear of any overhead hazards.
- Smoking is only permitted in designated areas.
- Do not lean on or reach beyond any handrails or barricades.
- Report any hazards to the Construction Manager prior to leaving the site.
- No written correspondence regarding any hazards observed on the site shall be written or forwarded after leaving the site unless previously agreed upon at the site.

WAIVER AND RELEASE

Name: Date:

Company:

Purpose of Visit:

In consideration of granting the undersigned permission to enter upon the premises at the Project and for other good and valuable consideration, I hereby waive and forever discharge DBJV, its officers, trustees, employees, and subcontractors on the Project (the "Released Parties") from and against any claim for damages that may arise due to injury to my person or property while on the project whether caused in whole or in part by any negligence, actions or inactions of the Released Parties. As a licensee, I assume the risk of all dangerous conditions on or about the premises and waive notice of the existence of any such conditions. I acknowledge the confidential nature of DBJV construction procedures and process and agree not to photograph, reproduce or divulge the same without expressed written consent of US DBJV.

I HAVE READ THE ABOVE AND AGREE TO SAME:

Visitor(s):

(Print Name) (Signature) (Date)

(Print Name) (Signature) (Date)

Appendix C-3. Work Plan

Work Plan

FOR

COMPANY:

CONTRACT NO:

CONTRACT NAME:

ACTIVITY:

	Written by:	Reviewed by:	Accepted by:
Signed			
Date			

Issue	Date	Description of Change	Change Introduced by	Change Accepted by

1. Purpose

The purpose of this Work Plan is to identify and communicate the workflow process for *insert brief description of works*. This will assist in the operations being conducted in a manner that minimizes harm to those affected and to meets the safety and quality standards required.

2. Key Personnel, Responsibilities and Contact Information

The following key personnel, responsibilities and contact information are identified.

Identify all key personnel, responsibilities and contact information for the planned work. A table format is often found to be effective in presenting this type of information. Information provided should include but not limited to:

- *Persons with specific responsibilities, e.g. Competent Persons, Equipment Operators, Flaggers, Crane Assembly/Disassembly Directors, etc.*
- *Contact Information - Telephone number(s) useful during work activities*
- *Client and subcontractor company information*
- *Emergency Procedures: e.g. location of hospitals and clinics, emergency phone numbers, environmental response, etc.*
- *Reporting of incidents to DBJV*

Those persons identified above are required to take all reasonable steps to ensure that they are readily accessible for contact when necessary.

3. Scope of Work

The scope of work for the operations described is as follows:

Summarize the work to be undertaken including but not limited to:

- *Work procedure overview*
- *Contract references / requirements*
- *General Specifications / CDA relevant info*
- *General Dates and duration of work, milestones*
- *Location(s) of work and any limits*

4. Methodology

Insert the sequence and method of working including establishment and decommissioning of the work site. The details should be written in short, clear and positive statements. Where applicable make cross references to other associated documents. The methodology should include but not be limited to:

- *Detailed description of work, with a logical and ordered flow of statements – reference schedule and limitations to work*
- *Specifications / CDA / Standards references*
- *Companies relevant to work – include relevant portions of contracts*
- *Materials and supplier of materials*
- *Survey and layout information*
- *PE requirements, shop drawings, plan document necessities – include relevant plan document and signed/sealed documents*
- *Environmental requirements – include environment & SWPPP documents*
- *Permits or relevant documentation*
- *Equipment, formwork, temporary materials used*
- *Repair procedures (if relevant)*
- *QC responsibilities, information, and hold points – include relevant QC info*
- *Health & Safety Control Measures to mitigate risk*

5. Work Site Safety

The following procedures are required in order to facilitate acceptable standards of health and safety during the work activities.

Identify the work site health and safety procedures which are applicable, such as the following:

- *Safety and health provisions / practices for work activities*
- *Housekeeping*
- *Signs, signals and barricades*
- *Material handling and storage*
- *Protection of hazard created and encountered*
- *Control of hazardous energy*
- *Personnel access and egress*
- *Fire protection and prevention*
- *Equipment to be used and any special precautions*
- *Inspection requirements*
- *Lifting operations and lifting plans*

- *Vehicle movement and management*
- *PPE requirements, mandatory and risk based*
- *Lighting plan*
- *Emergency response plan to accidents and incidents*
- *Documentation to be available on site – include copy of MSDS and relevant info*

6. Job Hazard Analyses

Before commencement of work each day, a Job Hazard Analysis (JHA) will be conducted with all members of the crew. In some cases, this may include other Contractors who may be affected by the operation.

The JHA will be delivered by the Contractor's Supervisor. Contractors will ensure that the JHA is clearly understood by all of their employees. At the end of the JHA, the Contractor Supervisor will test the understanding of all crew members by asking a number of open questions. Only when the Contractor Supervisor is satisfied that the JHA is clearly understood by all crew members and other affected Contractors (if any), will works commence.

7. Appendices

The following appendices are attached:

Insert all appendices that should be included but not be limited to:

- *Diagrams, sketches, photographs*
- *Safety related documents, emergency plan*
- *Quantity spreadsheets*
- *Production sheets*
- *Permits, legal relevant documentation, studies, etc.*
- *Plan documents, traffic control plans, existing plans*
- *Relevant portions of Subcontracts & purchase orders*
- *Relevant Specifications / CDA / Standards*
- *PE stamped drawings, shop drawings, pick plans, etc.*
- *Environmental documentation*
- *QC documentation*
- *Schedule*
- *Utility Information*

- *Geotechnical info*
- *Certifications*

Appendix C-4. Work Plan Review

WORK PLAN REVIEW

Activity/Operation:	Contract:
Submitted by:	Company:

The Work Plan detailed above has been reviewed by the Project Manager (or designated representative). **Note:** Where special knowledge of an activity or process is required, e.g. Traffic Control, additional Competent reviewer(s) have been used:

Name:	Position:	Date:
Name:	Position:	Date:

The following elements of the Work Plan have been reviewed. Comments, where applicable are identified on sheet 3 of 3:

- [ ] Detailed Scope of Work
- [ ] Significant Hazards
- [ ] Key personnel and responsibilities
- [ ] Contact Information
- [ ] Work Site Safety
- [ ] Access and Egress
- [ ] Equipment and Materials
- [ ] Inspections
- [ ] Traffic Control
- [ ] PPE
- [ ] First Aid and Emergency Procedures
- [ ] Other (specify):

The following DBJV documents will be required to be included with this work plan:

- [ ] Competent Person Designation(s)
- [ ] Operator Designation(s)
- [ ] Flagger Designation(s)
- [ ] Crane Operator Designation(s)
- [ ] Assembly/Disassembly Director Designation(s)
  i.e., Riggers, Signal Persons and Mechanics
- [ ] Crane-Specific Qualified Person Designation(s)

The following inspections will be required to be submitted to the DBJV Safety Department for this work plan:

- [ ] Daily Equipment / Cranes
- [ ] Daily Excavations
- [ ] Daily Scaffolds
- [ ] Daily Confined Spaces
- [ ] Monthly Cranes
- [ ] Monthly Wire Ropes

The following permits will be required to be submitted to the DBJV Safety Department for this work plan:

☐ DBJV Surface Penetration

☐ DBJV Close Proximity

☐ City of Dallas Hot Work

☐ DBJV Confined Space Entry

Continued on back

	Circle	Date/Signature
Work Plan complete.	**A**	
Work Plan complete after incorporation of comments identified on sheet 2 of 2 and resubmission.	**B**	

Comments	Initials

Additional sheet(s) used	**Y/N**

Appendix C-5. Job Hazard Analysis

JOB HAZARD ANALYSIS

Company (Empresa)	**Segment #**	**Work Plan #**	**Date (**Fecha)	**Day or Night** (Dia o Noche)
Competent Person (Persona Competente)	**Supervisor** e / Nombre			
Certified FA/CPR Person (Persona Certificada de Primeros Auxilios)	**Certified Flagger** (Flagger Certificado)			
TASK (Tarea)				

Steps necessary to complete the task Pasos necesarios para completar la tarea	**Hazards of each step** Peligros de cada paso	**Actions taken to prevent hazards** Medidas tomadas para prevenir peligros
STEP ONE /		
STEP TWO /		
STEP THREE /		
STEP FOUR /		

LIST THE MACHINERY THAT WILL BE USED FOR THIS JOB (Liste la maquinarias que se utilizarán para este trabajo)

LIST THE TOOLS THAT WILL BE USED FOR THIS JOB (Liste las herramientas que se utilizarán para este trabajo)

LIST THE SPECIAL PPE REQUIRED FOR JOB (Liste los equipos especiales de protección personal necesario para esta tarea)

REQUIREMENTS IN PLACE? (¿REQUISITOS EN LUGAR?)	**Yes**	**N/A**	**DAILY INSPECTIONS COMPLETED?** (¿INSPECCIÓNES DIARIAS COMPLETADAS?)	**Yes**	**N/A**
Shade for employees (Sombra para empleados)			All Machinery (Todos las Máquinarias)		
Drinking water (Agua potable)			Tools and equipment (Herramientas y equipos)		
Paper cups (Tazas de papel)			Excavations (Excavaciones)		
Trash containers (Contenedores de basura)			Scaffolds (Andamios)		
Restrooms (Baños)			**PERMITS** (¿PERMISOS COMPLETADOS?)	**YES**	**N/A**
Fire extinguishers (Extinguidores de fuegos)			Surface Penetration (Penetración de la Superficie)		
GFCIs (Interruptores de circuitos a tierra)			Close Proximity (Proximidad de Líneas Eléctricas)		
Work area protection (Protección de área de trabajo)			Confined Space (Espacio Confinado)		
First aid kit (Botiquín de primeros auxilios)			Hot Work (Trabajo en Caliente)		

CREW MEMBERS INVOLVED IN THIS JHA (Miembros de la cuadrilla que participan en este JHA)

PRINT NAME CLEARLY Escriba su nombre claramente	**SIGNATURE** Firmar su nombre	**PRINT NAME CLEARLY** Escriba su nombre claramente	**SIGNATURE** Firmar su nombre

Signature of Crew Supervisor
(Firma del Supervisor de la cuadrilla)

Signature of DBJV Representative
(Firma del Representante de DBJV)

Appendix C-6- Daily Safety Assessment

DAILY SAFETY ASSESSMENT

PROJECT AREA		AREA SAFETY		DATE:	

AREA MANAGER:		CONSTRUCTION MANAGER:	

PERSON(S) CONDUCTING AUDIT:	

SUBCONTRACTORS ONSITE (List Name and Trade)

NAME	TRADE	NAME	TRADE
1.		8.	
2.		9.	
3.		10.	
4.		11.	
5.		12.	
6.		13.	
7.		14.	

COLUMN **A** = Acceptable at time of inspection **N/A** = Not applicable **#** = Comment

1. Site / Public Protection	A	#	N/A	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Work Plan																	
2. JHA																	
3. Competent Person Designation																	
4. Flagger Designation																	
5. Adequate lighting																	
6. Barricade Installed properly																	
7. Excavation protected																	
8. Falling object protection																	
9. Perimeter fences																	

10. Public protection signage																	
11. Street closure identified																	
12. Traffic control plan																	
2. Housekeeping	**A**	**#**	**N/A**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
1. Clear access to bldg./site																	
2. Designated employee parking																	
3. Impalement protection																	
4. Proper material storage																	
5. Roadway around project clear																	
6. Slip, trip, fall hazards																	
7. Trash in protected container(s)																	
8. Walkways clear																	
4. Confined Space	**A**	**#**	**N/A**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
1. Confined Space Evaluation																	
2. Electrical / Fire Prevention																	
3. Harness / Extraction-Rescue Equipment																	
4. Comm. / Secure Area / Signage																	
5. Inspection / Air Monitor																	
6. Rescue Plan / Emergency #'s / Map																	
7. Ventilation																	
5. Excavation	**A**	**#**	**N/A**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
1. Surface Penetration Permit																	
2. Daily Inspection																	
3. Access 25 Feet																	
4. Competent person present																	
5. Entry Permit																	
6. Excavation > 20 Feet Engineered																	
7. Perimeter Protection / Barricade																	
8. Slope / Benched / Shored																	

9. Spoils 2 feet from edge																	
10. Surface traffic exposure																	
11. Water entering excavation																	
6. Ladders / Stairs	**A**	**#**	**N/A**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
1. 3' above landing																	
2. Clear of debris / materials																	
3. Extension ladder 4:1 pitch																	
4. Inspected for defects																	
5. Job-built ladders																	
6. Ladders secured																	
7. Proper use of ladder																	
8. Safe work distance from hazard																	
7. Fall Protection	**A**	**#**	**N/A**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
1. Protection of floor holes, window openings and exposed edges																	
2. Guardrails, cables and nets																	
3. Personal fall protection/arrest components																	
4. Use of specific PPE (e.g. harnesses, lanyards, SRLs, etc.)																	
5. Points of anchorage																	
6. Enforcement of fall protection practices																	
7. Enforcement of Fall Protection Plan for leading edge work																	
8. Protection from falling objects																	
9. Protection and marking of floor openings																	
10. Protection from impalement (e.g. rebar, t-posts, etc.)																	
11. Availability of Competent Persons																	
12. Fall hazards fall protection using JHAs																	

8. Electrical	A	#	N/A	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Close Proximity Permit																	
2. Cords in good condition																	
3. Cords protected from traffic																	
4. Electrical hot work procedure																	
5. Energized parts protected																	
6. GFCI's used																	
7. LO/TO procedure																	
8. Signage (including overhead)																	
9. Fire Protection	**A**	**#**	**N/A**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
1. Hot Work Permit																	
2. Emergency vehicle access																	
3. Extinguisher charged and inspected																	
4. Fire suppression equipment available																	
5. Fire watch when applicable																	
6. Proper signage (storage area…)																	
7. Proper fuel containers																	
10. Equipment	**A**	**#**	**N/A**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
1. Operator Designation																	
2. Daily documented inspections																	
3. Deficiencies from inspections addressed																	
4. Safety features (e.g. alarms, lights, horns, etc.)																	
5. Control of work area (swing radiuses, overhead work, blind spots)																	
6. Availability of operator manuals																	
7. Condition of warning stickers																	
8. Guard rails, machine guards, seatbelts																	

9. Windows and mirrors																
10. Cab access and egress (e.g. ladders, hand grabs, foot holds, etc.)																
11. Enforcement of seatbelt use																
12. Securing of unmanned equipment																
13. Availability of operators' qualifications for piece of equipment																

11. Cranes and Hoisting Equipment	A	#	N/A	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Crane Operator Designation																	
2. Crane-Specific Qualified Person Designation (rigger / signal person)																	
3. Assembly/Disassembly (A/D) Director Designation																	
4. Mobile Crane Check-In																	
5. Crane Inspection																	
6. Wire Rope Inspection (Monthly)																	
7. Comprehensive Crane Inspection (Annual)																	
8. Comprehensive Wire Rope Inspection (Annual)																	
9. Anti-Two block device																	
10. Boom angle indicator																	
11. Crane supported and level																	
12. Dist. Power lines/de-energized																	
13. Lift Plan																	
14. Load charts posted																	
15. Loads properly secured																	
16. Means of communication																	
17. Operator manual in crane																	
18. Outrigger(s) extend/cribbing																	
19. Safety latches																	
20. Swing radius barricaded																	
21. Tag line(s)																	

22. Rigging																	

12. Welding / Cutting	A	#	N/A	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Bottles upright / cap / secured																	
2. Fire extinguisher present																	
3. Flash arrest on torches																	
4. Flash protection available																	
5. Gauges working properly																	
6. Leads in good condition																	
7. Torch hoses in good condition																	
13. Hand and Power Tools	**A**	**#**	**N/A**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
1. Cord in good condition																	
2. Ground prong in place																	
3. Guards in place																	
4. Information label on tool																	
5. Proper tool for task																	
14. Scaffolds	**A**	**#**	**N/A**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
1. Bracing and pins in place																	
2. Compatible components used																	
3. Inspected daily																	
4. Prop secured to structure																	
5. Proper access to platforms																	
6. Proper loading of materials																	
7. Sills, plates, jacks installed																	

15. MISCELLANEOUS / COMMENTS (Include Closure Notations)	LOCATION	TIME	Item Code

Appendix C-7. Medical Treatment Authorization Form

Medical Treatment Authorization Form

Injured Employee _____ **Date of Birth** _____ **Phone** _____

Employee Address _____ _____ _____ _____

Street Address City State Zip

Date of Injury _____ **Time of Injury** _____ ☐am ☐pm **Department** _____

Post-Injury or Accident Drug Screen **Yes** ☐ **No** ☐

Our employee reports an injury to (body part) _____

While performing (describe how injury occurred) _____

Diagnoses _____

Treatment Plan

_____

☐ Work Related

☐ Non-work Related

DBJV is always concerned with the health and welfare of all employees and offers extensive progressive modified duty programs. We are able to accommodate most restrictions to help employees to continue to earn their income while recovering from work related injuries. The treating physician is requested to contact with the Safety Director to discuss the return to work options after the evaluation.

Please check all that apply

☐ **Employee is released to full duty without restrictions**

☐ **Employee is being given modified duty with the following restrictions:**

Description of restrictions

☐ **Lifting** _____

☐ **Pushing** _____

☐ **Pulling** _____

☐ **Squatting** _____

☐ **Climbing** _____

☐ **Standing** _____

☐ **Bending** _____

☐ **Other** _____

Physician's Name: _____ **Signature** _____

Date _____

Check the facility the employee was referred to for treatment

Injury Care and Post Injury Drug Screens	Pre-placement and Post Injury Drug Screens	Injuries Requiring Hospital Emergency Medical Treatment

Supervisor's Name	Supervisor's Signature	Date

Medical Provider: Please examine and provide treatment which may be required as a result of this injury.

Send the DWC 73 to INSURANCE·COMPANY¶

Drug screen invoices are to be sent to

DBJV¶

Appendix C-8 – Injury Investigation Report

INJURY INVESTIGATION REPORT

GENERAL INFO	COMPANY	SUPERVISORS NAME	INJURY ☐ NEAR MISS ☐
	EMPLOYEE NAME		OCCUPATION
	DATE OF ACCIDENT	DATE REPORTED	TIME OF ACCIDENT AM ☐ PM ☐
	A. TYPE OF ACCIDENT		HOW LONG HAS THE EMPLOYEE WORKED AT THIS OCCUPATION?
	B. TYPE OF INJURY / ILLNESS	C. PART OF BODY INJURED	HOW LONG HAS THE INJURED PERSON WORKED AT HIS JOB? _____DAY(S)_____WEEK(S)_____MONTH(S)_____YEAR(S)
	TYPE OF ACCIDENT MEDICAL TREATMENT FIRST AID NEAR MISS LOST TIME		EMPLOYEE RETURN WITH ANY RESTRICTIONS? ☐ YES ☐ NO ARE RESTRICTIONS WITHIN NORMAL JOB TASKS? ☐ YES ☐ NO
	EMPLOYEE STATEMENT OF ACCIDENT		
DESCRIPTION	WHERE AND HOW DID ACCIDENT HAPPEN? (USE ADDITIONAL SHEETS IF NECESSARY)		
CAUSE	SPECIFY MACHINE, TOOL, SUBSTANCE OR OBJECT CONNECTED WITH THE ACCIDENT		
	UNSAFE MECHANICAL/PHYSICAL/ENVIRONMENTAL CONDITION AT TIME OF ACCIDENT (BE SPECIFIC)		
	PERSONAL FACTORS (ATTITUDE, LACK OF KNOWLEDGE OR SKILL, SLOW REACTION, FATIGUE)		
	PERSONAL PROTECTIVE EQUIPMENT REQUIRED?		WAS INJURED EMPLOYEE USING REQUIRED EQUIPMENT?
Recommendation	ACTION PLAN TO PREVENT RECURRENCE (MODIFICATION OF MACHINE, MECHANICAL, GUARDING, ENVIRONMENT, TRAINING)		
	FORM COMPLETED BY _____		DATE _____
Follow-	ACTIONS TAKEN ON RECOMMENDATIONS (INCLUDE DATE COMPLETED)		

INSTRUCTIONS FOR COMPLETING ACCIDENT REPORT

Please print or type all information. Complete report in as much detail as possible.

GENERAL INFORMATION

Fill in all information requested, company name, supervisor's name, name of person injured, date, exact location, job title, job being performed, etc. For description of type of accident/illness, injury and body part see the following:

A. TYPE OF ACCIDENT/ILLNESS

slip/fall
struck by/against
caught in/on/between
contact with/by
over-exertion/lifting
burn by
cut by
amputation

B. TYPE OF INJURY

cut sprain
bruise burn
puncture irritation
abrasion swelling
strain fracture

C. PART OF BODY INJURED

(select as many as needed)
thumb/finger/hand/wrist
elbow/arm/shoulder
toe/foot/ankle
leg/knee/hip
head/neck/face
nose/eye/ear/throat
chest/abdomen
upper back/lower back

DESCRIPTION OF ACCIDENT

Describe in as much detail as possible where and how the accident happened. This section is for facts, not opinions. Statements the injured or witnesses made should be detailed. Use an additional piece of paper if more space is needed. Include sketches or photos if they help explain what happened.

CONTRIBUTING FACTORS

Identify and describe in detail the type of equipment, tools, processes etc., unsafe conditions (mechanical, physical and environmental) and or personal factors contributing to the accident to your knowledge. Discuss the use and requirements regarding any personal protective equipment.

Unsafe Actions	Unsafe Conditions
1. Operating equipment without authority	1. Inadequate guards or barriers
2. Failure to warn	2. Inadequate or improper PPE
3. Failure to secure	3. Defective tools, equipment or materials
4. Operating at improper speeds	4. Congestion or restricted areas
5. Making safety devices inoperable	5. Inadequate warning signs
6. Removing safety devices	6. Fire and explosion hazards
7. Using defective equipment	7. Poor housekeeping
8. Using equipment improperly	8. Hazardous environmental conditions
9. Failure to use PPE properly	9. Noise exposure
10. Improper loading	10. Radiation exposure
11. Improperly lifting	11. High and low temperature exposures
12. Improper placement	12. Inadequate lighting
13. Improper position for the task	13. Inadequate ventilation
14. Servicing equipment in operation	
15. Horseplay	
16. Drugs or alcohol	

RECOMMENDATIONS

If contributing factors are identified, action must be taken to prevent the same thing from happening again. Realistic yet effective recommendations should be implemented. The form should be signed and dated by the appropriate supervisor.

FOLLOW-UP

List actions which have been taken and their respective completion date. Proper follow-up should continue on any incomplete recommendations.

Appendix C-9 – General Liability Investigation Report

GENERAL LIABILITY INVESTIGATION REPORT

GENERAL INFO	COMPANY NAME	SUPERVISOR'S NAME	SUPERVISOR'S PHONE NUMBER
	DATE OF ACCIDENT	DATE REPORTED	TIME OFACCIDENT AM PM
	INVOLVED EMPLOYEE NAME		OCCUPATION
	TYPE PROPERTY INVOLVED		LOCATION OF PROPERTY
	IF A VEHICLE LIST: MAKE, MODEL, TAG NUMBER, SERIAL NUMBER.		VEHICLE OWNER'S NAME AND PHONE
	CLAIMANT'S NAME		CLAIMANT'S PHONE NUMBER
	PROPERTY OWNER'S NAME		PROPERTY OWNER'S ADDRESS AND PHONE NUMBER
	LOCATION OF ACCIDENT		PROPERTY CAN BE SEEN AT (ADDRESS)
	INJURED NAME		INJURED ADDRESS
	TYPE OF COMPANY EQUIPMENT INVOLVED		EQUIPMENT CAN BE SEEN AT (ADDRESS)
	NAME OF INJURED	INJURY TYPE IF KNOWN	ADDRESS OF INJURED
CLAIMANT'S DESCRIPTION			
INVESTIGATION FINDINGS			
CORRECTIVE ACTION			

Completed by _____ Date _____

Appendix C-10 - Near Miss Communication

NEAR MISS COMMUNICATION

Date:

Job Name: DBJV Project

Reported by (optional):

Please check all the relevant boxes below and complete the details of the near miss below.

❑ PPE ❑ Environment ❑ Equipment/Vehicles ❑ Small Tools
❑ Work at Height ❑ Excavation Work ❑ 'At Risk' Behaviors ❑ Unsafe condition
❑ Other
(specify):_____

_____

_____

Describe the Near Miss or Hazard:

_____

_____

_____

_____

What can/should be done to keep this from happening again?

_____

_____

_____

_____

_____

Appendix C-11- Employee Written Warning

EMPLOYEE WRITTEN WARNING

Fax: Date:

SEND ORIGINAL COPY TO HR DEPARTMENT

WARNING NOTICE – DISCIPLINARY SUSPENSION

Employee Name: _____

Reason for Discipline:

Attendance

Violation of Company Policies/Procedures

Violation of Safety Policies/Procedures

Other

Explanation:

_____

_____

You are expected to follow all of DBJV' Policies and Procedures and to adhere to all Rules and Regulations. If you fail to do so, you will be subject to further disciplinary action up to and including the termination of your employment.

_____ _____ _____ _____

Employee Signature Date Supervisor Signature Date

_____ _____

Verified Date

Appendix C-12. Mobile Crane Check- In

MOBILE CRANE CHECK IN

PROJECT AREA:. PROJECT NAME: DATE:

AREA MANAGER: CONSTRUCTION MANAGER:

PERSON CONDUCTING CHECK-IN:

SUBCONTRACTOR: OWNER:

MODEL TYPE CAPACITY YEAR COLOR UNIT

DATE OF ANNUAL INSPECTION:

ACTIVITIES TO BE PERFORMED	YES	NO	COMMENTS
Type-specific daily inspection log in operator cab?			
Make/model-specific operator manual in operator cab?			
Make/model-specific load chart in operator cab?			
Legible hand signal chart on outside of unit?			
Legible and appropriate warning stickers on unit?			
Appropriate stability items available (e.g. pads, mats, etc.)			
Appropriate site control items available (e.g. caution tape, fencing, etc.)			
Spill control media available?			
Fire extinguisher?			
Glass and mirrors intact?			
All safety features functional (e.g. alarms, horn, anti-two block, etc.)?			
All hooks have functioning safety latch?			
Block and ball stamped w/ load capacity?			
Special attachments (e.g. spreader bars) stamped w/ load capacity?			
Wire ropes free of visible defects?			
Pulleys and drums free of visible defects?			
Rigging (e.g. slings, chains, etc.) have attached and legible tags?			
Any visible defect or area of concern?			

Appendix C-13. Power Line Close Proximity Permit

POWER LINE CLOSE PROXIMITY PERMIT

Date: _____ Requested by: _____

Company Name: _____ Competent Person: _____

Area: _____ Start Time: _____ End Time: _____

Purpose of activity: _____

Location of activity: _____

Supervisor completing the form: _____

Height of power line in feet: _____ Voltage in kV: _____

Owner of utility and point of contact: _____

Equipment to be used: _____

Safety option chosen: □ De-energize and Ground □ Maintain 20' Clearance □ Table A Clearance

Method of protection: □ Dedicated Spotter □ Proximity Alarm □ Encroachment Warning Device □ Encroachment Limiting Device □ Insulating Link/Device

Please diagram your set-up location (aerial and elevation perspectives) on the back of this page(s).

TABLE A — MINIMUM CLEARANCE DISTANCES (29 CFR 1926.1408)

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

***Note:** The value that follows "to" is up to and includes that value. For example, over 50 to 200 means up to and including 200kV.

Operator's signature: _____

Supervisor's signature: _____

DBJV Representative: _____

Appendix C-14 Surface Penetration Permit

SURFACE PENETRATION PERMIT

Date: _____ Requested by: _____

Company Name: _____ Competent Person: _____

Area: _____ Start Date: _____ Completion Date: _____

Drawing: _____ Bore/Bent/Shaft #: _____

Purpose of Surface Penetration: _____

Location of Surface Penetration: _____

Description of the Surface Penetration _____ _____ _____

Depth Width/Diameter Length

Soil Classification: ☐ **A** ☐ **B** ☐ **C** Methods of Determination: _____

Protective System(s) Used: ☐ Bench ☐ Slope ☐ Trench Box ☐ Shield ☐ Shore ☐ N/A

Safe Guarding Used: ☐ Safety Fence ☐ Handrails ☐ Cover ☐ N/A

Utility Locate Reference #	**Signature of Supervisor**	**Located**	**Marks/Flags Visible**
Electric			
Gas			
Communications			
Water			
Pipeline			
Telephone			
Other			
Other			

SAFETY CHECKLIST **Y or N or** Mark not applicable (**N/A**) for those that do not apply.

Confined Spaces	_____	Undermined Structures	_____
Overhead Lines	_____	Spoil Piles	_____
Notified Affected Parties	_____	Utilities (Supported)	_____
Barricades	_____	Water Seepage	_____
Access Ladders	_____	Employee Training	_____
Designated Competent Person	_____	Hazardous Atmosphere	_____

Operator's Signature: _____ **Date:** _____

Foreman or Supervisor's Signature: _____ **Date:** _____

DBJV Representative's Signature: _____ **Date:** _____

This permit is required to be completed by the Contractor's Designated Competent Person prior to any surface penetration activity (e.g. drilling, boring, excavating, etc.) taking place. A new permit is required to be filled out if, after 14 days, the activity has not been completed.

***** The Work Plan, Job Hazard Analysis, Operator Designation and Competent Person Designation must be attached to this Permit and be available for review during activity. *****

Appendix C-15 Confined Space Entry Permit

CONFINED SPACE ENTRY PERMIT

Date and Time Issued: _____ Date and Time Expires: _____

Job site location _____Job Supervisor: _____

Type of confined Space : _____

Work to be performed:_____

Attendants Name:_____

Atmospheric Checks: Time _____Oxygen _____%Explosive_____%

Toxic _____PPM

2. Tester's signature: _____

3. **Source isolation:**	**N/A**	**Yes**	**No**
pumps or lines blinded,	(...)	( )	( )
Disconnected, or blocked	( )	( )	( )

4. **Ventilation Modification:**	**N/A**	**Yes**	**No**
Natural Ventilation only	( )	( )	( )
Mechanical	( )	( )	( )

5. **Atmospheric check after isolation and Ventilation**:

Oxygen _____% > 19.5 % < 21%

Explosive _____% L.F.L < 10 %

Toxic _____PPM

Time _____

Tester's signature: _____ _____

Print Sign

6. Communication procedures

_____
_____
_____
_____

7. Rescue procedures:

_____
_____
_____
_____

8. Entry, standby and back up persons	**NA**	**YES**	**NO**
Successfully completed required training?	( )	( )	( )
Is training current?	( )	( )	( )

9. Equipment:	**NA**	**YES**	**NO**
Direct reading gas monitor - Tested	( )	( )	( )
Safety harnesses and lifelines	( )	( )	( )
for entry and standby persons	( )	( )	( )
Hoisting equipment	( )	( )	( )
Powered communications	( )	( )	( )
SCBA's for entry and standby persons	( )	( )	( )
Protective Clothing	( )	( )	( )
All electric equipment listed Class I, Division I,			
Group D and Non-sparking tools	( )	( )	( )

10. Periodic atmospheric tests:

Oxygen_____% Time _____ Oxygen_____%Time _____
Oxygen_____% Time _____ Oxygen_____%Time _____
Explosive_____% Time _____ Explosive_____%Time _____
Explosive_____% Time _____ Explosive_____%Time _____

Toxic_____%Time _____ Explosive_____%Time _____

Toxic_____%Time _____ Explosive_____%Time _____

We have reviewed the work authorized by this permit and the information contained here-in. Written instructions and safety procedures have been received and are understood. Entry cannot be approved if any squares are marked in the "No" column. This permit is not valid unless all appropriate items are completed.

Permit Prepared By:

Contractors Supervisor_____/_____
Print Sign

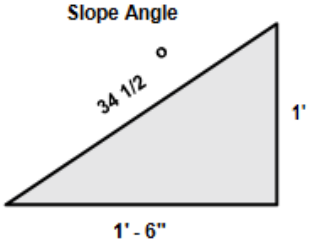
Approved By _____/_____
Print Sign

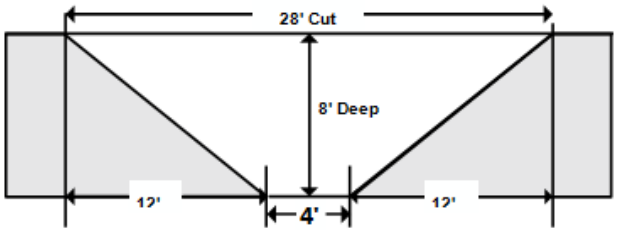
This permit to be kept at job site. Return job site copy to the DBJV Safety office following job completion.

Appendix C-16 Daily Excavation Checklist

Daily Excavation Checklist			
Company Name :	Date:		
Supervisors Name:			
Site Location:	Competent Person:		
Soil Type: Excavation Depth:	Excavation Width:		
Type of Protective System Used:			
Indicate for each item: Yes – No – or N/A for not applicable:			
1. General Information:	**Y**	**N**	**N**
A. Is excavation less than five feet in depth?			
B. Is there a potential for a cave-in? ***IF YES, excavation must be sloped, shored, or shielded.**			
C. Is excavation deeper than five feet in depth? *** IF YES, excavation must be sloped, shored, or shielded.**			
D. Is sloping used as your protective system?			

Slope information to keep in mind





Example of a Simple 34-degree Slope
commonly used around the site for cave-in protection.

2. Inspection of Job-site:	**Y**	**N**	**N**
A. Excavations, adjacent areas, and protective systems inspected by a Competent person daily before the start of work.			
B. Competent person has the authority to remove employees from the excavation immediately.			
C. Surface encumbrances removed or supported.			
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.			
E. Hard hats and safety glasses worn by all employees.			
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.			
G. Adequate barriers provided at all excavations, wells, pits, shafts, etc.			
H. Warning vests or other highly visible clothing provided and worn by all employees exposed to vehicular traffic. It's a good practice to wear vests at all times around heavy equipment.			
I. Employees required to stand away from vehicles being loaded or unloaded.			
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.			
K. Employees prohibited from going under suspended loads.			

3. Utilities:	Yes	No	N.A.
A. Location of utilities marked.			
B. Prior to the use of equipment, underground utilities have been located by and digging.			
C. Underground utilities are protected, supported, or removed when excavation open.			
4. Means of Access and Egress:	**Yes**	**No**	**N/A**
Travel distance to means of egress no greater than 25 feet in excavations four feet or more in depth.			
B. Straight ladders used in excavations extend at least three feet above the edge of the trench.			
C. Ramps being used for employee access have been designed by the competent person.			
D. Employees protected from cave-ins when entering or exiting the excavation.			
5. Wet Conditions:			
A. Precautions have been taken to protect employees from the accumulation of water.			
B. Water removal equipment monitored by a competent person.			
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.			
D. Inspections have been made after every rainstorm or other hazard-increasing occurrence.			
6. Hazardous Atmosphere: The atmosphere within the excavation must be tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	**Yes**	**No**	**N/A**
A. Are there exposed sewer or natural gas lines in excavation?			
B. Is excavation near a landfill area, or are hazardous substances being stored close to the excavation?			
If you answered YES to A or B, then treat excavation as a confined space.			
C. Employees will contact Fire/Rescue at 911 in case of emergencies.			
7. Support Systems:	**Yes**	**No**	**N/A**
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.			
B. Materials and equipment used for protective systems inspected and in good condition.			
C. Materials and equipment not in good condition have been removed from service.			
D. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.			
E. Members of support system securely fastened to prevent failure.			
F. Support systems provided to ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.			
G. Excavations below the level of the base of a footing have been approved by a Registered Professional Engineer.			
Removal of support systems progresses from the bottom and members are released slowly so you can note any indication of possible failure.			
I. Backfilling progresses with removal of support system.			
Support Systems continued	Yes	No	N/A
J. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.			
K. Shield system placed to prevent lateral movement.			
L. Employees are prohibited from remaining in shield system during vertical movement.			
8. Training:	**Yes**	**No**	**N/A**
A. Employees are prohibited from remaining in shield system during vertical movement.			

Appendix C-17- MPT Permit

DBJV MPT PERMIT

Contractor: Permit Number:

Area: Date Submitted:

Location: Date of Work:

Day or Night Work:

Installation Time: Removal Time: Project Duration:

Contractor/Subcontractor Responsible Supervision: Phone Number:

Required Equipment:

Temporary Signal ☐ Barrels ☐

Crash Truck ☐ Message Board ☐

Arrow Board ☐ VMS Message:

Required Manpower:

Flagger ☐ Police ☐

Quantity ____ Quantity ____

Special Requirements:

***DEN Shutdown Request Form & DEN Terminal Ops Approval:**

Submit form to DEN a minimum of 5 days in advance of planned work

Form is available upon request

*Check off if equipment/manpower will be used in set-up or maintaining the closure. Note quantities and special requirements. (i.e.. Overnight barricading of a parking lane).

Approvals:

Proposed Installation Actual Installation Proper Removal

DBJV Supervisor: _____ _____

(Signature) (Signature)

Subcontractor Supervisor: _____ _____

(Signature) (Signature)

Barricade Log – Daily Inspection Record:

Check for the following Items:

1. All protection, as indicated is clean, unobstructed and clearly visible. 4. Equipment is properly parked.

2. All protection is properly located, in good condition and well secured. 5. Materials are properly stored.

3. Roadway open to traffic is free of holes, ruts or spillage. 6. All flashers are operating.

Time Weather

I certify that all protection as shown has been personally inspected and it exists in satisfactory condition.

Appendix C-18 Access Plan/Ladder Permit

Access Plan/Ladder Permit

Date: Subcontractor:

Person(s) Completing Checklist:

Foremen and Location of ladder:

Preferred methods of access:	Yes	No
Stair towers		
Ariel lifts		
Scissor lifts		
Scaffolding		
Swing Scaffolds		
Ramps		
Stairways or steps		

Ladders:	Yes	No
Access to Ladder		
A frame		
Fixed ladder		
Job made ladder		

Define fall protection plan above/below ground 12 ft:	Yes	No
Harness		
Lanyard or SRL		
Horizontal lifeline:		
Rope Grab		
Tripod/Davit arm and winch		

Means of rescue:	Yes	No
Client		
Emergency services		
Self rescue		

Other means of protection to be considered:	Yes	No
Physical Barriers around access point		
Physical Barrier around hole or floor opening		
Signs		
Fall protection required above or beyond this point		
Barrier and sign to define no go zone form work above		
Floor openings to be covered and marked "Hole"		
Impalement Protection, use rebar caps or other safe means		

Comments / Notes:

Appendix C-19 Crane Operator Designation

CRANE OPERATOR DESIGNATION

PROJECT:		GENERAL CONTRACTOR:	
CONTRACTOR:		EMPLOYEE:	

As Authorized Representative of the above named Contractor, I hereby designate the above mentioned Employee as an

Operator of a crane.

The Occupational Health and Safety Administration (OSHA) at this time, requires that an Operator of a crane be qualified or certified. OSHA defines qualified person as one "who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, successfully demonstrates the ability to solve/resolve problems relating to the subject, matter, the work, or the project". A certified "OPERATOR" of a crane is one who has completed a formal training program through an accredited crane operator testing organization and who has passed tests in both knowledge and skill for a particular type and capacity of equipment

Knowledge of ALL current local, state and federal requirements, regulations, standards, procedures and practices that are applicable to the encircled areas below is mandatory

Interim Option-Phase-in 1926.1427(k)

Option 1 Certification by an Accredited Crane Operator Testing Organization (1926.1427(b))

Name of Accredited Organization_____

Option 2-Qualification by an audited employer Program (AEP) (1926.1427(C)

Option A- Accredited Organization that developed the AEP

Option B- Certified Auditor (cannot be employee of Contractor)

Accredited Organization that Certified Auditor:_____

ACKNOWLEDGEMENT

I, the Authorized Contractor Representative, understand that if at any point in the future this Employee loses this designation, is unable to fulfill the responsibilities of this role, is terminated or is removed from the Project, I will provide written notification to the DBJV Safety Department within 2 business days.

AUTHORIZED CONTRACTOR REPRESENTATIVE	DATE
Print:	
Sign:	

EMPLOYEE ACKNOWLEDGEMENT OF THIS DESIGNATION	DATE
Print:	
Sign:	

Please indicate if applicable:

☐ This employee is a Supervisor

☐ This individual is an employee of a subcontractor to the Contractor under contract with DBJV

Appendix C-20 Crane-Specific Qualified Person Designation

CRANE-SPECIFIC QUALIFIED PERSON DESIGNATION

PROJECT:		GENERAL CONTRACTOR:	
CONTRACTOR:		EMPLOYEE:	

As Authorized Representative of the above named Contractor, I hereby designate the above mentioned Employee as a

Qualified Person

The Occupational Health and Safety Administration (OSHA) defines Qualified Person as one "who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, successfully demonstrates the ability to solve/resolve problems relating to the subject, matter, the work, or the project".

POSITIONS OF RESPOSABILITY INDIVIDUAL QUALIFIED (Please indicate all that apply)

Rigger-_____

Signal Person (1926.1428)

Option 1-Qualification by a Third Party Qualified Evaluator*_____

Name of Third Party _____

Name of Qualified Evaluator _____

* Provide documentation to the DBJV Safety Department with this form

Option 2-Qualification determined by "CONTRACTOR" Qualified Evaluator_____

Maintenance and Repair Employee (1926.1429):_____

ACKNOWLEDGEMENT

I, the Authorized Contractor Representative, understand that if at any point in the future this Employee loses this designation, is unable to fulfill the responsibilities of this role, is terminated or is removed from the Project, I will provide written notification to the DBJV Safety Department within 2 business days.

AUTHORIZED CONTRACTOR REPRESENTATIVE	DATE
Print:	
Sign:	

EMPLOYEE ACKNOWLEDGEMENT OF THIS DESIGNATION	DATE
Print:	
Sign:	

Please indicate if applicable:

☐ This employee is a Supervisor

☐ This individual is an employee of a subcontractor to the Contractor under contract with DBJV

Appendix C-21 Flagger Designation

CRANE-SPECIFIC QUALIFIED PERSON DESIGNATION

PROJECT:		GENERAL CONTRACTOR:	
CONTRACTOR:		EMPLOYEE:	

As Authorized Representative of the above named Contractor, I hereby designate the above mentioned Employee as a

Certified Flagger

A Flagger is a person who is qualified to performs flagging duties, that is follow the flagging procedures, direct traffic and effectively communicate with the public in a courteous manner and is independently certified by a approved organization or trained by a Certified Flagging Instructor representing the Contractor

APPROVED ORGANIZATION or CERTIFIED INSTRUCTOR (Please indicate all that apply)

American Traffic Safety Services Association:_____

National Safety Council:_____

Other Approved Organization:_____

*Note: Copy of Certificate must be provided to the DBJV Safety Department with this form.

Certified Flagging Instructor representing the Contractor

Instructor´s Name:_____

Certifying Organization:_____

Date of Instructor´s Certification:_____

I, the Authorized Contractor Representative, understand that if at any point in the future this Employee loses this designation, is unable to fulfill the responsibilities of this role, is terminated or is removed from the Project, I will provide written notification to the DBJV Safety Department within 2 business days.

AUTHORIZED CONTRACTOR REPRESENTATIVE	DATE
Print:	
Sign:	

EMPLOYEE ACKNOWLEDGEMENT OF THIS DESIGNATION	DATE
Print:	
Sign:	

Please indicate if applicable:

- ☐ This employee is a Supervisor
- ☐ This employee is a Company Safety Representative
- ☐ This individual is an employee of a subcontractor to the Contractor under contract with DBJV

Appendix C-22 Operator Designation

OPERATOR DESIGNATION

PROJECT:		GENERAL CONTRACTOR:	
CONTRACTOR:		EMPLOYEE:	

As Authorized Representative of the above named Contractor, I hereby designate the above mentioned Employee as an Operator.

The Occupational Health and Safety Administration (OSHA) requires that an operator be Qualified or Certified dependent upon the type of equipment to be operated.

A Qualified Operator is an individual as who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, successfully demonstrates the ability to successfully solve/resolve problems relating to the equipment, the work and the environment.

A Certified Operator is one who has completed a formal training program through an accredited operator testing organization and who has passed tests in both knowledge and skill for a particular type and capacity equipment.

TYPES OF EQUIPMENT EMPLOYEE IS AUTHORIZED TO OPERATE (Please complete as appropriate)			
TYPE	MAKES	MODEL/CAPACITY	QUALIFIED/CERTIFIED THRU

***Copy of Certificate or license must be provided to the DBJV Safety Department**

ADDITIONAL INFORMATION FOR CRANE OPERATORS (Please indicate)

Certification by a accredited crane operator testing organization:_____

Qualification by an audited employer program:_____

Exception permitted under 1926.1947(k)(2)

**** A Competent Person Designation Form must be submitted to the DBJV Safety Department with this Form**

I, the Authorized Contractor Representative, understand that if at any point in the future this Employee loses this designation, is unable to fulfill the responsibilities of this role, is terminated or is removed from the Project, I will provide written notification to the DBJV Safety Department within 2 business days.

AUTHORIZED CONTRACTOR REPRESENTATIVE	DATE
Print:	
Sign:	

EMPLOYEE ACKNOWLEDGEMENT OF THIS DESIGNATION	DATE
Print:	
Sign:	

Please indicate if applicable:

☐ This employee is a Supervisor

☐ This individual is an employee of a subcontractor to the Contractor under contract with DBJV

Appendix C-23 Electrical Inspection Verification

ELECTRICAL INSPECTION VERIFICATION

PROJECT:_____ DATE:_____

GENERAL CONTRACTOR:_____

SUBCONTRACTOR:_____ PROJECT AREA:_____

COMPETENT PERSON:_____ PERIOD:_____

As an authorized "COMPETENT PERSON" for the above named "SUBCONTRACTOR" on the above named "PROJECT" in the area of Electrical (power tools, cords, lights and power sources), I hereby verify that all electrical components in our use, temporary and permanent, have been inspected and maintained over the "PERIOD" indicated above, and meet all local, state and federal regulations for their safe use.

The following color code program will be required as a visual indicator of this inspection practice:

WHITE-January, February and March

GREEN- April, May and June

RED- July, August and September

ORANGE- October, November and December

AUTHORIZED "COMPETENT PERSON"	DATE
Print:	
Sign:	

Frequency of submission of this form to the DBJV Safety Department is QUARTERLY.

This form shall be emailed to the Safety Coordinator.

Appendix C-24 Fall Protection Inspection Verification

FALL PROTECTION INSPECTION VERIFICATION

PROJECT:_____ DATE:_____

GENERAL CONTRACTOR:_____

SUBCONTRACTOR:_____ PROJECT AREA:_____

COMPETENT PERSON:_____ PERIOD:_____

As an authorized “COMPETENT PERSON” for the above named “SUBCONTRACTOR” on the above named “PROJECT” in the area of Fall Protection (i.e. Personal Fall Arrest Systems: selection use and maintenance), I hereby verify that all Personal Fall Arrest System components in our use have been inspected and maintained over the ”PERIOD” indicated above, and meet all local, state and federal regulations for their safe use.

The following color code program will be required as a visual indicator of this inspection practice:

WHITE-January, February and March

GREEN- April, May and June

RED- July, August and September

ORANGE- October, November and December

AUTHORIZED “COMPETENT PERSON”	DATE
Print:	
Sign:	

Frequency of submission of this form to the DBJV Safety Department is QUARTERLY.

This form shall be emailed to the Safety Coordinator.

Appendix C-25 Fire Protection Verification

FIRE PROTECTION INSPECTION VERIFICATION

PROJECT:_____ DATE:_____

GENERAL CONTRACTOR:_____

SUBCONTRACTOR:_____ PROJECT AREA:_____

COMPETENT PERSON:_____ PERIOD:_____

As an authorized “COMPETENT PERSON” for the above named “SUBCONTRACTOR” on the above named “PROJECT” in the area of Fire Protection, I hereby verify that all Fire extinguishers at our disposal have been inspected and maintained over the ”PERIOD” indicated above, and meet all local, state and federal regulations for their safe use.

NOTE: All extinguishers must be inspected by a third party entity, annually.

AUTHORIZED “COMPETENT PERSON”	DATE
Print:	
Sign:	

Frequency of submission of this form to the DBJV Safety Department is MONTHLY.

This form shall be emailed to the Safety Coordinator.

Appendix C-26 Scaffold Inspection Verification

SCAFFOLD INSPECTION VERIFICATION

PROJECT:_____ DATE:_____

GENERAL CONTRACTOR:_____

SUBCONTRACTOR:_____ PROJECT AREA:_____

COMPETENT PERSON:_____ PERIOD:_____

As an authorized “COMPETENT PERSON” for the above named “SUBCONTRACTOR” on the above named “PROJECT” in the area of Scaffolds (erection, use and dismantling), I hereby verify that all Scaffolds in our use, rented and owned, have been inspected on a daily basis for the “DATES” indicated above, and meet all local, state and federal regulations for their safe use.

AUTHORIZED “COMPETENT PERSON”	DATE
Print:	
Sign:	

Frequency of submission of this form to the DBJV Safety Department is WEEKLY.

This form shall be emailed to the Safety Coordinator.

Appendix C-27 Rigging Inspection Verification

RIGGING INSPECTION VERIFICATION

PROJECT:_____ DATE:_____

GENERAL CONTRACTOR:_____

SUBCONTRACTOR:_____ PROJECT AREA:_____

COMPETENT PERSON:_____ PERIOD:_____

As an authorized “COMPETENT PERSON” for the above named “SUBCONTRACTOR” on the above named “PROJECT” in the area of Rigging (selection, use and maintenance), I hereby verify that all Rigging in our use, rented and owned, have been inspected over the “PERIOD” indicated above, and meet all local, state and federal regulations for their safe use.

AUTHORIZED “COMPETENT PERSON”	DATE
Print:	
Sign:	

Frequency of submission of this form to the DBJV Safety Department is WEEKLY.

This form shall be emailed to the Safety Coordinator.

Appendix C-28 Ladder Inspection Verification

LADDER INSPECTION VERIFICATION

PROJECT:_____ DATE:_____

GENERAL CONTRACTOR:_____

SUBCONTRACTOR:_____ PROJECT AREA:_____

COMPETENT PERSON:_____ PERIOD:_____

As an authorized "COMPETENT PERSON" for the above named "SUBCONTRACTOR" on the above named "PROJECT" in the area of Ladders (selection, use and maintenance), I hereby verify that all Rigging in our use, manufactured and job-built, have been inspected over the "PERIOD" indicated above, and meet all local, state and federal regulations for their safe use.

AUTHORIZED "COMPETENT PERSON"	DATE
Print:	
Sign:	

Frequency of submission of this form to the DBJV Safety Department is WEEKLY.

This form shall be emailed to the Safety Coordinator.