



SAFETY PLANS,
PROGRAMS
&
DOCUMENTATION

Sletten Companies

Safety Related Programs, Plans and Documentation

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Sletten Companies

Project Name
Project Address

Sletten Job #

SITE SPECIFIC SAFETY PLAN

Date

SECTION 1
Statement of Safety
And Health

Section 1: STATEMENT OF SAFETY AND HEALTH POLICY

Sletten Construction Company has developed a comprehensive safety and health program that addresses our specific safety and health concerns and provides guidance for the performance of our individual job tasks within the framework of appropriate Occupational Safety and Health Administration (OSHA) standards.

Safety takes a commitment from all personnel within our organization. Training will be interactive with an opportunity for all too actively participate, ask questions, make suggestions, and refer to our written policies and procedures.

It is the policy of Sletten Construction Company to provide a work environment that is inherently safe. The safety and health of our employees is of primary importance as they are our most important resource.

Safety training needs will be identified by continual reassessment of our work methods, equipment and job sites as well as employee and management input. Observation of unsafe acts will be addressed immediately.

Each employee is encouraged to contact their Supervisor immediately should a safety or health risk exist so that corrective action may be taken immediately.

Safety requires not only that each person understand and perform individual tasks in a safe manner, but also that each individual is aware of his/her surroundings and is actively involved in the safety and health of others.



Erik Sletten/President

12/16/14

Date

SECTION 2: SCOPE OF WORK SUMMARY

Project Name Job # :

Project Scope of work summary to be inserted here



SECTION 3: SIGNATURE SHEET

The following person is responsible for preparing and approving this plan:

Preparer:

Lenore Di Stefano

Sletten Construction SW Safety Director
702-994-6365

Signature: _____

Date: _____

SECTION 4: PROJECT TEAM

Project Team

List of project team names and contact information to be inserted here

SECTION 5: RESPONSIBILITIES AND LINES OF AUTHORITY

The following people have responsibilities and authority for corporate safety:

A. RESPONSIBILITIES

Corporate Safety Officers: Conduct periodic safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Lead or direct the management team in accident/incident investigations. And other duties as assigned.

- Tom Morano 702.236.6365
- Lenore Di Stefano 702.994.6365

Site Safety Responsibilities (If Warranted): The site safety representative will attend all job-site safety meetings as necessary. The site safety representative will ensure that all employees have the required training for the tasks performed. The site safety representative will conduct job-site inspections daily and a documented safety audit no less than once weekly. The safety audits will be distributed to the site management team for corrective action/abatement. The site safety representative will assist with accident/near miss investigations and report the findings to the General Superintendent/Project Manager/Corporate Safety Officer, and other duties as required.

- **To be Announced**

Project General Superintendent: The superintendent is responsible for the safety and health of employees and other workers that he/she directs. Superintendent shall know the Sletten Construction safety requirements and the site specific safety requirements. Ensure workers under your supervision are aware of all known or reasonably foreseeable health and safety hazards where they work. Provide orientation to Sletten employees and subcontractor's employees working onsite and training to new and existing workers at your workplace including equipment, PPE and task specific training. Ensure that the appropriate personal protective equipment and clothing are available, worn when required, and inspected and maintained. Investigate unsafe conditions reported to you, and ensure that corrective action is taken without delay.

- **To be announced**

Employee: All employees are required to comply with the project site safety rules. They are expected to be an active participant in the safety and health program. They are to perform all tasks in accordance with established policies, procedures, and safe work practices. Employees shall perform daily safety inspections of their work area or as conditions change throughout the day. Employees must also perform inspections of tools and equipment to identify any hazards. All employees are required to report all incidents/accidents and unsafe conditions to their supervisors without fear of reprisal.



B. LINES OF AUTHORITY

The overall lines of authority concerning safety and health will be as follows:

- 1.**
- 2.**

SECTION 6
Subcontractors and
Suppliers



SECTION 6: SUBCONTRACTORS AND SUPPLIERS

A. IDENTIFICATION OF CURRENT SUBCONTRACTORS

List of Subcontractors to be inserted here

B. CONTROLLING AND COORDINATION OF SUBCONTRACTORS AND SUPPLIERS

Suppliers will be under close supervision during material delivery and pick-up. Communication with suppliers will be important to ensure loads are put in designated areas, and supplier is made aware of any immediate hazards in the area he/she will be in. A project schedule has been coordinated and submitted for approval for the coordination of the scope of work being performed.

C. SAFETY RESPONSIBILITIES OF SUBCONTRACTORS AND SUPPLIERS

Safety is not to be sacrificed for production. Safety must be considered an integral part of the planning process. The goal of the Safety/Management Team, along with Trade Contractors of any tier, is to eliminate accidents. Sletten Construction and Trade Contractors are charged with the responsibility for developing, adhering to, and enforcing the safety and loss prevention program

All subcontractors will be responsible to implement their Site Specific Safety and Health Plan as appropriate for the project, submitting these documents to Sletten Construction Company prior to the start of their activities on the work site. In addition, they will be responsible for adhering to all applicable OSHA, State, Federal and local agencies requirements.

The Subcontractor's employees and supervisors will conform to all rules under the subsections of this manual entitled "SUBCONTRACTORS RESPONSIBILITIES" and will abide by all federal, state, local and contractor regulations, as well as all safety rules and regulations outlined in the contract.

Each subcontractor will submit the name of a job site safety representative to the project superintendent prior to starting work on the job. This representative will be responsible for the safety and health of the personnel employed by their company and its subcontractors. Each safety representative will be required to stop any and all hazardous work being performed by their employees' whenever there is imminent danger to life and/or health. This representative will attend Weekly Safety meetings conducted by Sletten Construction's site superintendent.

SECTION 7: TRAINING

A. SITE ORIENTATION TRAINING/SLETTEN EMPLOYEE TRAINING

PURPOSE: To communicate the Written Workplace Safety Program, policies, procedures, requirements and responsibilities to employees. Training employees ensures that all new employees receive or verifies that formal and practical training has been received prior to beginning work.

General:

The Area/Site Safety Representative or Superintendent is responsible for providing every new employee and Trade Contractors employees with New Hire Orientation Specific to the Project on which they will be performing work, to communicate Sletten's Safety Program Requirements to the employees. Hazards associated with their job will be explained in depth so that the employee will be aware of the safety issues and the required safety equipment. This initial training will be conducted prior to their first day working on the job and topics will include at a minimum:

- Employee Safety Rights and Responsibilities
- Site Emergency Action and Evacuation Plans
- Written Safety Program - Company Safety Policies and Procedures
- Job Hazard Analysis
- Accident and Incident Reporting and Investigation Procedures
- Unsafe Acts or Condition Reporting
- Required PPE including Task Specific PPE
- Slip, Trip and Fall Protection Safety – Fall Protection is required 100% of the time when a worker is exposed to a fall hazard of six (6) feet or greater.
- Ladder Safety
- Excavation Safety
- Job specific and equipment specific training on each Forklift, Snorkel Lift, Scissor lift and Maintenance Safety for each.
- House keeping
- Power and Hand Tool Safety
- Inspecting and Reporting Defective machines, tools and/or equipment and immediately taking them out of service for repair or replacement.
- Global Harmonization Program/Safety Data Sheets
- Fire Prevention and Hot Work Procedures
- LOTO
- Stop Work Authority
- Confined Space
- Valley Fever Awareness
- Scaffold Safety
- Silica Awareness
- Site Sanitation
- Housekeeping, safety and productivity go hand-in-hand. You are responsible for keeping your work area clean.
- Employees are expected to role model safety by “Leading by Example” at all times.

- Personal radios, I-Pods or similar devices are prohibited from use on the project.
- Fighting, creating a disturbance, horseplay or sexual/racial remarks **WILL NOT BE TOLERATED.**
- Undesirable conduct including, but not limited to the following will not be tolerated and may result in a disciplinary action, up to and including discharge from the project:
 - a) Unauthorized possession of any project property or material
 - b) Possession of or use of intoxicants on premises
 - c) Engaging in disorderly conduct
 - d) Gambling
 - e) Sleeping on the job during working hours
 - f) Repeated failure to wear or use required safety equipment
 - g) Failure to observe safety, sanitary or medical rules and practices
 - h) Possession or use of firearms, weapons, or explosives on the project premises
 - i) Willful defacing or damaging of equipment, tools, material or other property belonging to Sletten or any other Trade Contractor
- Visitors will be required to wear at all times while on the project, hard hat, ANSI approved safety vest and ANSI approved safety glasses, long pants, shirts with sleeves at least 4 inches and work boots (no tennis shoes). All safety rules and regulations must be observed at all times by visitors.
- Slips, trips, and falls
- Heat Illness Prevention (if applicable)
- PPE – Hard hats, work boots, and ANSI safety glasses will be worn at all times on the construction site. A safety vest or a safety green or a safety orange shirt will be worn at all times. For any crew working a second or third shift a reflective vest or shirt with high visibility reflective stripes is required at all times. Long pants, shirts with sleeves at least 4 inches shall be worn at all times by personnel on the work-site.
- Hot work permit procedures will be strictly adhered to at all times. Any violation to the Hot Work Procedures will result in immediate removal from the job. Hot work permits will be obtained from **to be announced**. All hot work permits will be obtained prior to the beginning of ANY hot work.
- All employees will present a current OSHA 10 or OSHA 30 card to Sletten prior to entering the jobsite on Nevada sites.
- Parking will be located **to be announced**
- There is no drinking alcoholic beverages in the parking garage or on site.
- All employees are required to attend a weekly tool box safety briefing each week.
- No glass containers are allowed on the jobsite at any time.

SECTION 8: EMPLOYEE ACKNOWLEDGEMENT FORM

Employee Acknowledgement

I have received, read, and understand the policies outlined in the site specific safety rules and the site specific orientation for ***Insert Project Name***. I agree to abide by all of the site specific safety rules set forth. I also agree that abiding by the site specific safety rules are a condition of employment. When in doubt with any safety rule or requirement I will speak to my supervisor immediately.

Print Name	Date
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Signature	Company
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OSHA Card Number	Issue Date
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SECTION 9: SAFETY INCENTIVE PROGRAM

INTRODUCTION

The health and welfare of Sletten Construction employees has to be priority one. Misdirected employees may take short cuts, decide to forgo safety precautions, and determine that production is more important than following company safety procedures, and in turn cost the company tens of thousands of dollars in lost time and medical costs. In today's fierce competitive world, where a company's E-mod rating is so important, companies cannot survive unless employees clearly understand and are committed to working safely to achieve company goals. Closer to home, our direct and indirect job costs, as well as cost of doing business are known to increase in direct proportion to accident frequency ratings.

Sletten Construction's Safety Program starts with the superintendents, who are to encourage and promote behaviors that support the Health and Safety Program as well as the development of a positive health and safety culture. Accidents can be prevented through planning, training, and most of all, a cooperative effort in all areas of our jobsite operations. In addition to our safety program, and a further effort to prevent death, injury and unnecessary hazards to our employees; loss of production time and damage to equipment; and to increase our competitive position, Sletten Construction has established the following Safety Incentive Program.

PROJECT HOURLY EMPLOYEES

1. As an accident-free employee of Sletten Construction Company, you become an active participant in our Safety Incentive Program.
2. The following criteria will be the basis of the program:
 - a. Each week that is completed on your project without experiencing a reportable accident, you and your co-workers, who were on the job a minimum of 36 hours, will be issued a token worth \$5.00. However, if a reportable accident has occurred, tokens will not be issued for that week.
 - b. Should you experience an accident that is not considered reportable, but the accident caused you to visit a doctor for a check-up or for a one-time treatment, you will not receive a token for that week, but your co-workers will.
 - c. In addition to working safe, you will be required to sign your time card each week. If your time card is received in payroll without your signature, you will be ineligible to receive a token for that week. **NOTE: It is your**

responsibility to sign your time card, not the superintendent, foreman or secretary.

- d. If the jobsite receives more than one serious citation during an OSHA or Sletten Safety Audit, the jobsite loses the Safety Tokens for that week.
- e. Employees, who may be short-term on the project, i.e. one to three weeks, may desire to sell or trade their tokens with co-workers.

POLICIES AND PROCEDURES REGARDING NONCOMPLIANCE

Sletten Construction Company believes its employees have a genuine desire to perform top quality, time effective and safe work and that the Health and Safety program as a whole will provide them with the skills to accomplish that work. Our goal is not to use these discipline guidelines to bring about safe work activities. The goal is to provide the company and its workers protection against those individuals who refuse to act in a consistently safe manner.

When discrepancies in safety compliance are discovered, supervision shall first ensure that the proper training and supervision existed. When the employer determines that the worker was provided with everything necessary for them to safely perform their job but they were still noncompliant, disciplinary actions may then be appropriate.

The severity and frequency of a safety violation can vary greatly and it is the responsibility of supervision to determine the appropriate course of action depending on the severity and frequency. Minor infractions may be corrected with little or no disciplinary action to the employee. Severe (fall protection) or repeat minor infractions may necessitate immediate termination if the employee was properly trained and knew better but still chose to violate the rule.

The below guidelines are based on significant safety infractions however actual disciplinary actions must be determined based on the above considerations.

Disciplinary action will be taken by the Sletten Construction to correct violations of its policies and procedures and/or unsatisfactory performance. The disciplinary procedure for minor infractions will be as follows:

- 1st Offense:** Verbal Warning
- 2nd Offense:** Written Warning
- 3rd Offense:** Written Warning with Suspension
- 4th Offense:** Dismissal

An employee may be terminated for any of the following:

- 1. Insubordination
- 2. Poor job performance

3. Failure to follow safety practices
4. Excessive tardiness/absenteeism
5. Falsification of any records
6. Destruction of company property
7. Theft
8. Use of Alcohol or drugs on property
9. Unlawful leave of absence

Termination requires the prior approval of an officer of the company. To ensure a fair and impartial system, all employees will be given additional safety instructions/training as needed after receiving a safety violation notice. Noted violations, and any associated disciplinary actions will be documented in the employees' personnel file.

Additional instruction may include reviewing the appropriate manuals, procedures, etc. All additional must be documented and become a part of the employee's personal folder. All reports of discipline must be reviewed and signed off by the personnel director or the operations manager.

SECTION 10: PLAN FOR PREVENTION OF ALCOHOL AND DRUG ABUSE

Due to the nature of our work, it is critical that all employees are free from the adverse effects of drugs and/or Alcohol. The company is committed to providing a safe workplace for all its employees. The goal of this policy is to maintain a safe and secure work environment that is free from the effects of Alcohol and drug abuse.

The intent of this policy is to be responsive to the employees' health needs by the early recognition and treatment of chemical dependency problems and behavioral / medical disorder, and to support the rights of the company and its employees to work within an Alcohol / drug free environment.

All new Sletten employees will be required to submit to the approved drug and alcohol pre-employment test as prescribed in the Sletten Corporate Safety Manual.

Any employee involved in an accident/incident will be subject to post accident/incident drug testing.

At the project management's discretion if an employee is suspected of being under the influence of drugs or alcohol a "reasonable" suspicion drug test may be required.

Therefore, the following actions are strictly prohibited and will prompt disciplinary action up to and including consideration for immediate discharge:

- The illegal use, sale, arranging for sale, possession or manufacturing of narcotics, drugs or controlled substances while on the job or on airport property.
- The use of Alcohol or illegal drugs while on the job site.
- Arriving at work or working under the influence of Alcohol or illegal drugs, narcotics or controlled substances.
- Any illegal substance confiscated pursuant to this policy will be turned over to the proper authorities.
- This policy is not applicable to physician prescribed drugs. Employees on such medication(s), which may adversely affect their job performance, should promptly discuss the matter with their supervisor. Failure of the employee to so notify their supervisor can result in disciplinary action including discharge. It should be noted that while legal, prescribed drugs could adversely affect the safety of the employee and other employees on the site. All Sletten Construction employees are drug tested before hiring, periodically, and annually.
- Personnel who test positive due to a pre-employment test, will be immediately terminated and will not be allowed back on the job site during the duration of the project. (The reason for termination will be **"Failure to comply with Company policy"**.)

SECTION 11: ACCIDENT REPORTING

All accidents shall be reported to the General Superintendent and the Safety Division Officer assigned to the Project as soon as feasible.

- Tom Morano 702.236.6365
- Lenore DiStefano 702.994.6365

INCIDENT/ACCIDENT NOTIFICATION, INVESTIGATION AND DOCUMENTATION

PURPOSE: To provide appropriate notification, investigation and documentation of all incidents.

A. Requirements

- a. Sletten Construction's Safety Management team has the responsibility to ensure that the notification of all reportable incidents is made to the appropriate parties and that the investigation is complete and accurate.
- b. When an incident occurs, treatment for injured people and securing the scene is paramount. The focus of the investigation shall be to determine the root cause and develop preventative measures.

B. Notification

Employees shall **immediately** report all injuries/illnesses regardless of severity to their supervisor. Their supervisor will in turn report immediately to the Project Superintendent.

1. The senior project superintendent shall immediately notify the safety director, project director, safety manager and/or the senior vice president of Operations if any of the following occur:
 - a. **An injury severe enough for a 911 call.**
 - b. **Any incident that may attract media/public attention.**
 - c. **Significant damage to property/material/equipment.**
 - d. **Other incidents that may have potential legal implications.**
2. Depending on the severity of the incident, the senior project superintendent shall also notify the appropriate individuals in accordance with the **Emergency Action Plan (EAP)**.
3. For incidents/injuries where a 911 call is not necessary notification to the Site Safety Representative shall be accomplished by reporting the incident as soon as feasible via telephone or email and followed up with a completed Accident Investigation report within 24 hours.

4. For all incidents involving a Sletten vehicle (or rental vehicle while the driver is on company business), the employee shall immediately report the incident to the Safety Director within 24 hours.
5. In the event of a Sletten employee fatality, OSHA shall be notified within eight hours, in the event of an in-patient hospitalization of one or more Sletten employees, amputation or loss of an eye, OSHA shall be notified within twenty-four (24) hours. The notification shall be made by the Safety Director to the local office or to the national OSHA hotline (1-800-321-OSHA) or electronically at osha.gov. If the fatality/hospitalization involves subcontractor employees, the respective subcontractor is responsible for notifying OSHA.¹
6. The President, Vice President of Operations, Senior Official or his designee, shall notify the director of Corporate Communications whenever an incident may attract media attention.

Non-Emergency Medical Attention or Sletten Employees

1. If an employee requires non-emergency medical attention, the Site Safety Representative or Superintendent shall contact On Site Health & Safety at (866) 998-2750. If they are unavailable the injured worker shall be sent to the Medical Facility designated in the Project Specific Safety Plan.
2. The injured employee is required to take a substance abuse test. This requirement shall be followed for all incidents as allowed by state law and the Sletten Alcohol and Substance Abuse program.
3. The injured employee shall be escorted to the clinic/medical facility.
4. The project superintendent shall follow-up to ensure that the injured employee returned to work following their clinic visit. If the employee fails to return to work by the next day the project superintendent shall attempt to contact the injured employee.

C. Investigation

1. All incidents shall be investigated thoroughly enough to complete the required information on the Sletten Injury Incident Report.
2. Incidents are extremely varied and the level of investigation will depend on the degree of injury or the severity of the incident. If deemed necessary or directed by senior management, an analysis will be conducted to determine root cause.
3. Site personnel will typically conduct the investigation with assistance from the site safety representative.
4. Extreme care shall be taken to insure that the incident scene is disturbed as little as possible prior to the investigation. The incident scene shall be secured as soon after the incident as possible to preserve all evidence. Securing the scene may include measures such as:

- a. **Erecting barricades**

- b. Having security monitor the scene 24 hours a day, when feasible or practical.**
 - c. Restricting access to authorized personnel only**
 - d. Taking Photographs**
 - e. Video Taping**
5. The investigator shall make a sketch of the area indicating the location of the injured person, equipment being used, material in the area, people in the area, and shall include any other pertinent information. Photographs shall be taken of the area and equipment and shall show different angles of the incident scene.
 6. Witnesses to the incident shall be taken to a quiet area, separated, and given a witness statement form to fill out. It is extremely important that witness statements be taken as soon as possible after the occurrence, while the facts about the incident are still clear in their minds. Of equal importance, witnesses should be asked not to converse with others until they have completed a written statement and/or interviewed. Witness statements shall be reviewed with the witness to ensure accuracy and completeness. Each statement shall be signed and dated by the witness and signed and dated by a company representative witnessing the statement.
 7. Corrective action shall be identified in the written report as well as the status and any necessary follow-up of the corrective action.
 8. The investigation shall be completed within 24 hours of the incident and submitted to the Site Safety Representative or Senior Project Superintendent.

SECTION 12
Administration and
Responsibility

SECTION 12: ADMINISTRATION AND RESPONSIBILITIES

PURPOSE: To provide a description of the general administration of safety and specific safety responsibilities of all employees.

A. Expectations

Trade Contractors, of any tier, have the explicit responsibility to perform work in accordance with Federal, State, Local Laws, Ordinances, Codes, Regulations and these Safety Standards, affecting Safety and Health. This is in addition to compliance with the individual companies own requirements. Trade Contractors are at a minimum accountable for fulfilling the responsibilities listed in this section.

In the case of conflict between codes, reference standards, drawings and other Contract Documents, the most stringent requirements shall govern.

Trade Contractor's Competent Persons

Each Trade Contractor shall have a designated Safety Representative or Competent Person (CP) on-site when work is being performed and assigned the responsibilities of managing all aspects of safety related to employees under their direct control. The Trade Contractor's CP must be able to meet OSHA Federal Regulation 29 CFR 1926.32(f) which defines a CP as "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". Competent Person shall meet OSHA standards.

These duties may be performed by a Field Superintendent or Foreman having the required training, experience and qualifications. These employees may have duties other than safety provided appropriate adherence to Federal, State, Local Laws, Ordinances, Codes, Regulations and these Safety Standards are followed by personal under their direct control.

Safety Committee

The committee shall be comprised of selected representation from employees and management. The committee will have a higher representation from employees than management.

The terms of the members should be for a minimum of six (6) months. Terms are to be staggered and should a vacancy occur, a new member will be selected.

The chairperson will be elected by the safety committee.

The committee will meet each quarter with date, time, and location determined at the end of each meeting.

Attendance and subjects discussed should be documented and maintained on file for a period of three (3) years.

The responsibilities of this committee include a review, at a minimum, of the following areas:

- a. Reviews accident, incident and near misses.
- b. Report unsafe conditions and suggest corrective actions.
- c. Open safety observation notices and program trends.
- d. Contribute ideas and suggestions for improvements in safety.
- e. Make periodic facility safety audits.
- f. Work safely and influence others to work safely.
- g. Sponsor and coordinate contests poster programs safety drives, supply other informational materials that can help to promote safer operations.
- h. Build enthusiasm for safety programs.
- i. Propose and Create safety checklists.
- j. Construction plans and job hazard analyses for upcoming work;
- k. Construction look ahead for planning/coordination with other projects;
- l. Status of training programs and toolbox talks;
- m. Status update on Environmental Performance Commitments;
- n. Review performance of the Program

SECTION 13: DATA REPORTING

PURPOSE: To define the requirements for proper documentation of appropriate records listed below.

Requirements:

A. General

Sletten and each Trade Contractor's Safety Representative shall monitor the safety training of their employees to ensure the Competent Person is providing proper and adequate training for employees to accomplish their jobs safely.

B. Documentation

All training events, including Record of Orientation, shall be thoroughly documented by Sletten and maintained in each employee personnel file and the projects records accordingly.

Records of each training event attended by Sletten Personnel shall be maintained in each employee personnel file.

Trade Contractor training records and Record of Orientation shall be maintained in the project records.

Training documentation shall include, at a minimum, the date, subject, location, attendees name and signature, a description of the training provided and name of trainer.

C. Record Keeping

Proper documentation and record keeping of safety and related functions are essential. All required documentation shall be maintained on site, available to the Sletten Management Team upon request. The Trade Contractors Project Manager/Superintendent is responsible for ensuring that record keeping and related requirements are accurate and up-to-date.

D. OSHA 300 Log

All injuries classified as a medical treatment, LWDC, RWDC, or fatality and all illnesses shall be logged on the OSHA 300 log. Directions for completing the log are found on the back of the log and in 29 CFR 1904. OSHA 300 logs shall be sent to the Division Safety Director in January. OSHA 300 logs shall be retained in the Division Safety Directors office, on the project and in the Trade Contractor's Corporate Office.

E. Weekly Tool Box Meetings

Weekly Tool Box Meetings shall be conducted by each Trade Contractor for employees on the job. Copies of attendance records shall be forwarded to Sletten.

TOPICS DISCUSSED SHALL BE PERTINENT TO THE WORK ACTIVITIES AND SAFETY ISSUES ANTICIPATED TO BE ENCOUNTERED DURING THE WEEK FOLLOWING THE MEETING.

SECTION 14: DOCUMENTATION MATRIX

	Immediate	Prior to Mobilization	Annually	Monthly	Weekly	Per Request/Use
Annual Crane Inspection			X			
Chemical Inventory						X
Daily Crane Inspection						X
First Report of Injury	x					
Incident Investigation	x					
SDS Updates (MSDS)						X
OSHA 300 Log				X		X
Site Specific Safety Plan		X				X
Safety Training						X
Toolbox Safety Meetings					X	
Daily Equipment Log						X
Ladder Inspections						X
Sling/Wire Rope Inspection				X		X
Fire Extinguisher				x		X
Job Hazard Analysis		X				X
Electrical Junction Boxes				X		X
First Aid Kits				X		X

SECTION 15: PLANNING AND HAZARD ASSESSMENT

PURPOSE: To provide identification and control the risk of occupational and environmental hazards that may be encountered on job-sites.

A. Requirements

- a. In order to evaluate and control potential hazards, the Sletten Director of Safety shall ensure that employer's management processes, supported by written plans and procedures are developed and implemented where required by regulation, or company procedure.
- b. The Trade Contractor's Project Manager, Project Superintendent, and Competent Person shall establish a schedule for frequent, documented work area evaluations (inspections) to identify behavior(s) and/or conditions that need corrective action or warrant positive promotional recognition.

B. Site Specific Safety Program (SSSP)

1. Each Trade Contractor shall have an effective and written Site-Specific Safety Program in accordance with OSHA requirements. This Site-Specific Safety Program shall also include, but not be limited to, the following site-specific components as they apply to the Employer's work:
 - a. Safety and Health Policy Statement
 - b. Assignment of accountability and responsibilities for key personnel responsible for implementation of the safety program
 - c. Identification of Competent Persons and Qualified Persons
 - d. Scope of work evaluation
 - e. Hazard/Risk/Exposure Assessment
 - f. Control Measures / Activity Hazard Analysis
 - g. Procedures for effectively communicating safety and health matters to employees
 - h. Progressive Disciplinary Action Program
 - i. Workplace Hazard Identification Inspection and Corrective Action Program
 - j. Safety Training Program (including provisions for supervisory and craft employee training)
 - k. Project-specific employee Safety Orientation Program
 - l. Provisions for maintaining orientation, training, inspection, corrective action and investigation records
 - m. Global Harmonization Program - To include Safety Data Sheets for all products at the site
 - n. Job Safety Analysis (Job Hazard Analysis) Program
 - o. Emergency Response and Evacuation Plan
 - p. Fire Prevention Program
 - q. Hot Work Program
 - r. Drug Free Workplace / Substance Abuse Prevention Program
 - s. Incident Investigation Program
 - t. Near Miss Incident Investigation Program

- u. Fall Prevention Program - Training and rescue shall be addressed in the Fall Protection Program
- v. Scaffold Safety - Scaffold Inspection, scaffold erector training, and scaffold user training shall be addressed in the Scaffold Safety Program
- w. Confined Space Entry Program
- x. Lock-out/Tag-out / Control of Hazardous Energy Program
- y. Excavation Safety Program
- z. Site Logistics Plan
- aa. Other written programs required by this and other contract documents or regulatory agencies
- bb. Trade Contractor is required to conduct their own safety orientation in regards to their Site Specific Safety Plan.

C. Job Hazard Analysis (JHA) and Pre Task Planning (PTP)

1. A Job Hazard Analysis (JHA) is designed to assist supervisors and employees in identifying and minimizing hazards prior to beginning tasks.
2. A JHA is to be developed by every employer for their respective task(s). A properly executed JHA will help employees recognize hazards, identify training needs, and plan their work; thereby, ensuring a safer and more efficient work process.
3. At a minimum the JHA process should list all specific job steps and create a checklist to identify possible hazards:
 - a) Include each step
 - b) Describe each step in adequate detail.
 - c) Include inspection and use of protective equipment.
 - d) Detail job set-up procedures.
 - e) Include the condition, use, and Safety of equipment and machinery.
 - f) Identify any machine parts or exposures that could create risk of injury.
 - g) Detail actual steps followed while performing the job to identify any movements or positions that could create risk of injury.
 - h) Note procedures to follow when it's necessary to shut down equipment.
 - i) Include organization and placement of parts, tools, etc.
 - j) Identify hazards created while performing the job (dust, chemicals, heat, excessive noise, falls, cave-ins, falling objects, floor openings, etc.)
 - k) In case of Emergency follow the EAP.
4. Determine the best way to eliminate/abate identified hazards:
 - a) Fix clear-cut problems, such as replacing missing machine guards.
 - b) Seek ways to eliminate, combine, or rearrange job steps to eliminate or reduce hazards.
 - c) Identify equipment that could be used to reduce the hazard(s).
 - d) Change tools, add ventilation, or make other physical changes to reduce the hazard(s).
 - e) Detail new job steps to follow after changes are made.
 - f) Identify hazards that can't be reduced and seek ways to eliminate the job or do it less often.

D. Emergency Action Plan (EAP)

1. Sletten Construction will develop an Emergency Action Plan for the Project, to be followed by all trades associated with the project addressing, at a minimum, locations of all emergency egress routes, emergency vehicle access routes, alarm systems, evacuation routes, post-evacuation assembly locations and personnel accounting and response to medical emergencies and incidents.
2. The Emergency Action Plan shall be communicated to all first-line supervisors, and shall be posted throughout the jobsite and Trade Contractor shanties, and be communicated to workers during the Safety Orientation and weekly safety meetings.
3. Each Trade Contractor shall maintain the following documents at their jobsite office, and shall make them available to all responders:
 - a) In case of emergency there will be a twenty-four hour contact list for project supervisory staff
 - b) Site plans identifying stairs, scaffold stairs, hoist, flammable and combustible storage, compressed gas cylinder storage
 - c) Copies of Material Safety Data Sheets
4. The EAP contains:
 - a) The names of the individuals involved in accident response and the role that each individual has in the response program.
 - b) A site plan showing the locations of access routes, first aid kits and evacuation collection areas.
5. The EAP shall be distributed to key personnel and posted at conspicuous locations on-site.

Emergency Action Plan/Emergency Response

The site shall comply with the Emergency Action Plan (EAP) for direction of emergency transportation.

In the event of a medical emergency requiring medical response, immediately call “911” and clearly give your name, location and nature of the incident. Stay on the line until the operator releases you.

In the event of a medical emergency that does not require emergency medical response, take the injured employee to the medical provider/clinic designated by the site.

SECTION 16: EAP Template

Sletten Construction of Nevada, Inc.
EMERGENCY ACTION PLAN

Project Name
SCN Project #

STEP 1.

Co-worker or closest person to injured worker:

- Notify closest SUPERINTENDENT/FOREMAN or individual with a cell phone.
- *Do not move injured person or allow them to try and move*

STEP 2.

FOREMAN:

- Contact a Sletten Safety person or person of Sletten Management via by cell phone.
 - Insert Name, Superintendent, Insert Phone Number
 - Insert Name, Assistant Superintendent, Insert Phone Number
 - Insert Name, Site Safety Representative, Insert Phone Number
- Advise Sletten Safety/Management of location, nature and extent of injury (Give the exact location of the injury)
- Make sure the area is safe from further possible injuries.
- Clear the immediate area, stop all work. (However, attempt to preserve the accident site as much as possible.)
- Stay with the injured person to monitor any changes in their condition and help keep them calm.

NOTE: If it is obvious that an ambulance is necessary anyone with a cell phone may make the call to 911. Stay on the phone with the 911 operator until they advise it is ok to hang up.

STEP 3.

Safety:

- Proceed to location of injured worker.
- Call 911 if necessary. If 911 is not necessary, but injury is beyond First Aid, worker must be taken to the clinic by Subcontractor's Safety/PM/SUPT/ENGINEER/GF or other qualified staff.
- Advise Ambulance or Fire Dept which gate/street to enter. (ie. Gate # etc ...)
- Notify Sletten Safety/PM/SUPT/ENGINEER/GF or other qualified staff

STEP 4.

Safety/Sletten Management:

- Proceed to gate as needed.
- Ensure site access roads are clear for ambulance to enter.
- Escort ambulance/emergency vehicle/personnel on to the site.

STEP 5.

IMPORTANT:

- During the Emergency, all work in the vicinity of the emergency and near access routes will cease.
- All workers shall leave the immediate incident scene, unless they are assisting the emergency workers in some way.
- All workers must follow the EMERGENCY EVACUATION PLAN if the incident is of a catastrophic nature.

EMERGENCY EVACUATION PLAN / SITE MAP

In the event of a catastrophic event requiring the evacuation of the jobsite:

- Evacuation notification will be by the incident commander by radio, cell phone and word-of-mouth and a constant sounding of horns.
- All workers proceed to evacuation assembly area: Emergency Evacuation Point – Staging Area.
- **DO NOT** leave Muster Area until you are accounted for and have been instructed to do so by your supervisor.
- Each Company is responsible to account for all workers to Sletten Companies supervision.

Rev # (Date)

Insert Site Map with Emergency Evacuation Point(s) and Emergency Project Access/Egress point(s) locations below.

SECTION 17
Worksite Inspection
Procedures

SECTION 17: WORKSITE INSPECTION PROCEDURES

PURPOSE: Inspections and procedures for correction and control provide a method of identifying existing or potential hazards in the workplace, and eliminating or controlling them.

Worksite Supervisors are responsible for walking their sites and conducting an informal inspection and completing an inspection form daily.

The Site Safety Representative is responsible for conducting formal weekly or monthly inspections, but depending upon additional factors such as the operations involved, the magnitude of the hazards, the proficiency of employees/sub-contractors, changes in equipment or work processes, and the history of workplace injuries and illness. The Director of Safety will determine when inspections should occur more frequently, based on the factors above.

When a hazard is found to be an imminent threat to life, health, or property the Site Safety Representative, Manager or Worksite Supervisor shall take action immediately to stop work and remove personnel from the danger. Work will not commence without the abatement of the hazard.

Corrective actions will include such measures as operational changes, physical changes, and training sessions.

All inspection records are to be forwarded to the Safety Director and to be kept on file for the duration of the project.

Sletten Companies

Safety Related Programs, Plans and Documentation

TABLE OF CONTENTS

II. **Templates/Forms**

- 1 Confined Space Forms
- 2 Critical Lift Plan
- 3 Employee Acknowledgement Form
- 4 Hot Work Permit
- 5 Incident/Accident Investigation Report
- 6 Respiratory Protection Forms
- 7 Attachmen Hazard Assessment Log
- 8 Attachmen Respiratory Prtection Hazard Assessment and Selection Form
- 9 Attachmen Respiratory Prtection Hazard Assessment and Certification Form
- 10 Attachmen Respirator Inspection Checklist
- 11 Attachmen SCBA Inspection Checklist
- 12 Attacheme Emergency Potential Log
- 13 Attachmen IDLH Assessment Log
- 14 Safety Meeting Documentation Form
- 15 Scaffold Inspection Checklist
- 16 Subcontractor Competent Person Designation Form
- 17 Subcontractor Equipment and Scaffold Agreement

Confined Space Entry (Construction)

REVISION 04

ISSUE DATE 08-15-2015

APPENDIX D: CONFINED SPACE PERMIT (FRONT VIEW)

CONTRACTOR:		PERMIT EXPIRATION TIME:			
CRAFT:		PERMIT EXPIRATION DATE:			
DESCRIPTION OF CONFINED SPACE:					
DESCRIPTION OF WORK TO BE PERFORMED:					
NATURE OF HAZARDS EXPECTED (check all that apply)		REQUIREMENTS FOR ENTRY AND WORK			
Oxygen deficiency		Respiratory Protection (specify)			
Flammable vapors or gasses		Protective clothing (specify)			
Oxygen enrichment		Lifeline and escape harness			
Toxic air contaminants		Tripod			
Corrosive materials		Fire extinguisher			
Engulfment		Lighting appropriate for conditions			
Mechanical equipment		Non-sparking tools			
Electrical shock		Continuous air monitoring for:			
Other (specify)		Continuous ventilation with fresh air			
Other (specify)		Other (specify)			
PREPARATIONS PRIOR TO ENTRY		AUTHORIZED ENTRANTS	AUTHORIZED ATTENDANTS		
Affected departments notified					
Tank drained or contents of space removed					
Space isolated					
Energy sources locked out					
Energy sources locked out					
Stored energy relieved (Zero Energy State)					
Hot work permit obtained					
Area around confined space secured					
Space atmosphere tested (recorded below)					
Space purged with fresh air			ENTRY SUPERVISORS		
Air monitoring equipment available/calibrated					
Employees briefed on hazards					
Communication with entrants established					
Rescue equipment available					
AIR TEST WITHIN CONFINED SPACE (Record periodic monitoring results on Appendix E, Monitoring Log)					
TEST	ACCEPTABLE	RESULTS	TEST	ACCEPTABLE	RESULTS
Oxygen	19.5 – 23.5%		SO2	2 ppm	
Flammables	Less than 10% LEL		Toxic (specify)	Less than PEL or TLV	
CO	35 ppm		Toxic (specify)	Less than PEL or TLV	
H2S	10 ppm		Toxic (specify)	Less than PEL or TLV	
Air Test Conducted by:			Title:		
Date:			Time:		
ENTRY AUTHORIZATION (to be completed by the entry supervisor) I certify by my signature that all necessary precautions have been taken and that the authorized entrants have been briefed specifically for this confined space entry.					
DATE:		TIME:		NAME: (print)	
TITLE:			SIGNATURE:		
NOTE ANY PROBLEMS ENCOUNTERED DURING ENTRY					

Confined Space Entry (Construction)

REVISION 04

ISSUE DATE 08-15-2015

**APPENDIX E: MONITORING LOG
 ENTRANT LOG**

ENTRANT NAME	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT
	:	:	:	:	:	:

ATTENDANT AND SUPERVISOR LOG

ATTENDANTS NAME	ON DUTY	OFF DUTY	ENTRANT SUPERVISOR'S NAME	ON DUTY	OFF DUTY

AIR MONITORING LOG

AIR MONITORING TEST	ACCEPTABLE	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS
Oxygen	19.5 – 23.5%						
Flammables	Less than 10% LEL						
CO	35 ppm						
H2S	10 ppm						
Toxic (specify)	Less than PEL or TLV						
Toxic (specify)	Less than PEL or TLV						
Toxic (specify)	Less than PEL or TLV						
DATE:	TIME:	:	:	:	:	:	:
Initials of person conducting atmospheric tests:							

SLETTEN CONSTRUCTION CRITICAL LIFT PLAN

Critical Lift Determination

The decision to designate a lift as a critical lift is a management decision. Guidelines provided here are intended to aid in making that decision. A lift should be designated as a critical lift if dropping, upset or collision could cause or result in any one of the following:

1. Damage would result in serious economic consequences.
2. Damage that would result in unacceptable delay to schedule.
3. Undetectable damage that would jeopardize future operations or safety of a project.
4. Significant release of radioactive or other hazardous material to the environment or creation of an undesirable condition.
5. Personnel injury or significant adverse health impact, either onsite or offsite.
6. In addition, a lift that meets one of the following criteria shall be designated as a critical lift:

a. Any lift that requires the use of multiple cranes.

b. Any lift that exceeds 75% of the crane's rated capacity within the lift configuration of the crane.

c. The item to be lifted requires exceptional care in handling because of size, weight, close tolerance installation, high susceptibility to damage or other unusual factors.

d. The item, although non-critical, requires exceptional care in handling because it is being lifted above a critical item.

Project Name: _____ Project Number: _____

Date: _____ Prepared By: _____

I. CRANE DATA

1. Make and Model# _____ EQ #: _____ Operator _____

2. 2nd Crane Make & Model# _____ EQ# _____ Operator _____

3. Crane Type/Capacity: Crawler - Lattice boom- Capacity: _____

Carrier - Lattice boom- Capacity: _____

Hydraulic- Telescoping boom- Capacity: _____

Other - Boom type _____ Capacity: _____

4. Lattice Boom Model & Type: _____ Angle Chord _____ Offset Tip
 _____ Tubular Chord _____ Tapered Tip
 _____ Hammerhead

5. Boom Length: _____ ft. 6. Jib Model: _____ Jib Length: _____
 Offset _____

7. Counter weight Configuration: _____, _____ lbs.

II. LOAD CAPACITY

Precise load calculations must be performed and documented.

8. Exact load weight: _____ lbs. 9. Size of load: _____

10. Calculate Total Load

TOTAL LOAD = EXACT LOAD + RIGGING

_____ lbs. Exact Load Weight
 + _____ lbs. Rigging Weight (i.e. shackles, slings, picking beams)
 + _____ lbs. Main Block
 + _____ lbs. Effective jib weight
 + _____ lbs. Cable
 + _____ lbs. Headache Ball
 + _____ lbs. Other
 = _____ lbs. Total Load

11. Maximum Load Radius _____ ft. 12. Maximum Boom Angle _____

13. Minimum Load Radius _____ ft. 14. Minimum Boom Angle _____

Calculate parts of line required: Total Load / 2000 = _____ Tons

III. RIGGING

15. Sling Construction: DIA Inches _____ # of Parts _____

16. # of Legs _____ 17. Sling Angle _____ 18. Sling Capacity _____ lbs.

19. Means of Fastening Sling or Hoist Hook to Load _____

20. Capacity of Fasteners (i.e. Shackle, picking eye, etc) _____ lbs

IV. PRELIFT REQUIREMENTS (ALL MUST BE ANSWERED YES)

(check mark indicates yes)

21. _____ Load chart Utilized for exact crane model, boom type and length

22. _____ Competent person in charge of lift: Name: _____

Title: _____

23. _____ Competent Signal Person: Name: _____

Title: _____

24. _____ Pre-Lift meeting held with crew.

25. _____ Written daily crane inspection completed.

26. _____ Swing path not over personnel.

27. _____ Footing is sound and level.

28. _____ Pre-planning for radio or hand signals communications.

29. _____ Minimum clearance from power lines can and will be maintained

(Under 50KV-10' clearance Opt 1, Over 50 KV-20' clearance)

- 30. _____ The Load radius has been measured with a tape.**
 - 31. _____ Wind speed does not exceed 20 mph.**
 - 32. _____ Load will not touch boom at any time.**
 - 33. _____ During multiple crane lifts, neither crane shall exceed 75% of the
Manufacturers rate capacity.**
 - 34. _____ If on barge, the competent person has reviewed stability and potential lift conditions.**
 - 35. _____ Tag lines are long enough, tied only to the load, and in good condition-loose end
controlled by designated person.**
 - 36. _____ Operating locations are far enough away from shoring, excavations and trenches to
eliminate risk of collapse.**
 - 37. _____ Outriggers or crawler tracks are fully extended and wheels are clear of ground.**
 - 38. _____ Application of blocking under outrigger pads has been carefully considered.**
 - 39. _____ Adequate swing clearance (min 2") between the counterweight and any obstacles.**
 - 40. _____ Boom composition is correct. (Minimum necessary)**
 - 41. _____ No added counterweight.**
 - 42. _____ Machine is rigged with adequate type of cable & number of parts of hoist line.**
 - 43. _____ Project superintendent has discussed lift with foreman and crew members.**
 - 44. _____ Load block is of adequate capacity & sheaves are of proper size for hoist cable.**
 - 45. _____ All rigging has been inspected for capacity & condition.**
 - 46. _____ Underground structures & conditions have been considered.**
 - 47. _____ When static lines are required, they are installed per plan**
-

Superintendent

Date

Pre-lift Meeting Attendees:

Load Path Sketch:

(Include crane position(s), load path, height of any key points, any surrounding obstructions)



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Employee Acknowledgement

I have received, read, and understand the policies outlined in the site specific safety rules and the site specific orientation. I agree to abide by all of the site specific safety rules set forth. I also agree that abiding by the site specific safety rules are a condition of employment. When in doubt with any safety rule or requirement I will speak to my supervisor immediately.

Print Name

Date

Signature

Company

HOT WORK PERMIT



CONTRACTOR _____ DATE _____

PERSON REQUESTING _____ TITLE _____

WORK TO BEGIN _____ WORK TO END _____
(Date/Time) (Date/Time)

WORK LOCATION _____

WORK DESCRIPTION (Be Specific) _____

- Oxy/Acetylene/LP Gas Welding Other Torch Solder Grinding Cutoff Saw
 Other

PERSON(S) PERFORMING WORK _____
Contact Telephone Number _____

SAFETY PRECAUTIONS

- | | |
|--|--|
| <input type="checkbox"/> *Perform Explosibility Check (_____ %) | <input type="checkbox"/> Barricade Area |
| <input type="checkbox"/> *Oxygen Content (_____ %) | <input type="checkbox"/> Post Signs |
| <input type="checkbox"/> Clear Area of Flammable and Combustible Materials | <input type="checkbox"/> Ground Equipment |
| <input type="checkbox"/> Use Trained Fire Watch/during and 30 minutes after the work | |
| <input type="checkbox"/> Cover Drains/Trenches, etc. | |
| <input type="checkbox"/> Provide Fire Extinguisher (Type _____)(Size _____) | <input type="checkbox"/> Contain Sparks/Slag, etc. |
| <input type="checkbox"/> Provide Water Work | <input type="checkbox"/> Place Shield/Blankets Under/ Around |
| <input type="checkbox"/> Keep Area Wet | <input type="checkbox"/> *Use Respiratory Protection |
| <input type="checkbox"/> *Ensure Adequate Ventilation | <input type="checkbox"/> Use Nonsparking Tools |
| <input type="checkbox"/> Purge System | <input type="checkbox"/> Wear Special Clothing |
| <input type="checkbox"/> Restrict Tools | |

*For confined space activities comply with Confined Space procedures before proceeding. This permit alone is not authorization to proceed with confined space work

Subcontractor Superintendent _____
Signature

Sletten Superintendent or Site Safety Manager _____
Signature

SLETTEN CONSTRUCTION INCIDENT/ACCIDENT INVESTIGATION REPORT

Project information:

Project Name _____ Date of Report _____

Date of Incident _____ Time Incident Occurred _____

Name of Person Who Reported Incident _____ Reported To _____

Date Reported _____ Time _____

Type of Incident: (check all that apply)

Injury Property Damage Vehicle Incident Other _____

Name _____ Date of Birth _____ SS# _____

Employer Name _____

Address _____ Phone # _____

Date of Hire _____ Employee's Occupation _____

Supervisor's Name _____

Place of Injury (Area) _____

Type of Injury and Body Part Affected _____

Is Injury Believed to be Job Related? Yes No Unknown

Recording Information: (check all that apply)

First Aid Only (Provided By) OSHA Recordable Non-recordable
 Restricted Work Lost Work Days (date return to work _____)

Incident Information:

Brief Description of Incident _____

Description of property damage _____

Value of Property Damage _____ Owner of Property/Material _____

Location of Damaged Property/Material _____

Witness(s) _____

Cause Factors:

Weather Conditions: Water Wind Sun
Details: _____

Site Conditions: Mud Dust Lighting Unprotected Hazard
Details: _____

Housekeeping: Debris Cords/Hoses Building Materials
Details: _____

Rules/Regulations: Violation Not Trained Disregarded
Details: _____

Personal Conditions: Physical Mental Prescription Meds Nonprescription Meds
Details: _____

Equipment: Wrong Type Defective Not Trained Missing Guard Improperly Used
Details: _____

Procedures: Unsafe Not Trained Improperly Used
Details: _____

PPE: No Wearing Defective Wearing Improperly
Details: _____

Behavior: Horse Play Body Position Inattention Inexperience
Details: _____

Communication: Inadequate Misunderstood
Details: _____

Planning: Inadequate Unforeseen Situation Unqualified Personnel
Details: _____

Corrective Action:

What actions have been or are planned to prevent recurrence of this or similar incidents?

Report prepared by (print name) _____ Signature _____

Superintendent/Safety Manager _____ Date _____
(Signature)

ATTACHMENT A - 1

Sample Hazard Assessment Log

Hazard Assessment Log				
<u>DATE</u>				
Department	Contaminants	Exposure Level (8 hr TWA*)	PEL**	Controls

* Summarized from Industrial Hygiene report provided by Responsible Person.
** These values were obtained from a survey on average exposures as published in the American Journal of Industrial Hygiene _____.

ATTACHMENT A - 2

**Respiratory Protection Hazard
Assessment and Selection Form**

Agency/Institution: _____

Worksite: _____

General Description of Job Task: _____

Job Classification(s) _____

Level of physical exertion required to perform job: _____

Respiratory hazard(s) present: _____

OSHA PEL: _____ ACGIH TLV (if applicable): _____

Is monitoring data available? _____ Yes _____ No

If yes, attach to this form.

Contaminant concentrations present in the workplace:

Contaminant(s): _____ Concentration: _____

Contaminant(s): _____ Concentration: _____

Contaminant(s): _____ Concentration: _____

Does data indicate levels that exceed applicable limits? _____ Yes _____ No

Do data indicate IDLH concentrations? _____ Yes _____ No

Note: Wherever hazardous exposure(s) cannot be identified or reasonably quantified, the atmosphere must be considered IDLH.

Does data indicate oxygen deficiency (less than 19.5%)? _____ Yes _____ No

Is the respirator for routine use or emergency use? _____

Additional factors (i.e. temperature and humidity levels, etc.): _____

Communication requirements: _____

Are engineering/ administrative controls feasible? _____ Yes _____ No

If no, describe reasons: _____

Type of respirator selected: _____ air purifying _____ atmosphere supplying

Style of respirator selected: _____ tight-fitting _____ lose-fitting

Make: _____

Model# _____

Type of canister or cartridge to be used: _____

Cartridge/canister change schedule if applicable _____

Name of Evaluator: _____

_____ Date: _____

Title: _____ Work

Phone: _____

Signature	Name and Title (print)	Date
------------------	-------------------------------	-------------

ATTACHMENT G - 1

Respirator Inspection Checklist

Type of Respirator:	Location:
Respirator Issued to:	Type of Hazard:
Face piece	<input type="checkbox"/> Cracks, tears, or holes <input type="checkbox"/> Face mask distortion <input type="checkbox"/> Cracked or loose lenses/face shield
Head straps	<input type="checkbox"/> Breaks or tears <input type="checkbox"/> Broken buckles
Valves:	<input type="checkbox"/> Residue or dirt <input type="checkbox"/> Cracks or tears in valve material
Filters/Cartridges:	<input type="checkbox"/> Approval designation <input type="checkbox"/> Gaskets <input type="checkbox"/> Cracks or dents in housing <input type="checkbox"/> Proper cartridge for hazard
Air Supply Systems	<input type="checkbox"/> Breathing air quality/grade <input type="checkbox"/> Condition of supply hoses <input type="checkbox"/> Hose connections <input type="checkbox"/> Settings on regulators and valves
Rubber/Elastomer Parts	<input type="checkbox"/> Pliability <input type="checkbox"/> Deterioration

Inspected by:	Date:
Action Taken:	

ATTACHMENT G – 2
SCBA Inspection Checklist

SCBA Identification Number:

1. Is the Face piece in good condition? <i>Look for these Items:</i>	Yes	No	N/A
• Excessive dirt			
• Cracks, tears, holes or distortions from improper storage			
• Inflexibility			
• Cracked or badly scratched lenses in full face pieces			
• Incorrectly mounted full face piece lens or broken or missing mounting clips			
2. Are the headstraps or head harness in good condition? <i>Look for these items:</i>			
• Breaks in the straps			
• Loss of elasticity			
• Broken or malfunctioning buckles and attachments			
• Excessively worn serrations on the head harness which might permit slippage			
3. Is the exhalation valve in good condition? <i>Look for these items:</i>			
• Foreign material under the valve seat			
• Cracks, tears or distortion in the valve material			
• Improper insertion of the valve body in the face piece			
• Cracks, breaks or chips in the valve body, particularly in the sealing surface			
• Missing or defective valve cover			
• Improper installation of the valve in the valve body			
4. Is the breathing tube in good condition? <i>Look for these items:</i>			
• Damaged, worn or missing end connectors			
• Missing or loose hose clamps			
• Deterioration or the hose material			
5. Is the high pressure air supply in good condition? <i>Look for these items:</i>			
• Air supply lines, hoses, attachments and end fittings worn			
• Valves and air flow regulators inoperable			
• Low pressure alarm inoperable			
• Air cylinder less than full			
• Gauges inoperable			
• Air cylinder damaged			
• Air cylinder hydrostatic test out of date			
6. Is the cylinder harness in good condition? <i>Look for these items:</i>			
• Straps or frame showing wear or damage			
• Broken or malfunctioning buckles and attachments			
• Air cylinder attachment devices inoperable			

If you answered 'no' to any question above, list corrective action taken here:

Inspected by:	Date:

ATTACHMENT H

Sample Emergency Potential Log

The following work areas at Sletten Construction have been identified as having foreseeable emergencies:

Area	Type of Emergency	Location of Emergency Respirator(s)

Safety Director

Date

ATTACHMENT I

Sample Immediately Dangerous to Life and Health (IDLH) Assessment Log

The Safety Director has identified the following area as presenting the potential for IDLH conditions:

Process	IDLH Condition	Procedure
		<p>Workers will follow the permit required confined space entry procedures specified in the <u>(Sletten Construction)</u> Confined Space Program. As specified in these procedures, the Safety Director has determined that workers entering this area shall wear a pressure demand SAR. In addition, an appropriately trained and equipped standby person shall remain outside the dip tank and maintain constant voice and visual communication with the worker. In the event of an emergency requiring the standby person to enter the IDLH environment, the standby person shall immediately notify the Safety Director and will proceed with rescue operations in accordance with rescue procedures outlined in the <u>(Sletten Construction)</u> Confined Space Program.</p>

Safety Director

Date

SCAFFOLDING INSPECTION CHECKLIST



Page 1 of 4

REV 09/08

JOB: _____ DATE: _____ TIME: _____

COMPETENT PERSON: _____ COMPANY: _____

CONTRACTOR THAT ERECTED SCAFFOLD: _____

CONTRACTOR WITH OPERATIONAL CONTROL OF SCAFFOLD: _____

LOCATION OF SCAFFOLD: _____

TYPE OF SCAFFOLD: _____

If any item is checked "NO", the scaffold shall be "red-tagged" until the discrepancy is corrected.
(The number following the question tells you where to look for the OSHA 1926.451 regulation pertaining to the question.)

	YES	NO	N/A
Have scaffolds over 125 feet in height or for special work requirements been designed by a registered professional engineer? (b)(6) and PBCW contract	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
While erecting/dismantling has the feasibility and safety of providing fall protection been determined? (g)(2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have all employees involved in erecting/dismantling or use of the scaffold been properly trained? (1926.454(a) and (b))Have all employees who work on the scaffold been trained on the proper use of the scaffold and fall protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the scaffold been constructed and loaded in accordance with the design of a qualified person with a safety factor of 4 to 1? (a)(1) and (a)(6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the scaffold platform been fully planked with less than 1" between planks or between planks and the uprights? (b)(1)(i)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are open sides of scaffold less than 14 inches from the face of the work? (b)(3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are planks overlapped over the supports? (b)(7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are planks overlapped at least 12 inches, nailed together or otherwise secured? (b)(7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the top and bottom surfaces of the plank visible, free from paint and undamaged? (b)(9)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the scaffold conform to the 4 to 1 base to height ratio requirement? (c)(1)(I)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have tie-ins been installed at a horizontal member that supports the inner and outer legs? (c)(1)(i)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the first vertical tie-in been installed at a height less than 4 times the minimum base dimension? (c)(1)(ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have vertical tie-ins been repeated every 20 feet or less for scaffolds that are 3 feet or less in width? (c)(1)(ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SCAFFOLDING INSPECTION CHECKLIST



	YES	NO	N/A
Have vertical tie-ins been repeated every 26 feet or less for scaffolds wider than 3 feet? (c)(1)(ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the vertical distance from the top tie-in to the top of the scaffold less than the 4 to 1 minimum base dimension? (c)(1)(ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are tie-ins installed at each end of the scaffold and at horizontal distances not to exceed 30 feet? (c)(1)(ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are scaffolds erected on base plates (and mud sills, if necessary)? (c)(2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are footings capable of supporting 4 times the intended load without settling? (c)(2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is scaffold plumb and braced to prevent swaying or displacement? (c)(3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has safe access been provided for all scaffold platforms that are more than 2 feet above or below the point of access? (e)(1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are rest platforms installed every 35 feet vertically? (e)(2)(iii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is direct access from other structures prohibited when that distance is more than 24 inches vertically or 14 inches horizontally? (e)(8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are scaffolds and components loaded beyond their rated capacities? (f)(1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has any damaged part of the scaffold been repaired, replaced or removed as required? (f)(4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there adequate clearance between scaffolds and power lines? (f)(6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have slippery conditions been removed? (f)(8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If storms or high winds are present has a competent person been consulted and wind screens or personal fall arrest used? (f)(12)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are tools, material, and debris removed from scaffold to prevent an accumulation? (f)(13)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do platforms, when loaded, deflect more than 1/60 th of the span? (f)(16)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are guardrails and mid-rails installed on all open sides and open ends of the platform? (g)(4)(i)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are guardrails installed at 38 to 45 inches in height? (g)(4)(ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have falling object hazards been eliminated or toeboards installed? (h)(2)(ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If Tube and Coupler Scaffolds are being used are they in compliance with 1926.452 (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If Fabricated frame scaffolds are being used are the in compliance with 1926.452 (c)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SCAFFOLDING INSPECTION CHECKLIST



	YES	NO	N/A
FOR SUSPENSION SCAFFOLD:			
Have all employees been trained to recognize the hazards associated with suspended scaffolds? (d)(1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has a competent person evaluated all direct connections prior to use to confirm that the supporting surfaces are able to support the imposed load? (d)(1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the suspension scaffold tied or otherwise secured to prevent it from swaying, as determined by a competent person? (d)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has a competent person inspected the ropes for defects prior to the workshift and after every occurrence that could affect a rope's integrity? (d)(10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If scaffold platform is more than 24 inches (61 centimeters) above or below a point of access, are ladders, ramps, walkways, or similar surfaces available? (e)(1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If using direct access, is the surface within 24 inches (61 centimeters) vertically or 14 inches (36 cm) horizontally from the surface? (e)(8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If lanyards are connected to horizontal lifelines or structural members on single-point or two-point adjustable scaffolds, does the scaffold have additional independent support lines equal in number and strength to the suspension lines and have automatic locking devices? (g)(3)(iii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are emergency escape and rescue devices not being used as working platforms, unless designed to function as both suspension scaffolds and emergency systems? (d)(19)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are counterweights able to resist at least four times the tipping moment imposed by the scaffold operating at either the rated load of the hoist, or one-and-a-half (minimum) times the tipping moment imposed by the scaffold operating at the stall load of the hoist, whichever is greater? (a)(2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the counterweights specifically designed for that use? (d)(3)(iii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are counterweights not made of materials that can be easily dislocated? (Flowable material, such as sand or water, cannot be used.) (d)(3)(ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are counterweights secured by mechanical means to the outrigger beams? (d)(3)(iv)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are vertical lifelines not fastened to counterweights. (g)(3)(i)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are outrigger beams (thrustouts) placed perpendicular to their bearing support. (d)(3)(viii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are tiebacks secured to a structurally sound anchorage on the building or structure? (Sound anchorages do not include standpipes, vents, other piping systems, or electrical conduit.) (d)(3)(ix) and (d)(5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SCAFFOLDING INSPECTION CHECKLIST



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	YES	NO	N/A
Are single tiebacks installed perpendicular to the face of the building or structure? (Two tiebacks installed at opposing angles are required when a perpendicular tieback cannot be installed.) (d)(3)(x)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are suspension ropes long enough to allow the scaffold to be lowered to the level below without the rope passing through the hoist, or the end of the rope configured to prevent the end from passing through the hoist? (d)(6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do drum hoists contain no less than four wraps of the rope at the lowest point? (d)(6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are suspension ropes supporting adjustable suspension scaffolds a diameter large enough to provide sufficient surface area for the functioning of brake and hoist mechanisms? (f)(10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are suspension ropes free of the following conditions: kinks; six or more randomly broken wires in one rope lay or three or more broken wires in one strand in one lay; one third or more of the original diameter of the outside wires is lost; heat damage; evidence that the secondary brake has engaged the rope; and any other physical damage that impairs the function and strength of the rope? (Repaired wire cannot be used.) (d)(10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are suspension ropes shielded from heat-producing processes? (f)(11)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have power-operated hoists used to raise or lower a suspended scaffold been tested and listed by a qualified testing laboratory? (Gasoline power-operated hoists or equipment are not permitted.) (d)(13)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the stall load of the scaffold hoist less than three times its rated load? (The stall load is the load at which the prime-mover (motor or engine) of a power-operated hoist stalls or the power to the prime-mover is automatically disconnected.) (a)(5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are all gears and brakes enclosed? (d)(15)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does an automatic braking and locking device, in addition to the operating brake, engage when a hoist makes an instantaneous change in momentum or an accelerated overspeed? (d)(16)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are manually operated hoists used to raise or lower a suspended scaffold tested and listed by a qualified testing laboratory? (These hoists require a positive crank force to Descend.) (d)(13)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have all materials or devices been removed that could be used to increase the working height on a suspension scaffold? (This includes ladders, boxes, and barrels.) (f)(17)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If welding from a suspended scaffold, is:			
• A grounding conductor connected from the scaffold to the structure and at least the size of the welding lead?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• The grounding conductor not attached in series with the welding process or the work piece?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• An insulating material covering the suspension wire rope and extends at least four feet (1.2 meters) above the hoist?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• An insulated protective cover over the hoist?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• The tail line is guided, retained, or both, so that it does not become grounded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SCAFFOLDING INSPECTION CHECKLIST



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- | | YES | NO | N/A |
|---|--------------------------|--------------------------|--------------------------|
| • Each suspension rope attached to an insulated thimble? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Each suspension rope and any other independent line insulated from grounding? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

SIGNATURE OF COMPETENT PERSON: _____

SUBCONTRACTOR COMPETENT PERSON DESIGNATION FORM

Project Name: _____

Project Number: _____

_____ (name of sub-contractor) has designated the following employee as a COMPETENT PERSON(S) in the areas identified below for the above captioned project:

Name of Employee

Employee's Signature

- | | | |
|---|--|---|
| <input type="checkbox"/> Asbestos | <input type="checkbox"/> Excavation / Trenching | <input type="checkbox"/> Lead Removal |
| <input type="checkbox"/> Concrete Forms / Shoring | <input type="checkbox"/> Fall Protection | <input type="checkbox"/> Respiratory Protection |
| <input type="checkbox"/> Confined Space | <input type="checkbox"/> First Aid / CPR | <input type="checkbox"/> Rigging |
| <input type="checkbox"/> Cranes (S/N _____) | <input type="checkbox"/> Fire Protect / Prevent | <input type="checkbox"/> Ladders |
| <input type="checkbox"/> Scaffolding | <input type="checkbox"/> Electrical | <input type="checkbox"/> Welding / Cutting |
| <input type="checkbox"/> Demolition | <input type="checkbox"/> Forklifts / Man / Scissor | <input type="checkbox"/> Underground Construction |

An OSHA "competent person" is defined as "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" [29 CFR 1926.32(f)].

Reference: www.osha.gov/SLTC/competentperson/index.html

- It is the employer's responsibility, not OSHA's, to determine competency
- A competent person is one who can identify hazards and take steps to deal with them
- Competency is subjective and situational

Name of Authorized Contractor Representative (Print Name)

Signature of Authorized Contractor Representative

Date of Authorization

SUBCONTRACTOR EQUIPMENT AND SCAFFOLD AGREEMENT

Safety Compliance: The Subcontractor agrees to comply fully with the Occupational Safety and Health Act of 1970 (OSHA) as amended, and any comparable federal and state laws in effect where the Project is being carried out, and all safety and work regulations instituted by the Owner and Contractor for this particular Project and is solely responsible for safety in the performance of their work.

Use of Contractor Equipment: The Subcontractor shall not use any equipment of Contractor without prior written approval. Subcontractor must have up to date training certificates onsite and approved by Contractor's Safety personnel. If Contractor's scaffolding, mobile or portable equipment, tools, access ladders or other apparatus, rented or owned, (hereinafter called "equipment") is used by the Subcontractor or the Subcontractor's employees, agents and sub-subcontractors for performing their work on the Project, then the Subcontractor agrees to be bound by the following:

- 1) Contractor makes no warranty to the Subcontractor as to the condition of the equipment and/or its set-up, erection or maintenance, or as to whether it complies with all applicable governing laws and regulations;
- 2) Subcontractor agrees to accept all responsibility to insure the proper set-up, erection, inspection, use and/or maintenance of the equipment is in accordance with current laws and regulations prior to their use;
- 4) Subcontractor agrees that it is solely responsible for instructing their employees, agents, and sub-subcontractors in the proper use according to all applicable safety standards;
- 5) Subcontractor agrees to be responsible for violations, penalties and fines of any applicable safety laws or regulations imposed by any governing authorities, pertaining to the equipment, which are caused by the actions or inaction of any of their employees, agents, or sub-subcontractors. Subcontractor further agrees to pay for any penalties or fines levied against Contractor that are the result of the Subcontractor's non-compliance with any regulations pertaining to their use of the equipment; and
- 6) Subcontractor agrees to indemnify, defend and hold harmless Contractor and any owner/lessor (if equipment is leased) and their agents and employees from and against all claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from the Subcontractor's use of the equipment, or use by Subcontractor's sub-subcontractors or agents.

I certify that I have reviewed the above requirements as they relate to safety on this Project and as agent for the Subcontractor, do hereby agree to the above terms.

SUBCONTRACTOR NAME: _____

PROJECT NAME: _____

SIGNATURE: _____ **DATE:** _____

PRINT NAME: _____ **TITLE:** _____

APPENDIX I

SLETTEN CONSTRUCTION CRANE/HOIST PLAN

Purpose

Many types of cranes, hoists and rigging devices are used at Sletten Construction, Inc for lifting and moving materials. Sletten's policy is to maintain a safe workplace for its employees; therefore, it cannot be overemphasized that only qualified and licensed individuals shall operate these devices. The safety rules and guidance in this document apply to all operations at Sletten that involve the use of cranes and hoists installed in or attached to buildings and to all Sletten employees, supplemental labor and subcontractor personnel who use such equipment and devices.

Throughout this document, Sletten Construction Inc will be referred to as "Employer".

Responsibilities

Supervisors are responsible for:

- Ensuring that employees under their supervision receive the required training are certified and licensed to operate the cranes and hoists in their areas
- Providing training for prospective crane and hoist operators. This training must be conducted by a qualified, designated instructor who is licensed a crane and hoist operating instructor in the eyes of local regulations
- Ensuring that hoisting equipment is inspected and tested monthly by a responsible individual and that rigging equipment is inspected annually

Crane and Hoist Operators are responsible for:

- Operating hoisting equipment safely
- Conducting functional testing prior to using the equipment
- Selecting and using rigging equipment appropriately
- Having a valid operator's license on their person while operating cranes

Riggers and Signal Persons are responsible for:

- Daily inspections of equipment used in rigging
- Being familiar with ANSI signals and field signals
- All safety requirements while performing their jobs

Qualifications

Crane operator certification in states and municipalities with operator licensing rules: All crane operators in states and municipalities with operator licensing laws must be licensed to operate by the effective date of such laws.

Crane operator training in states without operator licensing rules: All crane operators must be trained to operate the equipment and must be evaluated to confirm that the operator understands the information provided in the training.

Qualifications for rigger, signal person, and other personnel: Riggers and signal persons must meet specific qualification requirements in order to perform their tasks. Other personnel in the work zone must be trained to recognize hazards associated with the use of the equipment and any related duties that they are assigned to perform.

Training costs: The employer must provide all training of employees required under the crane and derrick rules at no cost to the employee.

Refresher training: The employer must provide refresher training in relevant topics for each employee when there is an indication that retraining is necessary on the basis of the employee's actions or an evaluation of the employee's knowledge.

Definitions

CONTROLLING ENTITY

The "controlling entity" is the employer that is a prime contractor, general contractor, construction manager, or any other legal entity that has the overall responsibility for the planning, quality, and completion of a construction project that involves cranes or derricks

EMPLOYERS

An "employer" is a contractor or subcontractor.

EQUIPMENT

"Construction" activity defined. Cranes, derricks, and associated equipment used in construction, alteration, and repair work are covered under the construction rules. "Construction" includes the assembly, disassembly, attachment, stabilizing, and deconstruction or demolition of a portion or all of a structure. For example, when cranes or derricks are used to arrange the materials in a particular sequence for hoisting or to lift materials onto a structure that is under construction, they are being used to expedite work that is integral to the construction process and is, therefore, construction work. Also, moving building materials onto a structure for subsequent use is an integral part of the construction process.

CRANES

For the purposes of construction, cranes are defined as "power-operated equipment used in construction that can hoist, lower, and horizontally move a suspended load." Cranes may be fixed or mobile. The definition does not include helicopter cranes, which are covered under a separate OSHA rule.

The types of cranes and derricks that are *covered* under the rules include the following equipment and variations of such equipment:

- Articulating crane (i.e., a crane whose boom consists of a series of folding, pin-connected structural members, typically manipulated to extend or retract by power from hydraulic cylinders), such as a knuckle-boom crane
- Crawler crane (i.e., equipment that has a type of base mounting that incorporates a continuous belt of sprocket-driven track)
- Cranes on barges
- Crane on a monorail
- Dedicated pile driver (i.e., a machine that is designed to function exclusively as a pile driver)
- Derrick
- Floating crane/ derrick (i.e., equipment designed by the manufacturer or employer for marine use by permanent attachment to a barge, pontoons, vessel, or other means of flotation)
- Industrial crane, such as a carry-deck crane
- Locomotive crane (i.e., a crane mounted on a base or car equipped for travel on a railroad track)
- Mobile crane, such as wheel-mounted, rough-terrain, all-terrain, commercial truck-mounted, and boom truck crane
- Multipurpose machines when configured to hoist and lower (by means of a winch or hook) and horizontally move a suspended load
- Overhead crane (i.e., a crane with a movable bridge carrying a movable or fixed hoisting mechanism and traveling on an overhead fixed runway structure)
- Gantry crane (i.e., a crane similar to an overhead crane except that the bridge for carrying the trolley or trolleys is rigidly supported on two or more legs running on fixed rails or other runway)
- Pedestal crane
- Portal crane (i.e., a type of crane consisting of a rotating upper structure, hoist machinery, and boom mounted on top of a structural gantry, which may be fixed in one location or have travel capability)
- Service/ mechanic trucks with a hoisting device
- Sideboom crane (i.e., a track-type or wheel-type tractor having a boom mounted on the side of the tractor, used for lifting, lowering, or transporting a load suspended on the load hook)
- Straddle crane
- Tower crane (i.e., a type of lifting structure that uses a vertical mast or tower to support a working boom (jib) in an elevated position), such as fixed jib ("hammerhead boom"), luffing boom, and self-erecting

- Attachments. The crane rules apply to attachments used with cranes and derricks whether attached or suspended, including hooks, grapples, magnets, several types of buckets (e.g., clamshell, orange peel, concrete), personnel platforms, drills, and pile-driving equipment.

EQUIPMENT EXCLUDED FROM COVERAGE

The following equipment is *excluded* from coverage under the crane rules:

- Crane and derrick equipment converted or adapted for nonhoisting or lifting, such as power shovels, excavators, and concrete pumps
- Wheel loaders, backhoes, loader backhoes, and track loaders
- Digger derricks when used for augering holes for poles carrying electric and telecommunication lines
- Automotive wreckers and tow trucks when used to clear wrecks and haul vehicles
- Machinery originally designed as vehicle-mounted aerial devices (for lifting personnel) and self-propelled elevating work platforms
- Telescopic/ hydraulic gantry systems
- Stacker cranes
- Powered industrial trucks (forklifts), except when configured to hoist and lower (by means of a winch or hook) and horizontally move a suspended load
- Mechanic's truck with a hoisting device when used in activities related to equipment maintenance and repair
- Machinery that hoists by using a come-along or chain fall
- Dedicated drilling rigs
- Gin poles when used for the erection of communication towers
- Tree trimming and tree removal work
- Anchor handling or dredge-related operations with a vessel or barge using an affixed A-frame
- Roustabouts
- Helicopter cranes

Material delivery exclusion: An employer that delivers materials to a construction site is not engaged in construction work if that employer's work once at the site is limited to simply placing or stacking the materials on the ground without arranging the materials in a particular sequence for hoisting.

ASSEMBLY/ DISASSEMBLY (A/D) DIRECTOR

The A/D director is a person who supervises equipment assembly and disassembly operations, and must understand the applicable A/D procedures.

The A/D director must meet the criteria for a competent and qualified person under the following conditions:

Where the assembly and disassembly is performed by only one person, that person is considered the A/D director and must meet the training criteria for both a competent person and a qualified person. Where the A/D director is assisted by one or more qualified persons, he or she must meet the criteria for a competent person and is not required to be a qualified person.

Ground condition

“Ground condition” refers to the ability of the ground to support the crane or derrick equipment, including ground slope, compaction, and firmness.

Assembly and disassembly

“Assembly and disassembly” means the assembly and/ or disassembly of crane and derrick equipment, including any modifications to the height of the equipment. With regard to tower cranes, “assembly” means erecting and climbing and “disassembly” means dismantling.

Wire rope

“Wire rope” is defined in the rule as a flexible rope constructed by laying steel wires into various patterns of multi-wired strands around a core system to produce a helically wound rope.

TRAINING

AUTHORIZED PERSONNEL TRAINING

Each employee assigned to work on or near the equipment (i.e., authorized personnel) must be trained to:

- Recognize swing radius hazards
- Recognize struck-by and pinch/ crush hazard areas posed by the rotating superstructure
- Keep clear of holes and crush/ pinch points

COMPETENT PERSON TRAINING

A “competent person” is defined in the rules as someone who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees and who has authorization to take prompt corrective measures to eliminate them. The competent person must be trained in any additional requirements of his or her role and responsibility.

CREW MEMBER TRAINING

Before commencing assembly/disassembly operations, the A/D director must ensure that the crew members understand:

- Their tasks and the hazards associated with their tasks
- The hazardous positions and locations that they need to avoid
- Work near power lines. Crew members assigned to work with crane and derrick equipment must receive the same overhead power line training as required for crane operators, regardless of the distance from the power lines. See the Crane Operator Training subsection for more information.

DEDICATED SPOTTER

The dedicated spotter must meet the qualifications for a signal person and complete the training requirements for crew member.

The dedicated spotter's sole responsibility is to watch the separation between power lines and the crane or derrick equipment, load line and load (including rigging and lifting accessories), and ensure through communication with the operator that the applicable minimum approach distance is not breached.

MAINTENANCE AND REPAIR EMPLOYEE QUALIFICATIONS AND TRAINING

Maintenance and repair personnel must be trained to operate the equipment under limited conditions necessary to perform the maintenance or repair. The operation is limited to those functions necessary to perform maintenance, inspect the equipment, or verify its performance. Such personnel may operate the equipment under the direct supervision of a qualified or certified crane operator, or if they are familiar with the operation, limitations, characteristics, and hazards associated with the type of equipment.

A maintenance and repair employee must be a qualified person (i.e., a person 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). Maintenance and repair workers are not considered "operators" and are therefore not required to be trained in all of the areas required for crane operators.

Each maintenance and repair person must be trained in tagout and start-up procedures.

RIGGER QUALIFICATIONS

Riggers assemble, rig, hook and unhook, guide, and disassemble crane equipment and materials. Riggers must meet the requirements of a qualified person.

A qualified rigger is a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, successfully demonstrates the ability to resolve problems relating to the subject matter, the work, or the project.

Riggers must be trained in all the requirements of the regulations that apply to their respective roles.

SIGNAL PERSON QUALIFICATIONS

All signal persons must be qualified to give signals. In order to be qualified, the signal person must:

- Know and understand the type of signals used; if hand signals are used, the signal person must know and understand the Standard Method for hand signals.
- Be competent in the application of the type of signals used.
- Have a basic understanding of equipment operation and limitations, including the crane dynamics involved in swinging and stopping loads and boom deflection from hoisting loads.
- Demonstrate that he or she meets the qualification requirements for signalers through an oral or written test and through a practical test.

Signal person evaluations: The qualification of signal persons must be evaluated and documented by either:

A third party qualified evaluator or the employer's qualified evaluator

If subsequent actions by the signal person indicate that the individual does not meet the Qualification Requirement, the employer must not allow the individual to continue working as a signal person until retraining is provided and a reassessment is made that confirms that the individual meets the Qualification Requirements.

The employer must make the documentation for whichever option is used available at the site while the signal person is employed by the employer. The documentation must specify each type of signaling (e.g. hand signals, radio signals) for which the signal person meets the requirements of the rule.

FALL PROTECTION

The employer must train each employee who may be exposed to fall hazards while on or hoisted by crane equipment.

Note: The fall protection rules for all construction workplaces at 29 CFR 1926, Subpart M, Fall Protection, do not apply to cranes and derricks in construction except where specific provisions of Subpart M are incorporated by reference.

15-foot fall distance for assembly and disassembly work: When assembling or disassembling crane or derrick equipment, the employer must provide and ensure the use of fall protection equipment for employees who are on a walking or working surface with an unprotected side or edge more than **15 ft**

above a lower level, except when the employee is at or near draw works when the equipment is running, in the cab, or on the deck.

6-foot fall distance for work other than assembly and disassembly: The employer must provide and ensure the use of fall protection equipment for employees who are on a walking or working surface with an unprotected side or edge more than 6 ft above a lower level while:

- Moving point to point (i.e., when an employee is going to or coming from a work station)
 - On non-lattice booms (whether horizontal or not horizontal)
 - On lattice booms that are not horizontal
 - On horizontal lattice booms where the fall distance is 15 ft or more
 - At a workstation on any part of the equipment (including the boom, of any type), except when the employee is at or near draw works when the equipment is running, in the cab, or on the deck.
- Fall protection equipment means guardrail systems, safety net systems, personal fall arrest systems, positioning device systems, or fall restraint systems.

Fall restraint system means a fall protection system that prevents the user from falling any distance. The system is composed of a body harness, along with an anchorage, connectors, and other necessary equipment.

Fall zone means the area (including, but not limited to, the area directly beneath the load) in which it is reasonably foreseeable that partially or completely suspended materials could fall in the event of an accident.

Personal fall arrest system means a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body harness, and may include a lanyard, deceleration device, lifeline, or suitable combination of these.

Positioning device system means a body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning.

BOOM WALKWAYS

This section establishes when walkways must be incorporated into lattice booms and the criteria for such walkways.

Specifications: Equipment with lattice booms must be equipped with walkways on the booms if the vertical profile of the boom from cord centerline to cord centerline is 6 ft or more. The walkways must be at least 12 inches (in.) wide.

Guardrails: Guardrails, railings and other permanent fall protection attachments along walkways are not required. Where not prohibited, guardrails or railings may be of any height up to a maximum of 45 in.

ALL PREVENTION SYSTEMS

The employer must maintain in good condition originally equipped steps, handholds, ladders, and guardrails/railings/grab rails.

Equipment must provide safe access and egress between the ground and the operator workstation(s), including the forward and rear positions, with devices such as steps, handholds, ladders, and guardrails/railings/grab rails.

Walking and stepping surfaces, except for crawler treads, must have slip-resistant features and properties (i.e., diamond plate metal, strategically placed grip tape, expanded metal, or slip-resistant paint).

Note: The guardrail systems for construction rule at 29 CFR 1926.502 do not apply to cranes and derricks.

PERSONAL FALL ARREST AND RESTRAINT SYSTEMS

There are anchorage requirements specific to fall protection for cranes.

Body harnesses must be used in personal fall arrest and fall restraint systems.

ANCHORAGE FOR PERSONAL FALL PROTECTION

Anchorage used for attachment of personal fall arrest equipment and portable anchor devices that are attached to the equipment must be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds (lb) per employee attached, or be designed, installed, and used as part of a complete personal fall arrest system that maintains a safety factor of at least 2, and under the supervision of a qualified person. Personal fall arrest systems must be anchored to any apparently substantial part of the equipment unless a competent person, from a visual inspection, without an engineering analysis, would conclude that the criteria for attachment of personal fall arrest equipment would not be met.

Anchorage for positioning device systems: Positioning devices must be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3,000 lb, whichever is greater. This requirement includes portable anchor devices that are attached to the equipment. Positioning device systems must be anchored to any apparently substantial part of the equipment unless a competent person, from a visual inspection, without an engineering analysis, would conclude that the criteria for anchoring positioning device systems would not be met.

Anchorage for fall restraint systems: Fall restraint systems must be anchored to any part of the equipment that is capable of withstanding twice the maximum load that an employee may impose on it during reasonably anticipated conditions of use.

Anchoring to the load line: A personal fall arrest system is permitted to be anchored to the crane or derrick's hook or other part of the load line where:

- A qualified person has determined that the setup and rated capacity of the crane or derrick, including the hook, load line, and rigging, meet or exceed the requirements for anchorages for personal fall arrest device systems.
- The equipment operator must be at the worksite and informed that the equipment is being used for this purpose.
- No load is suspended from the load line when the personal fall arrest system is anchored to the crane or derrick's hook or other part of the load line.

FALL PROTECTION ON TOWER CRANES

Safety equipment specifications: Tower cranes must be equipped to provide safe access and egress between the ground and the cab, machinery platforms, and tower (mast), with devices such as steps, handholds, ladders, and guardrails/ railings/ grab rails.

Personal fall protection other than erecting, climbing, and dismantling: For work other than erecting, climbing, and dismantling, the employer must provide and ensure the use of fall protection equipment for employees who are on a walking/ working surface with an unprotected side or edge more than 6 ft above a lower level, except when the employee is at or near draw works (when the equipment is running), in the cab, or on the deck.

Personal fall protection for erecting, climbing, and dismantling: For erecting, climbing, and dismantling work, the employer must provide and ensure the use of fall protection equipment for employees who are on a walking/ working surface with an unprotected side or edge more than 15 ft above a lower level.

Ground Conditions

Before the crane or derrick equipment is assembled or used, the controlling entity must ensure that ground conditions are firm, drained, and graded sufficiently to support the crane and supporting materials according to the equipment manufacturer's specifications for adequate support and degree of level. Note: The requirement for the ground to be drained does not apply to marshes or wetlands.

The controlling entity must inform the user and operator of the equipment about ground conditions, including any known hazards beneath the equipment setup area, such as voids, tanks, and utilities, and whether those hazards are identified in documents held by the controlling entity, such as site drawings, as-built drawings, and soil analyses.

If there is no controlling entity for the project, the employer that has authority at the site must provide the information about ground conditions to the equipment user or operator, or make or arrange for the ground preparations.

Resolving ground condition problems. If the equipment assembly/disassembly (A/D) director or the operator determines that ground conditions are inadequate, that person's employer must notify the

controlling entity regarding the ground preparations that are needed so that, with the use of suitable supporting materials or devices, the ground condition requirements can be met.

Equipment Assembly and Disassembly

ASSEMBLY AND DISASSEMBLY—GENERAL PROCEDURES

Using the manufacturer's procedures

Employers must comply with all of the manufacturer's prohibitions regarding assembly and disassembly.

Using employer procedures

When not using manufacturer procedures, employer procedures must be developed by a qualified person, and ensure that the procedures:

- Prevent unintended dangerous movement;
- Prevent collapse of any part of the equipment;
- Provide adequate support and stability for all parts of the equipment; and
- Position employees involved to minimize exposure to any unintended movement or collapse.

A/D DIRECTOR RESPONSIBILITIES

When all assembly and disassembly work is done by one person, it must be done by an A/D director who meets the criteria for both a competent person and a qualified person.

When such work is done by more than one person, it must be directed by an A/D director who is either:

- Both a competent and qualified person, or
- A competent person assisted by one or more qualified person(s).

The A/D director must:

- Know and understand the applicable assembly and disassembly procedures.
- Review the procedures immediately before beginning work, unless the director's experience in having used them on the same type and configuration of equipment and recollection and understanding of the procedures is such that it makes their review unnecessary.
- Ensure that each member of the crew understands his or her tasks, the hazards of the tasks, and any hazardous positions or locations to avoid.
- Verify all capacities of any equipment used, including rigging and lifting lugs.

The A/D director must address hazards associated with the crane or derrick operation. He or she must consider each hazard, determine the appropriate method(s) of addressing it, and oversee the implementation of the method(s).

Following are 12 specified hazard areas of concern that must be addressed:

- Site and ground-bearing conditions
- Blocking material
- Proper location of blocking
- Verifying assist crane loads
- Suitability of boom and jib pick points for preventing structural damage and facilitating safe handling
- Identify center of gravity if that is necessary to maintain stability, and use measures designed to prevent unintended dangerous movement resulting from an inaccurate identification of the center of gravity
- Stability of the boom system and components upon pin removal
- Prevention of snagging of suspension ropes and pendants on the boom or jib connections
- Potential for unintended movement from poorly supported counterweights
- Boom hoist brake failure
- Loss of backward stability
- Wind speed and weather and their effect on equipment

INSPECTION OF ASSEMBLED EQUIPMENT BEFORE USE

Upon completion of assembly, but before use, the crane or derrick equipment must be inspected by a qualified person to ensure that it is configured according to the manufacturer's equipment criteria. If these criteria are unavailable, the employer's qualified person, must develop the appropriate configuration criteria and ensure that these criteria are met.

COMPONENTS AND EQUIPMENT CONFIGURATIONS

The weight of each of the components must be readily available to the operator so that he or she can determine if the lift can be performed within the equipment's capacity.

- Component selection and equipment configuration must follow the manufacturer's requirements and limits or the RPE's approvals and limits when the manufacturer's specifications are not available.
- If a crane or derrick or its components are modified, the employer must follow the component selection and configuration requirements.
- Inspection after assembly is completed. Once assembly is completed, the equipment must be inspected to ensure safe operation.

ASSEMBLY OR DISASSEMBLY NEAR POWER LINES UP TO 350 KILOVOLTS (KV)

The employer must assume that all power lines are energized unless the utility owner/operator confirms that the power line has been and continues to be de-energized and visibly grounded at the worksite.

Power line assessment: Before beginning assembly or disassembly (or erecting, climbing, or dismantling for tower cranes), the employer must determine if any part of the crane, load, or load line (including rigging and lifting accessories) could get closer than 20 feet (ft) to a power line in the direction or area of assembly.

Note: If no part of the crane, load, or load line could come closer than 20 ft of a power line, the employer is not required to take any further action under the power line safety rules. However, if the employer encounters a situation where it needs to get closer than anticipated to the power lines during the assembly or disassembly process, the employer must conduct a new 20-foot assessment.

Options for safety procedures: If the employer determines that the equipment could get closer than 20 ft of a power line, he or she must take steps to protect employees according to one of the following three options, selecting the method most suitable for each specific work situation (i.e., they are not listed in order of priority):

Option 1—Ensure that power lines are de-energized and visibly grounded by the owner/operator of the lines and confirm that such actions are completed.

Option 2—Ensure that all equipment maintains the 20-foot clearance distance (same as approach distance) from energized power lines at all times by following the regulatory procedures for preventing encroachment or electrocution.

Option 3—Maintain a minimum clearance distance from energized power lines of 10 ft to 20 ft, depending on the voltage of the power line as listed in Table A of the regulation, and follow the regulatory procedures for preventing encroachment or electrocution.

Note on voltage information: If Option 3 is chosen and the employer asks the utility owner/operator for the voltage information for the power line, the utility owner/operator must provide the voltage information within 2 working days of the request.

Table A--Minimum Power Line Clearance Distances

Voltage (nominal kV)	Min. clearance (ft)
Up to 50	10
over 50 up to 200	15
over 200 up to 350	20
over 350 up to 500	25

over 500 up to 750	35
over 750 up to 1,000	45
over 1,000	establish with the utility owner/ operator or RPE

Note on clearance distance: There is a minimum 50-foot clearance requirement for power lines over 350 kV. See the POWER LINE SAFETY—OVER 350KV subsection of this analysis for more information.

Prevention of encroachment and electrocution: If the employer chooses either Option 2 or Option 3 to protect workers from power lines, the employer must:

- Conduct a planning meeting with the A/D director, operator, and the other workers who will be in the area of the equipment or load to review the location of the power line(s) and the steps that will be implemented to prevent encroachment/ electrocution.
- Use nonconductive tag lines if they are used.
- Use additional measures effective in preventing encroachment, such as a dedicated spotter who is in continuous contact with the equipment operator, or a proximity alarm, or a range control warning device, or a device that automatically limits range of movement, or high-visibility markings such as an elevated warning line, barricades, or flags.

Dedicated spotter duties

The dedicated spotter must:

- Be in continuous contact with the crane or derrick operator.
- Be equipped with a visual aid to assist in identifying the minimum clearance distance. Examples of a visual aid include, but are not limited to, a clearly visible line painted on the ground, a clearly visible line of stanchions, and a set of clearly visible line-of-sight landmarks (such as a fence post behind the dedicated spotter and a building corner ahead of the dedicated spotter).
- Be positioned to effectively gauge the clearance distance.
- Where necessary, use equipment that enables the dedicated spotter to communicate directly with the operator.
- Give timely information to the operator so that the required clearance distance can be maintained.

Assembly and disassembly of equipment under an energized power line is absolutely not allowed.

Electrocution warnings: There must be at least one electrocution hazard warning posted in the cab so that it is in view of the operator and, except for overhead gantry and tower cranes, at least two warning signs on the outside of the equipment.

ASSEMBLY OR DISASSEMBLY NEAR POWER LINES OVER 350 KV

The minimum clearance distance between equipment and power lines over 350 kV must be 50 ft. Therefore, the trigger distance that would be used when assessing an assembly/disassembly area or work zone would be 50 ft. In addition, an employer engaged in assembly/disassembly or crane operations using Option 2 for safety procedures and clearance distances would be required to maintain a minimum clearance distance of 50 ft.

TOWER CRANES

Tower cranes are subject to additional requirements for erecting, climbing, and dismantling, including a pre-erection inspection.

OUTRIGGERS AND STABILIZERS

When outriggers or stabilizers are used or are necessary in light of the load to be handled and the operating radius, the following procedures must be followed:

- Outriggers and stabilizers must be fully extended or, if permitted by manufacturer's procedures, deployed as specified in the load chart.
- Outriggers must be set to remove equipment weight from the wheels, except for locomotive cranes.
- Outrigger floats, if used, must be attached to the outriggers; stabilizer floats, if used, must be attached to the stabilizers.
- Each outrigger or stabilizer must be visible to the operator or to a signal person during extension and setting.
- Outrigger and stabilizer blocking must be placed under the float/pad of the jack or, if there is no jack, under the outer bearing surface of the outrigger or stabilizer beam.
- Blocking must be sufficient to sustain the loads, maintain stability, and be properly placed.

Equipment Operation

The employer must comply with all of the manufacturer's procedures applicable to the operational functions of equipment, including its use with attachments. Where the manufacturer procedures are unavailable, the employer must develop and ensure compliance with all procedures necessary for the safe Accessibility of operational and capacity procedures. The procedures for operating the equipment must be available in the cab at all times for use by the operator. The procedures include rated capacities (load charts), recommended operating speeds, special hazard warnings, instructions, and operator's manual.

If rated capacities are in electronic form and an electronic system failure makes the rated capacities inaccessible, the operator must immediately stop operations or follow safe shutdown procedures until the rated capacities are available to the operator.

OPERATOR DISTRACTIONS

Operator distractions prohibited. The operator must not engage in any activity that diverts his or her attention while operating the equipment, such as the use of cell phones.

UNATTENDED EQUIPMENT

The operator must not leave the controls while the load is suspended, except where:

- The operator stays next to the equipment and is not engaged in any other duties.
- The load is to be held suspended for a period of time exceeding normal lifting operations.
- The competent person determines that it is safe to do so and implements measures necessary to restrain the boom hoist and telescoping, load, swing, and outrigger or stabilizer functions.
- Barricades, caution lines, and notices are erected to prevent all employees from entering the fall zone.
- The rules for leaving equipment unattended do not apply to working gear, such as slings, spreader bars, ladders, and welding machines, where the weight of the working gear is negligible relative to the lifting capacity of the equipment as positioned, and the working gear is suspended over an area other than an entrance or exit.

TAGOUT

Where the employer has taken the equipment out of service, a tag must be placed in the cab stating that the equipment is out of service and is not to be used. Where the employer has taken a function(s) out of service, a tag must be placed in a conspicuous position stating that the function is out of service and is not to be used.

If there is a warning tagout or maintenance/ "do not operate" sign on the equipment or starting control or any other switch or control, the operator must not activate the switch or start the equipment until the sign has been removed by a person authorized to remove it or until the operator has verified that no one is servicing, working on, or otherwise in a dangerous position on the machine, and the equipment has been repaired and is working properly.

START-UP

Before starting the engine, the operator must verify that all controls are in the proper starting position and that all personnel are in the clear.

STORM WARNING

When a local storm warning has been issued, the competent person must determine whether it is necessary to implement manufacturer recommendations for securing the equipment.

EQUIPMENT ADJUSTMENTS AND REPAIRS

If equipment adjustments or repairs are necessary, the operator must, in writing, promptly inform the person designated by the employer to receive such information and to the next operator where there are successive shifts. Also, the employer must notify all affected employees, at the beginning of each shift, of the necessary adjustments or repairs and all alternative measures.

SAFETY DEVICES AND OPERATIONAL AIDS

Safety devices and operational aids must *not* be used as a substitute for the exercise of professional judgment by the operator.

SLACK ROPE

If the competent person determines that there is a slack rope condition requiring respooling of the rope, it must be verified (before starting to lift) that the rope is seated on the drum and in the sheaves as the slack is removed.

ADJUSTMENTS FOR ENVIRONMENTAL CONDITIONS

The competent person must adjust the equipment and/ or operations to address the effect of wind, ice, and snow on equipment stability and rated capacity.

RATED CAPACITY SAFETY PROCEDURES

The equipment must not be operated in excess of its rated capacity, and the operator must not be required to operate the equipment in such a manner.

The operator must verify that the load is within the rated capacity of the equipment by at least one of the following methods:

The weight of the load must be determined from a source recognized by the industry (such as the load's manufacturer), by a calculation method recognized by the industry (such as calculating a steel beam from measured dimensions and a known per-foot weight), or by other equally reliable means. In addition, when requested by the operator, this information must be provided to the operator before the lift; or

The operator must begin hoisting the load to determine, using a load-weighing device, load moment indicator, rated capacity indicator, or rated capacity limiter, if it exceeds 75 percent of the maximum rated capacity at the longest radius that will be used during the lift operation. If it does, the operator must not proceed with the lift until he or she verifies the weight of the load.

NO CONTACT WITH OBSTRUCTIONS

The boom or other parts of the equipment must not contact any obstruction.

SIDEWAYS DRAGS AND PULLS PROHIBITED

The equipment must not be used to drag or pull loads sideways.

WHEEL-MOUNTED EQUIPMENT

On wheel-mounted equipment, no loads must be lifted over the front area, except as permitted by the manufacturer. Neither the load nor the boom must be lowered below the point where less than two full wraps of rope remain on their respective drums.

TRAVELING WITH A LOAD

Traveling with a load is prohibited if the practice is prohibited by the manufacturer.

When traveling with a load, the employer must ensure that a competent person supervises the operation, determines if it is necessary to reduce rated capacity, and makes determinations regarding load position, boom location, ground support, travel route, overhead obstructions, and speed of movement necessary to ensure safety. The determinations of the competent person must be implemented.

For equipment with tires, tire pressure specified by the manufacturer is maintained.

LOAD ROTATION

Rotational speed of the equipment must be such that the load does not swing out beyond the radius at which it can be controlled.

A tag or restraint line must be used if necessary to prevent rotation of the load that would be hazardous.

BRAKES

The brakes must be adjusted in accordance with manufacturer's procedures to prevent unintended movement.

Brake tests. The operator must test the brakes each time a load that is 90 percent or more of the maximum line pull is handled by lifting the load a few inches and applying the brakes. In duty cycle and repetitive lifts where each lift is 90 percent or more of the maximum line pull, this requirement applies to the first lift but not to successive lifts.

EMERGENCY STOP SIGNAL

The operator must obey a stop or emergency stop signal, irrespective of who gives it.

COUNTERWEIGHT OR BALLAST

Equipment must be operated with the counterweight or ballast in place as specified by the manufacturer, and the maximum counterweight or ballast specified by the manufacturer for the equipment must not be exceeded.

There are separate counterweight/ ballast requirements for tower cranes.

AUTHORITY TO STOP OPERATION

The operator must have the authority to stop and refuse to handle loads whenever there is a concern for safety. A qualified person must determine whether safe conditions have been restored.

OPERATIONS NEAR POWER LINES OVER 350 KV

The minimum clearance distance between equipment and power lines over 350 kV must be 50 ft. Therefore, the trigger distance that would be used in an area of crane operations or work zone would be 50 ft. In addition, an employer engaged in crane operations using Option 2 for safety procedures and clearance distances would be required to maintain a minimum clearance distance of 50 ft.

MINIMUM POWER LINE CLEARANCE DISTANCE FOR OPERATIONS

Equipment operations closer than the minimum approach distance under Table A is allowed only where the employer demonstrates that all of the following conditions are met and that all safety procedures are implemented:

- The employer determines it is not feasible to work outside of the minimum clearance distance and, in consultation with the owner/ operator of the power lines, determines it is infeasible to de-energize the lines.
- The power line owner/ operator or RPE who is a qualified person with respect to electrical power transmission and distribution determines the minimum clearance distance that must be maintained to prevent electrical contact in light of the on-site conditions (e.g., light, wind, potential for lightning, time to bring the equipment to a complete stop).
- The work is covered under the electrical power transmission and distribution rules, and the requirements of those rules are followed.
- Conduct a planning meeting between the employer and owner/ operator of the power lines or qualified person and RPE to determine the procedures to prevent electrical contact and electrocution.
- All the employers and RPE or power line owner/ operator must designate one person to direct the implementation of the procedures, and give that person the authority to stop work at any time to ensure safety.

Safety procedures to prevent electrical contact and electrocution

The procedures are similar to the safety procedures for encroachment and electrocution prevention at assembly and disassembly and equipment operations, and include additional procedures such as:

- Disconnect the automatic reclosing feature of the circuit interrupting device if the design of the device permits it.
- Use nonconductive rigging.
- Use insulating/ link devices and/or alternative means to prevent electrocution.
- Erect barricades forming a perimeter at least 10 feet away from the equipment or as far from the equipment as feasible.
- Prevent workers other than the operator from touching the load line above the insulating link/ device and crane.
- Use either wireless controls that isolate the operator from the equipment or insulating mats that insulate the operator from the ground.
- Allow only personnel essential to the operation in the area of the crane and load.
- Properly ground equipment.
- Ensure that the power line owner/ operator installs insulating line hose or cover-up except where such devices are unavailable for the line voltages involved.

Recordkeeping for safety procedures: The procedures to prevent electrical contact and electrocution must be documented and immediately available at the worksite.

Meeting to review safety procedures: The employers, crane operators, power line owner/ operator or RPE, and other workers in the work zone must meet to review the safety procedures to prevent breaching the minimum clearance distance.

Failure of safety procedures: If there is a problem implementing the safety procedures or it is determined they are inadequate to prevent electrocution, the employer must safely stop all operations and either:

- Develop new safety procedures, or
- Ensure that the power lines are de-energized and grounded or relocated.

Safety devices and aids: Safety devices, operational aids, and other means to prevent power line contact or electrocution must meet the manufacturer's procedures for use and conditions of use.

Power Line Safety

TRAVELING UNDER OR NEAR POWER LINES WITH NO LOAD

This section of the crane regulations applies to cranes or derricks while traveling on a construction site under or near power lines and do not apply to equipment while traveling on roads or in areas that are not part of a construction site or to equipment traveling on a construction site with a load.

Employers must implement the following safety procedures when cranes or derricks travel under or near power lines:

- The boom/ mast and boom/ mast support system are lowered sufficiently to meet the minimum clearance distance requirements for traveling under or near power lines with no load.
- The clearances specified in Table T of the rule are maintained.
- The effects of speed and terrain on equipment movement (including movement of the boom/ mast) are considered so that those effects do not cause the minimum clearance distances specified in Table T of the rule to be breached.
- Use a dedicated spotter.
- When traveling at night, or in conditions of poor visibility, ensure that the power lines are illuminated or another means of identifying the location of the lines is used and a safe path of travel is identified and used.

Table T—Minimum Clearance Distances Traveling with No Load

Voltage (nominal kV)	Min. clearance (ft)
Up to 0.75	4
over .75 up to 50	6
over 50 up to 345	10
over 345 up to 750	16
over 750 up to 1,000	20
over 1,000	establish with the utility owner/ operator or RPE

Inspections

The inspection rules are designed to prevent injuries and fatalities caused by equipment failures by establishing an inspection process that identifies and addresses safety concerns. There are two conditions that trigger the inspection requirements:

- Activities, such as equipment modification, repair or adjustment, assembly, severe service, or equipment not in regular use
- Passage of time, such as a shift, month, and annual

Competent or qualified person must conduct inspections. The various inspections must be conducted by either a competent person or a qualified person, depending on the type of inspection. That person may be the crane or operator as long as the operator has been trained as a qualified or competent person.

Deficiencies: There are two types of deficiencies in equipment (e.g., excessive wear of components, maladjustments that interfere with proper operation) that may be discovered during inspections:

- A safety hazard, which requires immediate correction
- Not a safety hazard, which requires monitoring

Manufacturer's recommendations: The competent person must follow any part of a manufacturer's safety-related inspection procedures that are more comprehensive or have a more frequent schedule of inspections than the requirements of the OSHA rule.

Recordkeeping: All inspection records must be available during the applicable document retention period to all persons who conduct inspections of equipment.

SHIFT INSPECTIONS

A competent person must begin to visually inspect equipment before each shift the equipment will be used, and complete the inspection during that shift.

Determinations made in conducting the inspection must be reassessed in light of observations made during the operation.

Minimum shift inspection criteria: At a minimum during each shift (and monthly), the competent person must inspect the following equipment and conditions for deficiencies:

- Ground conditions around the equipment for proper support, including ground settling under and around outriggers/ stabilizers and supporting foundations, groundwater accumulation, or similar conditions
- Control mechanisms for maladjustments interfering with proper operation
- Control and drive mechanisms for apparent excessive wear of components and contamination by lubricants, water, or other foreign matter
- Air, hydraulic, and other pressurized lines for deterioration or leakage, particularly those that flex in normal operation
- Hydraulic system for proper fluid level
- Hooks and latches for deformation, cracks, excessive wear, or damage, such as from chemicals or heat.
- Wire rope reeving for compliance with the manufacturer's specifications
- Wire rope (running and standing)
- Electrical apparatus for malfunctioning, signs of apparent excessive deterioration, dirt, or moisture accumulation
- Tires when in use for proper inflation and condition

- The equipment for level position within the tolerances specified by the equipment manufacturer's recommendations, both before each shift and after each move and setup
- Operator cab windows for significant cracks, breaks, or other deficiencies that would hamper the operator's view
- Safety devices and operational aids for proper operation

If the competent person discovers a deficiency in any crane, derrick, or related support equipment or components and determines it is a safety hazard, the equipment must be taken out of service until the deficiency is corrected.

Recordkeeping not required. There is no regulatory requirement to retain records of shift inspections.

MONTHLY INSPECTIONS

Each month the equipment is in service, a competent person must inspect it, and corrective action must be taken according to all the criteria described in the rule for shift inspections. Such equipment must not be used until any deficiencies that are a safety hazard discovered during the inspection have been corrected.

Check nonhazardous deficiency discovered during an annual inspection. If the qualified person doing an annual inspection determines there is a deficiency that is not presently a safety hazard but needs to be monitored, the employer must ensure that the deficiency is checked in the monthly inspections.

Recordkeeping: The employer that implements the monthly inspection must document and maintain the following information:

- The items checked and the results of the inspection.
- The name and signature of the person who conducted the inspection and the date.
- Retain the inspection documents for at least 3 months.

Recordkeeping by multiple employers: If several employers use the same equipment, it is up to each employer to ensure their compliance with the recordkeeping requirements for monthly inspections.

ANNUAL/ COMPREHENSIVE INSPECTIONS

Only a qualified person is allowed to conduct annual/ comprehensive inspections. At least annually (i.e., once every 12 months), a qualified person must:

- Inspect crane or derrick equipment using the criteria for conducting the shift and monthly inspections in order to more thoroughly detect and address deficiencies that might not have been detected during the shift and monthly inspections;
- Disassemble the equipment, as necessary, to complete the inspection; and
- Inspect the equipment using the additional criteria listed in the rule for annual inspections (see the annual inspection criteria list in this section of the analysis).

Determination of deficiency: If any deficiency is identified, the qualified person must immediately determine whether the deficiency constitutes a safety hazard or, though not yet a safety hazard, needs to be monitored in the monthly inspections.

If the qualified person determines that a deficiency is a safety hazard, the equipment must be taken out of service until it has been corrected. If the deficiencies involve operational aids, the temporary alternative measures for malfunctioning Category I operational aids and similar aids for tower cranes must be implemented.

If the qualified person determines that, though not presently a safety hazard, the deficiency needs to be monitored, the employer must ensure that the deficiency is checked in the monthly inspections.

Minimum annual inspection criteria: The equipment must be inspected, including functional testing, to determine that the equipment as configured in the inspection is functioning properly, for all of the following items and conditions:

- Equipment structure (e.g., the boom and jib if so equipped), including deformed, cracked, or significantly corroded structural members, bolts, rivets, and other fasteners; loose, failed, or significantly corroded; welds for cracks, and sheaves and drums for cracks or significant wear
- Parts such as pins, bearings, shafts, gears, rollers, and locking devices for distortion, cracks, or significant wear
- Brake and clutch system parts, linings, pawls, and ratchets for excessive wear
- Safety devices and operational aids for proper operation (including significant inaccuracies)
- Gasoline, diesel, electric, or other power plants for safety-related problems (such as leaking exhaust and emergency shutdown feature) and conditions and proper operation
- Chains and chain drive sprockets for excessive wear of sprockets and excessive chain stretch
- Travel steering, brakes, and locking devices for proper operation
- Tires for damage or excessive wear
- Hydraulic, pneumatic, and other pressurized hoses, fittings, and tubing
- Hydraulic and pneumatic pumps and motors
- Hydraulic and pneumatic valves
- Hydraulic and pneumatic cylinders
- Outrigger or stabilizer pads/floats for excessive wear or cracks
- Slider pads for excessive wear or cracks
- Electrical components and wiring for cracked or split insulation and loose or corroded terminations
- Warning labels and decals originally supplied with the equipment by the manufacturer or otherwise required under this standard: missing or unreadable
- Originally equipped operator seat (or equivalent): missing
- Operator seat: unserviceable
- Originally equipped steps, ladders, handrails, guards: missing

- Steps, ladders, handrails, guards: in unusable/unsafe condition

Documentation of annual/ comprehensive inspection: The employer that conducts the inspection must ensure that the items checked, the results of the inspection, and the name and signature of the person who conducted the inspection are documented and maintained for at least 12 months after the inspection.

SEVERE SERVICE INSPECTIONS

Where there is a “reasonable probability” that equipment is exposed to damage or excessive wear due to severe use or conditions, such as loading that may have exceeded rated capacity, shock loading that may have exceeded rated capacity, or prolonged exposure to a corrosive atmosphere, the employer must stop using the equipment.

A qualified person must inspect the equipment for structural damage to determine if the equipment can continue to be used safely. The inspection must include any items or conditions in the annual inspection criteria that the qualified person determines should be inspected in light of the severe use or conditions imposed on the equipment.

If a deficiency is found, the employer must follow the requirements for determining the deficiency, correcting safety hazards immediately, or monitoring nonhazardous deficiencies.

IDLE OR IRREGULAR USE INSPECTIONS

Equipment that has been idle for 3 months or more must be inspected before initial use by a qualified person according to the criteria for monthly inspections.

POST-ASSEMBLY INSPECTIONS

Upon completion of assembly, the equipment must not be used until a qualified person inspects the equipment to ensure it is configured according to the equipment manufacturer's criteria.

If the manufacturer's equipment criteria are not available, a qualified person must determine if an RPE familiar with the type of equipment involved is needed to develop criteria. If an RPE is not needed, the employer must ensure the criteria are developed by the qualified person.

MODIFIED EQUIPMENT INSPECTIONS

Before initial use, equipment that has had modifications or additions that affect the safe operation of the equipment or capacity must be inspected by a qualified person after such modifications or additions have been completed. Items for inspection include modifications or additions involving a safety device or operational aid, critical part of a control system, power plant, braking system, load-sustaining structural components, load hook, or in-use operating mechanism.

REPAIRED OR ADJUSTED EQUIPMENT INSPECTIONS

Equipment that has had a repair or adjustment related to safe operation must be inspected by a qualified person, and the inspection must include functional testing of the repaired or adjusted parts and other components that may be affected by the repair or adjustment. Items for inspection include a repair or adjustment to a safety device or operator aid, a critical part of a control system, power plant, braking system, load-sustaining structural components, load hook, or in-use operating mechanism.

The repair or adjustment must be configured according to the equipment manufacturer's criteria where they are applicable and available.

If the manufacturer's equipment criteria are not available, a qualified person must determine if an RPE familiar with the type of equipment involved is needed to develop criteria. If an RPE is not needed, the employer must ensure the criteria are developed by the qualified person.

Wire Rope

ROPE INSPECTION

Shift inspection (*no records required*). A competent person must start an inspection of running and standing wire ropes that are likely to be used for apparent deficiencies before each shift that the crane or derrick equipment is used and complete the inspection during the shift. Opening the wire rope or booming down is not required for this inspection.

There are three categories of apparent wire rope deficiencies (I, II, and III) that the competent person must consider during the inspection. The likelihood that a deficiency is hazardous increases as the number of the category increases from I to III.

If the competent person determines that a deficiency is a safety hazard, operations must stop until corrective action is taken.

Monthly inspection (*records required*). A competent person must conduct a monthly inspection using the same criteria used for the shift inspection. The inspection must include any deficiencies that the qualified person who conducts the annual inspection determines must be monitored.

Wire ropes on equipment must not be used until the monthly inspection demonstrates that no corrective action is required.

The monthly inspection must be documented in the same way that monthly inspections of crane and derrick equipment are documented.

Annual/comprehensive inspection: A qualified person must conduct the annual/comprehensive inspection using the criteria for conducting the shift inspection and inspect for additional deficiencies that are detailed in the rule. The inspection must be complete and thorough, covering the surface of the entire length of the wire ropes, for those sections that are normally hidden during shift and monthly inspections.

If an inspection is not feasible due to existing setup and configuration of the equipment (such as where an assist crane is needed) or due to site conditions (such as a dense urban setting), such inspections must be conducted as soon as it becomes feasible, but no longer than an additional 6 months for running ropes and, for standing ropes, at the time of disassembly.

The annual/ comprehensive inspection must be documented in the same way that the monthly inspections of crane equipment are documented.

ROPE SELECTION AND INSTALLATION

Original equipment wire rope and replacement wire rope must be selected and installed according to the requirements outlined in the wire rope rule. Selection of replacement wire rope must be done with the recommendations of the wire rope manufacturer, the equipment manufacturer, or a qualified person.

Wire rope (other than rotation-resistant rope) must comply with either Option 1 or Option 2 of this section, as follows:

- Option 1—The rope must comply with Section 5-1.7.1 of American Society of Mechanical Engineer's (ASME) consensus standard B30.5-2004, *Mobile and Locomotive Cranes*, except that Section 5-1.7.1(c) must not apply because it is addressed in other sections of the rule for rotation-resistant rope.
- Option 2—The rope must be designed to have, in relation to the equipment's rated capacity, a sufficient minimum breaking force and design factor so that compliance with the wire rope inspection provisions will be an effective means of preventing sudden rope failure.

Wire rope must be compatible with the safe functioning of the equipment.

Boom hoist reeving: Fiber core ropes must not be used for boom hoist reeving, except for derricks. Rotation-resistant ropes must be used for boom hoist reeving only when load hoists are used as boom hoists for attachments such as luffing attachments or boom and mast attachment systems.

Rotation-resistant rope: Rotation-resistant wire ropes are classified into Types I, II, and III, with use limitations and requirements for each type. The rule ensures that the selection of the type of rotation-resistant rope is suitable in terms of safe use. There are detailed descriptions in the rule of each type of rope and requirements for using them safely. There are also requirements for boom hoist reeving with rotation-resistant ropes. See the rule at 29 CFR 1926.1414(e) for the detailed requirements.

Clips, socketing, and seizings: Wire rope clips used with wedge sockets must be attached only to the unloaded dead end of the rope, except that the use of devices specifically designed for dead-ending rope in a wedge socket is permitted.

Socketing must be done in the manner specified by the manufacturer of the wire rope or fitting. Before

cutting a wire rope, seizings must be placed on each side of the point to be cut. The length and number of seizings must be done according to the wire rope manufacturer's instructions.

Work Area Controls

SWING RADIUS HAZARD CONTROL

Prevent employees from entering hazard areas. To prevent employees from entering the hazard areas, the employer must:

- Train each employee assigned to work on or near the equipment (i.e., authorized personnel) in how to recognize struck-by and pinch/ crush hazard areas posed by the rotating superstructure; and
- Erect and maintain control lines, warning lines, railings, or similar barriers to mark the boundaries of the hazard areas.

When the employer can demonstrate that it is neither feasible to erect such barriers on the ground nor on the equipment, the hazard areas must be clearly marked by a combination of warning signs (such as "Danger—Swing/ Crush Zone") and high-visibility markings on the equipment that identify the hazard areas. In addition, the employer must train each employee to understand what these markings signify.

When the operator knows that an employee went to a hazardous location within the swing radius, the operator must not rotate the superstructure until the operator is informed according to a prearranged system of communication that the employee is in a safe position.

MULTIPLE-CRANE SWING RADIUS HAZARD CONTROL

When any part of a crane or derrick is within the working radius of another crane or derrick, the controlling entity must institute a system to coordinate operations to avoid safety hazards. If there is no controlling entity, the employer (if there is only one employer operating the multiple pieces of equipment) or employers must institute such a system.

Load Handling

LOAD CLEARANCE

- Where available, hoisting routes that minimize the exposure of employees to hoisted loads must be used to the extent consistent with public safety.
- While the operator is not moving a suspended load, only certain authorized employees are allowed within the fall zone.

Employees within the fall zone: When employees are engaged in hooking, unhooking, or guiding the load, or in the initial connection of a load to a component or structure and are within the fall zone, all of the following criteria must be met:

- The materials being hoisted must be rigged to prevent unintentional displacement;

- Hooks with self-closing latches or their equivalent must be used. Exception: "J" hooks are permitted to be used for setting wooden trusses; and
- The materials must be rigged by a qualified rigger.
- Only employees needed to receive a load are permitted to be within the fall zone when a load is being landed.
- During a tilt-up or tilt-down operation, no employee is allowed directly under the load. Only employees essential to the operation are permitted in the fall zone but not directly under the load.

BOOM FREE FALL AND LOWERING THE LOAD

The use of equipment in which the boom is designed to free fall (live boom) is not allowed when:

- An employee is in the fall zone of the boom or load.
- An employee is being hoisted.
- The load or boom is directly over a power line or over any part of the area extending the Table A of the rule for Operations Near Power Lines Up to 350 kV clearance distance to each side of the power line; or any part of the area extending the Table A clearance distance to each side of the power line is within the radius of vertical travel of the boom or the load.
- The load is over a shaft, except where there are no employees in the shaft.
- The load is over a cofferdam, except where there are no employees in the fall zone of the boom or the load.
- Lifting operations are taking place in a refinery or tank farm.

Equipment with a live boom is allowed if that equipment was manufactured before October 31, 1984, or the equipment is a floating crane/derrick or a land crane/derrick on a vessel/flotation device, and all of the criteria for boom free-fall prohibitions are met.

Boom free-fall prevention: Where the use of equipment with a boom that is designed to free fall is prohibited, the boom hoist must have a secondary mechanism or device designed to prevent the boom from falling in the event the primary system used to hold or regulate the boom hoist fails.

Friction drums must have a friction clutch and, in addition, a braking device, to allow for controlled boom lowering, and a secondary braking or locking device, which is manually or automatically engaged, to back up the primary brake while the boom is held (such as a secondary friction brake or a ratchet and pawl device).

Hydraulic drums must have an integrally mounted holding device or internal static brake to prevent boom hoist movement in the event of hydraulic failure.

Neither clutches nor hydraulic motors must be considered brake or locking devices for purposes of this subpart.

Hydraulic boom cylinders must have an integrally mounted holding device.

Preventing uncontrolled retraction: Hydraulic telescoping booms must have an integrally mounted holding device to prevent the boom from retracting in the event of hydraulic failure.

Load line free fall: In each of the following circumstances, controlled load lowering is required, and free fall of the load line hoist is prohibited:

- An employee is directly under the load.
- An employee is being hoisted.
- The load is directly over a power line, or over any part of the area extending the Table A of the rule for Operations Near Power Lines Up to 350 kV clearance distance to each side of the power line; or any part of the area extending the Table A clearance distance to each side of the power line is within the radius of vertical travel of the load.
- The load is over a shaft.
- The load is over a cofferdam, except where there are no employees in the fall zone of the load.

Multiple Crane Lifts

Before beginning a crane or derrick operation in which more than one crane or derrick will be supporting the load, the operation must be planned. The plan must be developed by a qualified person. Where the qualified person determines that engineering expertise is needed for the planning, the employer must ensure that it is provided.

There is no requirement to document or keep a record of the plan.

The lift must be directed by a lift director or person who meets the criteria for both a competent person and a qualified person, or by a competent person who is assisted by one or more qualified persons. The lift director must review the plan in a meeting with all workers who will be involved with the operation.

Equipment Modifications

Conditions where equipment modifications or additions are allowed: Modifications or additions that affect the capacity or safe operation of the equipment are allowed if:

- The manufacturer approves the modifications/ additions in writing;
- The load charts, procedures, instruction manuals, and instruction plates/ tags/ decals are modified as necessary to accord with the modification/ addition; and
- The original safety factor of the equipment is not reduced.

Conditions where modifications or additions are not allowed. Modifications or additions that affect the capacity or safe operation of the equipment are not allowed where the manufacturer, after a review of the technical safety merits of the proposed modification/ addition, rejects the proposal and explains the reasons for the rejection in a written response.

If the manufacturer rejects the proposal but does not explain the reasons for the rejection in writing, the employer may treat this as a manufacturer's refusal to review the request.

Employer procedures when the manufacturer refuses or fails to review a request for modification or addition: In certain cases, the employer may modify crane equipment when the manufacturer refuses or fails to review a request from the employer. For example, the changes are allowed if the manufacturer is provided a detailed description of the proposed modification/ addition; is asked to approve the modification/ addition, but it declines to review the technical merits of the proposal or fails, within 30 days, to acknowledge the request or initiate the review; and the employer follows the same procedures for making changes when the manufacturer is unavailable.

Employer procedures when the manufacturer is unavailable: If the employer wants to make modifications or additions to equipment and the equipment manufacturer is unavailable, the changes are allowed if:

- An RPE who is a qualified person with respect to the equipment involved approves the modification/ addition and specifies the equipment configurations to which that approval applies;
- That engineer modifies the load charts, procedures, and instruction manuals, and instruction plates/tags/decals are modified as necessary to accord with the modification/addition; and
- The original safety factor of the equipment is not reduced.
- Modifications by military exempt. This equipment modifications rule does not apply to modifications made or approved by the U.S. military.

Hoisting Personnel

The use of equipment to hoist employees is not allowed unless the employer demonstrates that the erection, use, and dismantling of conventional means of reaching the work area (e.g., a personnel hoist, ladder, stairway, aerial lift, elevating work platform, or scaffold) would be more hazardous or is not possible because of the project's structural design or worksite conditions.

ELECTRIC MOTOR-OPERATED HOISTS

Electric motor-operated hoists must be provided with:

- A device to disconnect all motors from the line upon power failure and not permit any motor to be restarted until the controller handle is brought to the "off" position
- Where applicable, an over-speed preventive device
- A means whereby remotely operated hoists stop when any control is ineffective

Overhead Hoists

GENERAL REQUIREMENTS

- All overhead hoists in use must meet the applicable requirements for construction, design, installation, testing, inspection, maintenance, and operation, as prescribed by the manufacturer.
- The safe working load of the overhead hoist, as determined by the manufacturer, must be indicated on the hoist, and this safe working load must not be exceeded.
- The supporting structure to which the hoist is attached must have a safe working load equal to that of the hoist. The support must be arranged so as to provide for free movement of the hoist and must not restrict the hoist from lining itself up with the load.
- The hoist must be installed only in locations that will permit the operator to stand clear of the load at all times.
- Air hoists must be connected to an air supply of sufficient capacity and pressure to safely operate the hoist. All air hoses supplying air must be positively connected to prevent disconnected during use.

EQUIPMENT SPECIFICATIONS

Slings and tag lines: Loads must be properly slung. Tag lines must be of a length that will not permit entanglement in the rotors. Pressed sleeve, wedged eyes, or equivalent means must be used for all freely suspended loads to prevent hand splices from spinning open or cable clamps from loosening.

Cargo hooks: All electrically operated cargo hooks must have the electrical activating device so designed and installed as to prevent inadvertent operation. In addition, these cargo hooks must be equipped with an emergency mechanical control for releasing the load. The employer must ensure that the hooks are tested before each day's operation by a competent person to determine that the release functions properly, both electrically and mechanically

SLETTEN CONSTRUCTION CRITICAL LIFT PLAN

Critical Lift Determination

The decision to designate a lift as a critical lift is a management decision. Guidelines provided here are intended to aid in making that decision. A lift should be designated as a critical lift if dropping, upset or collision could cause or result in any one of the following:

1. Damage would result in serious economic consequences.
2. Damage that would result in unacceptable delay to schedule.
3. Undetectable damage that would jeopardize future operations or safety of a project.
4. Significant release of radioactive or other hazardous material to the environment or creation of an undesirable condition.
5. Personnel injury or significant adverse health impact, either onsite or offsite.
6. In addition, a lift that meets one of the following criteria shall be designated as a critical lift:
 - a. Any lift that requires the use of multiple cranes.
 - b. Any lift that exceeds 75% of the crane's rated capacity within the lift configuration of the crane.
 - c. The item to be lifted requires exceptional care in handling because of size, weight, close tolerance installation, high susceptibility to damage or other unusual factors.
 - d. The item, although non-critical, requires exceptional care in handling because it is being lifted above a critical item.

Project Name: _____ Project Number: _____

Date: _____ Prepared By: _____

I. CRANE DATA

1. Make and Model# _____ EQ #: _____ Operator _____

2. 2nd Crane Make & Model# _____ EQ# _____ Operator _____

3. Crane Type/Capacity: Crawler - Lattice boom- Capacity: _____

Carrier – Lattice boom- Capacity: _____

Hydraulic- Telescoping boom- Capacity: _____

Other - Boom type _____ Capacity: _____

4. Lattice Boom Model & Type: _____ Angle Chord _____ Offset Tip
 _____ Tubular Chord _____ Tapered Tip
 _____ Hammerhead

5. Boom Length: _____ ft. 6. Jib Model: _____ Jib Length: _____
 Offset _____

7. Counter weight Configuration: _____, _____ lbs.

II. LOAD CAPACITY

Precise load calculations must be performed and documented.

8. Exact load weight: _____ lbs. 9. Size of load: _____

10. Calculate Total Load

TOTAL LOAD = EXACT LOAD + RIGGING

_____ lbs. Exact Load Weight
 + _____ lbs. Rigging Weight (i.e. shackles, slings, picking beams)
 + _____ lbs. Main Block
 + _____ lbs. Effective jib weight
 + _____ lbs. Cable
 + _____ lbs. Headache Ball
 + _____ lbs. Other
 = _____ lbs. Total Load

11. Maximum Load Radius _____ ft. 12. Maximum Boom Angle _____

13. Minimum Load Radius _____ ft. 14. Minimum Boom Angle _____

Calculate parts of line required: Total Load / 2000 = _____Tons

III. RIGGING

15. Sling Construction: DIA Inches _____ # of Parts _____

16. # of Legs _____ 17. Sling Angle _____ 18. Sling Capacity _____ lbs.

19. Means of Fastening Sling or Hoist Hook to Load _____

20. Capacity of Fasteners (i.e. Shackle, picking eye, etc) _____ lbs

IV. PRELIFT REQUIREMENTS (ALL MUST BE ANSWERED YES)

(check mark indicates yes)

21. _____ Load chart Utilized for exact crane model, boom type and length

22. _____ Competent person in charge of lift: Name: _____

Title: _____

23. _____ Competent Signal Person: Name: _____

Title: _____

24. _____ Pre-Lift meeting held with crew.

25. _____ Written daily crane inspection completed.

26. _____ Swing path not over personnel.

27. _____ Footing is sound and level.

28. _____ Pre-planning for radio or hand signals communications.

29. _____ Minimum clearance from power lines can and will be maintained

(Under 50KV-10' clearance Opt 1, Over 50 KV-20' clearance)

- 30. _____** The Load radius has been measured with a tape.
 - 31. _____** Wind speed does not exceed 20 mph.
 - 32. _____** Load will not touch boom at any time.
 - 33. _____** During multiple crane lifts, neither crane shall exceed 75% of the Manufacturers rate capacity.
 - 34. _____** If on barge, the competent person has reviewed stability and potential lift conditions.
 - 35. _____** Tag lines are long enough, tied only to the load, and in good condition-loose end controlled by designated person.
 - 36. _____** Operating locations are far enough away from shoring, excavations and trenches to eliminate risk of collapse.
 - 37. _____** Outriggers or crawler tracks are fully extended and wheels are clear of ground.
 - 38. _____** Application of blocking under outrigger pads has been carefully considered.
 - 39. _____** Adequate swing clearance (min 2") between the counterweight and any obstacles.
 - 40. _____** Boom composition is correct. (Minimum necessary)
 - 41. _____** No added counterweight.
 - 42. _____** Machine is rigged with adequate type of cable & number of parts of hoist line.
 - 43. _____** Project superintendent has discussed lift with foreman and crew members.
 - 44. _____** Load block is of adequate capacity & sheaves are of proper size for hoist cable.
 - 45. _____** All rigging has been inspected for capacity & condition.
 - 46. _____** Underground structures & conditions have been considered.
 - 47. _____** When static lines are required, they are installed per plan
-

Superintendent

Date

Pre-lift Meeting Attendees:

Load Path Sketch:

(Include crane position(s), load path, height of any key points, any surrounding obstructions)

The following industry consensus standards have been incorporated into the crane and derrick rules for construction:

ANSI B30.5–1968, Crawler, Locomotive, and Truck Cranes.

ANSI/AWS D14.3–94, Specification for Welding, Earthmoving, and Construction Equipment, incorporation by reference (IBR) approved for 29 CFR 1926.1436(c).

ASME B30.2–2005, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist), IBR approved for 29 CFR 1926.1438(b).

ASME B30.5–2004, Mobile and Locomotive Cranes, IBR approved for 29 CFR 1926.1414(b); 1926.1414(e); 1926.1433(b).

ASME B30.7–2001, Base-Mounted Drum Hoists, IBR approved for 29 CFR 1926.1436(e).

ASME B30.14–2004, Side Boom Tractors, issued September 20, IBR approved for 29 CFR 1926.1440(c).

AWS D1.1/D1.1M:2002, Structural Welding Code—Steel, 18th ed., IBR approved for 29 CFR 1926.1436(c).

BS EN 13000:2004, Cranes—Mobile Cranes, published January 4, IBR approved for 29 CFR

1926.1433(c) BS EN 14439:2006, Cranes—Safety—Tower Cranes, IBR approved for 29 CFR

1926.1433(c).

ISO 11660–1:2008(E), Cranes—Access, guards, and restraints—Part 1: General, 2d ed., IBR approved for 29 CFR 1926.1423(c).

ISO 11660–2:1994(E), Cranes—Access, guards, and restraints—Part 2: Mobile cranes, IBR approved for 29 CFR 1926.1423(c).

ISO 11660–3:2008(E), Cranes—Access, guards, and restraints—Part 3: Tower cranes, 2d ed., IBR approved for 29 CFR 1926.1423(c).

PCSA Std. No. 2, Mobile Hydraulic Crane Standards, 1968, IBR approved for 29 CFR 1926.602(b), 1926.1433(a), and 1926.1501(a).

SAE J185 (rev. May 2003), Access Systems for Off-Road Machines, IBR approved for 29 CFR 1926.1423(c).

SAE J987 (rev. Jun. 2003), Lattice Boom Cranes—Method of Test, IBR approved for 29 CFR 1926.1433(c).

SAE J1063 (rev. Nov. 1993), Cantilevered Boom Crane Structures—Method of Test, IBR approved for 29 CFR 1926.1433(c).

APPENDIX III

SLETTEN CONSTRUCTION COMPANY'S POLICY'S STATEMENT REGARDING DRUG AND ALCOHOL TESTING PROGRAM

To Be Posted On Company Bulletin Boards And Delivered to Company Employees

PURPOSE

In June, 1989, Sletten Construction Company established its current policy statement regarding illegal drugs and alcoholic beverages. In addition thereto, this document sets forth Sletten Construction Company's policy regarding procedures to be used for administering a drug screening and testing program concerning substance abuse, drug and alcohol, and its affects on the workplace. This policy is intended as a supplement to the policy statement issued in June, 1989. Sletten Construction Company is committed to maintaining a work environment safe for all employee sand conducive to obtaining high work standards considering the hazardous nature of construction activity. To that end, the following standards relative to drug and alcohol testing are hereby adopted.

DETERMINATION FOR TESTING

1. **Pre-Employment:** This method will be determined on a project by project basis. Employees will be informed when this method will be used and will be subject to a drug screen either prior to beginning work but no later than five (5) days after beginning work on the project.
2. **Random Testing:** Projects will be periodically selected for substance abuse screening and testing. All Sletten Construction Company employees present on the jobsite (in some instances subcontractor personnel also) on the date selected for testing will be required to provide a urine specimen for screening purposes.
3. **Incident Testing:** Any incident that causes damage to equipment and/or property or an incident that is considered a "near miss" that could have caused damage or injury will be subject to employee testing. All Sletten Construction Company employees involved in the incident will be required to provide a urine specimen for screening purposes.
4. **Injury Accident Testing:** Any accident that causes injury to Sletten Construction Company employee, requiring extended medical treatment, or excessive lost time, will be subject to employee testing. All Sletten Construction Company employees involved will be required to provide a urine specimen for screening purposes. A designated physician or medical facility will be utilized by the injured employee for initial treatment.

PROCEDURES FOR TESTING

1. **Pre-Employment Testing:** The superintendent will schedule personnel, new hires, and those transferring from another project, for a drug screen within five (5) days of reporting to work on the project. In some cases, and individual may be required to provide a drug screen prior to beginning work.
2. **Random Testing:** The Division Manager, Risk Manager, of Safety Director shall be responsible for scheduling random testing. On the date of any such random test, all Sletten Construction Company employees present (and in some cases subcontractor employees), including officers, management, staff and hourly employees will be required to participate.
3. **Incident and/or Accident Testing:**
 - a. Should a Superintendent or Project Manager believe testing may be required in accordance with terms and conditions of this policy, the Appropriate Division Manager will determine if a screening test is to be administered. If the Division Manager is not available, the Safety Director or Corporate Legal Counsel will be contacted for testing purposes.
 - b. When approval has been obtained, the affected employee(s) will be directed to a designated physician or medical facility in the area. Medical personnel will administer the specimen collection for testing purposes.
 - c. In the event of a severe or life threatening injury that requires immediate medical attention at a facility other than that to be designated by the Company, the Risk Manager or Safety Director shall immediately make arrangements for a specimen collection at the facility rendering the treatment.

CONFIDENTIALITY OF EMPLOYEES

1. The confidentiality of our employees is of the utmost importance and will be maintained at all times.
2. Results of administered tests will be furnished to the appropriate Division Manager, Risk Manager, or Safety Director **ONLY!**
3. For administered tests that are negative, the Superintendent or Project Manager will be advised and will, in turn, notify the affected employee(s).

4. Should an administered test reflect positive results after confirmation by Gas Chromatograph/Mass Spectrometer (GC/MS) procedures, and in some cases by a Medical Review Officer (MRO), the Superintendent or Project Manager will be advised of action to be taken.
5. Under no circumstances will the Division Manager, Risk Manager, Safety Director, Superintendent, or Project Manager discuss any test results with anyone except the affected employee(s).

DISCIPLINARY ACTION

1. Personnel who test positive due to a pre-employment test, will be immediately terminated and will not be allowed back on the job site during the duration of the project. (The reason for termination will be **"Failure to comply with Company policy"**.)
2. Prior to a random test being conducted, any employee(s) who believes they have a substance abuse problem, whether it be drugs or alcohol, and makes this known to their Superintendent, the appropriate Division Manager, Risk Manager, or Safety Director, will retain their job with the Company and will be given assistance in locating an appropriate treatment program. They will also be required to periodically undergo screening tests.
3. Should an employee test positive due to random, incident/accident, or injury accident testing, an immediate thirty (30) calendar day suspension will be initiated. The employee will also be required to enroll in a treatment program under the conditions outlined above. At the end of the 30 day suspension and upon recommendations of the treatment facility, if work is still in progress, the employee will be eligible to return to work. A positive test result during treatment, upon completion of treatment, or after return to work will result in immediate termination.
4. Any employee who tests positive and refuses assistance for treatment will be terminated. (The reason for termination will be **"For failure to comply with Company Policy"**.)
5. There may be an incident or accident so severe, that termination would be necessary no matter what the results of a screening test reflect.
6. Any employee(s) who refuses to comply with the request for testing, except for pre-employment screening, will be suspended for 30 calendar days. At the end of this period, the individual(s) will be eligible to return again refuses a screening test, their action will be considered to constitute

a "voluntary quit" and they will be so informed. For the individual(s) that refuse a pre-employment screening test, their termination will be immediate.

SCOPE OF TESTING

1. The Company policy applies to and testing will cover illegal drugs, controlled substances, and alcohol. Employees are prohibited from reporting to work while under the influence of any drug, intoxicate, or other substance that will in any way adversely affect their working ability.
2. Employees taking prescription medication, pursuant to a physician's written direction, shall so inform their immediate supervisor at the commencement of the working day. The use or ingestion of prescription medication without the written direction of a physician, is a violation of this policy.

The undersigned employee agrees to the foregoing terms and conditions as a condition of employment with Sletten Construction Company.

DATED this _____ day of _____, 20_____.

Employee

NOTE: THE CORPORATE SAFETY DIRECTOR WILL FURNISH TO THE CONSTRUCTION MANAGER COPIES OF THE ACTUAL RESULTS RECEIVED FROM OUR NIDA LABORATORY. THE NAMES AND SOCIAL SECURITY NUMBERS WILL BE BLOCKED OUT PRIOR TO SUBMISSION IN ORDER TO PROTECT THE IDENTITY OF THE EMPLOYEES AND TO ALSO MAINTAIN CONFIDENTIALITY IN THE EVENT OF A POSITIVE RESULT.



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APPENDIX II RESPIRATOR PROGRAM

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Respiratory Protection Program

I. POLICY

It is the policy of Sletten Construction to protect its employees from hazardous atmosphere through a comprehensive program of recognition; evaluation; engineering, administrative and work practice controls; and personal protective equipment, including respirators. Hazard elimination and engineering and work practice controls shall be employed to control employee exposure to within allowable exposure limits as much as possible. Respirators and other personal protective equipment shall be provided to affected employees under this program. The company is committed to full compliance with applicable federal and state regulations pertaining to employee respiratory protection.

II. OBJECTIVE

This document is Sletten Construction Respiratory Protection Program and is designed to protect employees by establishing accepted practices for respirator use, providing guidelines for training and respirator selection, and explaining proper storage, use and care of respirators. This program also serves to help the company and its employees comply with Occupational Safety and Health Administration (OSHA) respiratory protection requirements as found in 29 CFR 1910.134.

III. SCOPE

This program applies to all Sletten Construction employees who need to wear a respirator to perform assigned duties. Examples of chemicals or operations that pose potential respiratory hazards and involve respirator use are:

1. Silica Dust
2. Sandblasting Black Sag
3. Epoxy Paints
4. Demolition of sheetrock, tile, paint or cutting metals

Employees who voluntarily wear filtering face pieces (dust masks that are not N95's) are not subject to the medical evaluation, cleaning, storage, and maintenance provisions of this program.

IV. ASSIGNMENT OF RESPONSIBILITY

A. Employer.

Sletten Construction is responsible for providing respirators to employees when they are necessary for health protection. Sletten Construction will provide respirators that are applicable and suitable for the intended purpose at no charge to affected employees. Any expense associated with training, medical evaluations and respiratory protection equipment will be borne by the company.

B. Safety Director

The Safety Director's for Sletten Construction is Tom Morano and Mike Allison. The Safety Director is responsible for administering the respiratory protection program. Duties of the Safety Director include:

1. Keeping up with knowledge about respiratory protection and maintaining an awareness of current regulatory requirements and good practices.
2. Identifying work areas, process or tasks that require workers to wear respirators.
3. Evaluating hazards.
4. Selecting respiratory protection options.
5. Monitoring respirator use to ensure that respirators are used in accordance with their specifications.
6. Arranging for and/or conducting training.
7. Training Employees on proper storage and maintenance.
8. Conducting qualitative fit testing with Bitrex, Banana Oil or Smoke.
9. Administering the medical surveillance program.
10. Maintaining records required by the program.
11. Evaluating the program.
12. Updating written program, as needed.

C. Supervisors

Supervisors are responsible for ensuring that the respiratory protection program is implemented in their particular areas. In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure that the program is understood and followed by the employees under their charge. Duties of the supervisor include:

1. Ensuring that employees under their supervision (including new hires) receive appropriate training, fit testing, and annual medical evaluation.
2. Ensuring the availability of appropriate respirators and accessories.

3. Being aware of tasks requiring the use of respiratory protection.
4. Enforcing the proper use of respiratory protection when necessary.
5. Ensuring that respirators are properly cleaned, maintained, and stored according to this program.
6. Ensuring that respirators fit well and do not cause discomfort.
7. Continually monitoring work areas and operations to identify respiratory hazards.
8. Coordinating with the Safety Director on how to address respiratory hazards or other concerns regarding this program.

D. Employees

Each employee is responsible for wearing his or her respirator when and where required and in the manner in which they are trained. Employees must also:

1. Use the respiratory protection in accordance with the manufacturer's instructions and the training received.
2. Care for and maintain their respirators as instructed, guard them against damage, and store them in a clean, sanitary location.
3. Immediately report any defects in the respiratory protection equipment and whenever there is a respirator malfunction, immediately evacuate to a safe area and report malfunction.
4. Promptly report to the supervisor any symptoms of illness that may be related to respirator usage or exposure to hazardous atmospheres.
5. Report any health concerns related to respirator use or changes in health status to occupational physician.
6. Inform their supervisor or the Safety Director of any respiratory hazards that they feel are not adequately addressed in the workplace and of any other concerns that they have regarding this program.

V. PROGRAM

A. Hazard Assessment and Respirator Selection

The Safety Director will select respirators to be used on site, based on the hazards to which workers are exposed and in accordance with the OSHA Respiratory Protection Standard. The Safety Director will conduct a hazard evaluation for each operation, process, or work area where airborne contaminants may be present in routine operations or during an emergency. A log of identified hazards will be maintained by the Safety Director (See Sample Hazard Assessments, Attachment A – 1, A – 2, and A – 3. Also see Sample Hazard Evaluation, Attachment C). The hazard evaluations shall include:

1. Identification and development of a list of hazardous substances used in the workplace by department or work process.

2. Review of work processes to determine where potential exposures to hazardous substances may occur. This review shall be conducted by surveying the workplace, reviewing the process records, and talking with employees and supervisors.
3. Exposure monitoring to quantify potential hazardous exposures.

The proper type of respirator for the specific hazard involved will be selected in accordance with the manufacturer's instructions (See Attachment D for more additional information on respirators). Selection of the employees and appropriate respiratory protection shall be documented by the Safety Director (See Attachment E).

B. Updating the Hazard Assessment

The Safety Director must revise and update the hazard assessment as needed (i.e., any time work process changes may potentially affect exposure). If an employee feels that respiratory protection is needed during a particular activity, s/he is to contact his/her supervisor or the Safety Director. The Safety Director will evaluate the potential hazard, and arrange for outside assessment if necessary. The Safety Director will then communicate the results of that assessment to the employees. If it is determined that respiratory protection is necessary, all other elements of the respiratory protection program will be in effect for those tasks, and the respiratory program will be updated accordingly.

C. Training

The Safety Director will provide training to respirator users and their supervisors on the contents of the Sletten Construction Respiratory Protection Program and their responsibilities under it, and on the OSHA Respiratory Protection Standard. All affected employees and their supervisors will be trained prior to using a respirator in the workplace. Supervisors will also be trained prior to supervising employees that must wear respirators.

The training course will cover the following topics:

1. The Sletten Construction Respiratory Protection Program;
2. The OSHA Respiratory Protection Standard (29 CFR 1910.134);
3. Respiratory hazards encountered at Sletten Construction and their health affects;
4. Proper selection and use of respirators;
5. Limitations of respirators;
6. Respirator donning and user seal (fit) checks;
7. Fit testing;
8. Emergency use procedures;
9. Maintenance and storage; and
10. Medical signs and symptoms limiting the effective use of respirators.

Employees will be retrained annually or as needed (e.g., if they change Jobsites or work processes and need to use a different respirator). Employees must demonstrate their understanding of the topics covered in the training through hands-on exercises. The Safety Director will document respirator training and the documentation will include the type, model, and size of respirator for which each employee has been trained and fit tested.

D. NIOSH Certification

All respirators must be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall be used in accordance with the terms of that certification. Also, all filters, cartridges, and canisters must be labeled with the appropriate NIOSH approval label. The label must not be removed or defaced while the respirator is in use.

E. Voluntary Respirator Use

The Safety Director shall authorize voluntary use of respiratory protective equipment as requested by all other workers on a case-by-case basis, depending on specific workplace conditions and the results of medical evaluations.

The Safety Director will provide all employees who voluntarily choose to wear respirators with a copy of Appendix D of the OSHA Respiratory Protection Standard 1910.134. (Appendix D details the requirements for voluntary use of respirators by employees.) Employees who choose to wear a half face piece APR must comply with the procedures for medical evaluation, respirator use, cleaning, and maintenance and Storage portions of this program.

F. Medical Evaluation

Employees who are either required to wear respirators, or who choose to wear a half face piece APR voluntarily, must pass a medical exam provided by Sletten Construction before being permitted to wear a respirator on the job. Employees are not permitted to wear respirators until a physician has determined that they are medically able to do so. Any employee refusing the medical evaluation will not be allowed to work in an area requiring respirator use.

A licensed physician at 3M Online, where all company medical services are provided, will provide the medical evaluations. Medical evaluation procedures are as follows:

1. The medical evaluation will be conducted using the questionnaire provided in Appendix C of the OSHA Respiratory Protection Standard 1910.134. The Safety Director will provide a copy of this questionnaire to all employees requiring medical evaluations (See

Attachment F for a copy of Appendix C of the OSHA Respiratory Protection Standard. Appendix C is the OSHA Respirator Medical Evaluation Questionnaire).

2. To the extent feasible, the company will provide assistance to employees who are unable to read the questionnaire. When this is not possible, the employee will be sent directly to the physician for medical evaluation.
3. All affected employees will be given a copy of the medical questionnaire to complete, along with a stamped and addressed envelope for mailing the questionnaire to the company physician. Employees will be permitted to complete the questionnaire on company time.
4. Follow-up medical exams will be granted to employees as required by the Standard, and/or as deemed necessary by the evaluating physician.
5. All employees will be granted the opportunity to speak with the physician about their medical evaluation, if they so request.
6. The Safety Director shall provide the evaluating physician with a copy of this Program, a copy of the OSHA Respiratory Protection Standard, the list of hazardous substances by work area, and the following information about each employee requiring evaluation:
 - a. his or her work area or job title;
 - b. proposed respirator type and weight;
 - c. length of time required to wear respirator;
 - d. expected physical work load (light, moderate or heavy);
 - e. potential temperature and humidity extremes; and
 - f. any additional protective clothing required.
7. Positive pressure air purifying respirators will be provided to employees as required by medical necessity.
8. After an employee has received clearance to wear his or her respirator, additional medical evaluations will be provided under the following circumstances:
 - a. The employee reports signs and/or symptoms related to their ability to use the respirator, such as shortness of breath, dizziness, chest pains or wheezing.
 - b. The evaluating physician or supervisor informs the Safety Director that the employee needs to be reevaluated.

- c. Information found during the implementation of this program, including observations made during the fit testing and program evaluation, indicates a need for reevaluation.
- d. A change occurs in workplace conditions that may result in an increased physiological burden on the employee.

A list of employees currently involved in the Respiratory Protection Program is provided by the Safety Director.

All examinations and questionnaires are to remain confidential between the employee and the physician. The Safety Director will only retain the physician's written recommendations regarding each employee's ability to wear a respirator.

G. Fit Testing

Employees who are required to or who voluntarily wear half-face piece APRs will be fit tested:

1. prior to being allowed to wear any respirator with a tight-fitting face piece;
2. annually; or
3. when there are changes in the employee's physical condition that could affect respiratory fit (e.g., obvious change in body weight, facial scarring, etc.).

Employees will be fit tested with the make, model, and size of respirator that they will actually wear. Employees will be provided with several models and sizes of respirators so that they may find an optimal fit. Fit testing of powered air purifying respirators will be conducted in the negative pressure mode.

The Safety Director will conduct fit tests in accordance with Appendix A of the OSHA Respiratory Protection Standard 1910.134.

H. General Respirator Use Procedures

1. Employees will use their respirators under conditions specified in this program, and in accordance with the training they receive on the use of each particular model. In addition, the respirator shall not be used in a manner for which it is not certified by NIOSH or by its manufacturer.
2. All employees should conduct user seal checks each time they wear their respirators. Employees should use either the positive or negative pressure check (depending on which test works best for them) as specified in the OSHA Respiratory Protection Standard.

- a. **Positive Pressure Test:** This test is performed by closing off the exhalation valve with your hand. Breathe air into the mask. The face fit is satisfactory if some pressure can be built up inside the mask without any air leaking out between the mask and the face of the wearer.
 - b. **Negative Pressure Test:** This test is performed by closing of the inlet openings of the cartridge with the palm of you hand. Some masks may require that the filter holder be removed to seal off the intake valve. Inhale gently so that a vacuum occurs within the face piece. Hold your breath for ten (10) seconds. If the vacuum remains, and no inward leakage is detected, the respirator is fit properly.
3. All employees shall be permitted to leave the work area to go to the locker room to maintain their respirator for the following reasons:
 - a. to clean their respirator if it is impeding their ability to work;
 - b. to change filters or cartridges;
 - c. to replace parts; or
 - d. to inspect respirator if it stops functioning as intended.

Employees should notify their supervisor before leaving the area.

4. Employees are not permitted to wear tight-fitting respirators if they have any condition, such as facial scars, facial hair, or missing dentures that would prevent a proper seal. Employees are not permitted to wear headphones, jewelry, or other items that may interfere with the seal between the face and the face piece.
5. Before and after each use of a respirator, an employee or immediate supervisor must make an inspection of tightness or connections and the condition of the face piece, headbands, valves, filter holders and filters. Questionable items must be addressed immediately by the supervisor and/or Safety Director.

I. Air Quality

For supplied-air respirators, only Grade D breathing air shall be used in the cylinders. The Safety Director will coordinate deliveries of compressed air with the company's vendor and will require the vendor to certify that the air in the cylinders meets the specifications of Grade D breathing air.

The Safety Director will maintain a minimum air supply of one fully charged replacement cylinder for each SAR unit. In addition, cylinders may be recharged

as necessary from the breathing air cascade system located near the respirator storage area.

J. Change Schedules

Respirator cartridges shall be replaced as determined by the Safety Director, supervisor(s), and manufacturers' recommendations.

K. Cleaning

Respirators are to be regularly cleaned and disinfected . Respirators issued for the exclusive use of an employee shall be cleaned as often as necessary. Atmosphere-supplying and emergency use respirators are to be cleaned and disinfected after each use.

The following procedure is to be used when cleaning and disinfecting reusable respirators:

1. Disassemble respirator, removing any filters, canisters, or cartridges.
2. Wash the face piece and all associated parts (except cartridges and elastic headbands) in an approved cleaner-disinfectant solution in warm water (about 120 degrees Fahrenheit). Do not use organic solvents. Use a hand brush to remove dirt.
3. Rinse completely in clean, warm water.
4. Disinfect all facial contact areas by spraying the respirator with an approved disinfectant.
5. Air dry in a clean area.
6. Reassemble the respirator and replace any defective parts. Insert new filters or cartridges and make sure the seal is tight.
7. Place respirator in a clean, dry plastic bag or other airtight container.

The Safety Director will ensure an adequate supply of appropriate cleaning and disinfection materials at the cleaning station. If supplies are low, employees should notify their supervisor, who will inform the Safety Director.

L. Maintenance

Respirators are to be properly maintained at all times in order to ensure that they function properly and protect employees adequately. Maintenance involves a thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use. No components will be replaced or repairs made beyond those recommended by the manufacturer. Repairs to regulators or alarms of atmosphere-supplying respirators will be conducted by the manufacturer.

1. All respirators shall be inspected routinely before and after each use.

2. Respirators kept for emergency use shall be inspected after each use, and at least monthly by the Safety Director to assure that they are in satisfactory working order
3. The Respirator Inspection Checklist (See Attachment G – 1 and G - 2) will be used when inspecting respirators.
4. A record shall be kept of inspection dates and findings for respirators maintained for emergency use.
5. Employees are permitted to leave their work area to perform limited maintenance on their respirator in a designated area that is free of respiratory hazards. Situations when this is permitted include:
 - a. washing face and respirator face piece to prevent any eye or skin irritation;
 - b. replacing the filter, cartridge or canister;
 - c. detection of vapor or gas breakthrough or leakage in the face piece; or
 - d. detection of any other damage to the respirator or its components.

M. Storage

After inspection, cleaning, and necessary repairs, respirators shall be stored appropriately to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals.

1. Respirators must be stored in a clean, dry area, provided by employee. Each employee will clean and inspect their own air-purifying respirator, and will store their respirator in a plastic bag . Each employee will have his/her name on the bag and that bag will only be used to store that employee's respirator.
2. Respirators shall be packed or stored so that the face piece and exhalation valve will rest in a near normal position.
3. Respirators shall not be placed in places such as lockers or toolboxes unless they are in the storage bag.
4. Respirators maintained at stations and work areas for emergency use shall be stored in compartments built specifically for that purpose, be quickly accessible at all times, and be clearly marked.

5. The Safety Director will store Sletten Construction's supply of respirators and respirator components in their original manufacturer's packaging in the Designated Area.

N. Respirator Malfunctions and Defects

1. For any malfunction of an ASR (atmosphere-supplying respirator), such as breakthrough, face piece leakage, or improperly working valve, the respirator wearer should inform his/her supervisor that the respirator no longer functions as intended, and go to the designated safe area to maintain the respirator. The supervisor must ensure that the employee either receives the needed parts to repair the respirator or is provided with a new respirator.

All workers wearing atmosphere-supplying respirators will work with a buddy. The Safety Director shall develop and inform employees of the procedures to be used when a buddy is required to assist a coworker who experiences an ASR malfunction.

2. Respirators that are defective or have defective parts shall be taken out of service immediately. If, during an inspection, an employee discovers a defect in a respirator, he/she is to bring the defect to the attention of his/her supervisor. Supervisors will give all defective respirators to the Safety Director. The Safety Director will decide whether to:
 - a. temporarily take the respirator out of service until it can be repaired;
 - b. perform a simple fix on the spot, such as replacing a head strap; or
 - c. dispose of the respirator due to an irreparable problem or defect.

When a respirator is taken out of service for an extended period of time, the respirator will be tagged out of service, and the employee will be given a replacement of a similar make, model, and size.

O. Emergency Procedures

In emergency situations where an atmosphere exists in which the wearer of the respirator could be overcome by a toxic or oxygen-deficient atmosphere, the following procedure should be followed. The locations where the potential for dangerous atmosphere exists are listed in Attachment H of this document. The locations in the company where the potential for IDLH (Immediately Dangerous

to Life and Health) exist are listed in Attachment I of this document. Locations of emergency respirators are also listed in Attachment H.

1. When the alarm sounds, employees in the affected area must immediately don their emergency escape respirator, shut down their process equipment, and exit the work area.
2. All other employees must immediately evacuate the building. The Emergency Action Plan describes these procedures (including proper evacuation routes and rally points) in greater detail.
3. Employees who must remain in a dangerous atmosphere must take the following precautions:
 - a. Employees must never enter a dangerous atmosphere without first obtaining the proper protective equipment and permission to enter from the Safety Director or supervisor.
 - b. Employees must never enter a dangerous atmosphere without at least one additional person present. The additional person must remain in the safe atmosphere.
 - c. Communications (voice, visual or signal line) must be maintained between both individuals or all present.
 - d. Respiratory protection in these instances is for escape purposes only. Sletten Construction employees are not trained as emergency responders, and are not authorized to act in such a manner.

P. Program Evaluation

The Safety Director will conduct periodic evaluations of the workplace to ensure that the provisions of this program are being implemented. The evaluations will include regular consultations with employees who use respirators and their supervisors, site inspections, air monitoring and a review of records. Items to be considered will include:

1. comfort;
2. ability to breathe without objectionable effort;
3. adequate visibility under all conditions
4. provisions for wearing prescription glasses;
5. ability to perform all tasks without undue interference; and
6. confidence in the face piece fit.

Identified problems will be noted in an inspection log and addressed by the Safety Director. These findings will be reported to management, and the report will list plans to correct deficiencies in the respirator program and target dates for the implementation of those corrections.

Q. Documentation and Recordkeeping

1. A written copy of this program and the OSHA Respiratory Protection Standard shall be kept in the Safety Director's office and made available to all employees who wish to review it.
2. Copies of training and fit test records shall be maintained by the Safety Director. These records will be updated as new employees are trained, as existing employees receive refresher training, and as new fit tests are conducted
3. For employees covered under the Respiratory Protection Program, the Safety Director shall maintain copies of the physician's written recommendation regarding each employee's ability to wear a respirator. The completed medical questionnaires and evaluating physician's documented findings will remain confidential in the employee's medical records at the location of the evaluating physician's practice.

ATTACHMENT A - 1

Sample Hazard Assessment Log

Hazard Assessment Log				
<u>DATE</u>				
Department	Contaminants	Exposure Level (8 hr TWA*)	PEL**	Controls

* Summarized from Industrial Hygiene report provided by Responsible Person.
** These values were obtained from a survey on average exposures as published in the American Journal of Industrial Hygiene _____.

**Respiratory Protection Hazard
Assessment and Selection Form**

Agency/Institution: _____

Worksite: _____

General Description of Job Task: _____

Job Classification(s) _____

Level of physical exertion required to perform job: _____

Respiratory hazard(s) present: _____

OSHA PEL: _____ ACGIH TLV (if applicable): _____

Is monitoring data available? _____ Yes _____ No
If yes, attach to this form.

Contaminant concentrations present in the workplace:

Contaminant(s): _____ Concentration: _____

Contaminant(s): _____ Concentration: _____

Contaminant(s): _____ Concentration: _____

Does data indicate levels that exceed applicable limits? _____ Yes _____ No

Do data indicate IDLH concentrations? _____ Yes _____ No

Note: Wherever hazardous exposure(s) cannot be identified or reasonably quantified, the atmosphere must be considered IDLH.

Does data indicate oxygen deficiency (less than 19.5%)? Yes No

Is the respirator for routine use or emergency use? _____

Additional factors (i.e. temperature and humidity levels, etc.): _____

Communication requirements: _____

Are engineering/ administrative controls feasible? Yes No

If no, describe reasons: _____

Type of respirator selected: air purifying atmosphere supplying

Style of respirator selected: tight-fitting lose-fitting

Make: _____

Model# _____

Type of canister or cartridge to be used: _____

Cartridge/canister change schedule if applicable _____

Name of Evaluator: _____

Date: _____

Title: _____ Work

Phone: _____

Signature	Name and Title (print)	Date
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ATTACHMENT B

Sample Record of Respirator Use

Required and Voluntary Respirator Use at <i>(Sletten Construction)</i>	
Type of Respirator	Department/Process
Filtering face piece (dust mask)	Voluntary use for warehouse workers
Half-face piece APR or PAPR with P100 filter	Prep and Assembly Voluntary use for maintenance workers when cleaning spray booth walls or changing spray booth filter
SAR, pressure demand, with auxiliary SCBA	Maintenance - dip coat tank cleaning
Continuous flow SAR with hood	Spray booth operations Prep (cleaning)*
Half-face piece APR with organic vapor cartridge	Voluntary use for Dip Coat Tenders, Spray Booth Operators (gun cleaning), and maintenance workers (loading coating agents into supply systems)
Escape SCBA	Dip Coat, Coatings Storage Area, Spray Booth Cleaning Area

*** until ventilation is installed.**

ATTACHMENT C

Sample Hazard Evaluation

Process Hazard Evaluation for <u>SLETTEN CONSTRUCTION</u> <u>DATE</u>	
Process	Noted Hazards
Prep-sanding	Ventilation controls on some sanders are in place, but employees continue to be exposed to respirable wood dust at 2.5 - 7.0 mg/m ³ (8 hour time-weighted-average, or TWA). Half-face piece APRs with P100 filters and goggles are required for employees sanding wood pieces. PAPRs will be available for employees who are unable to wear an APR.
Prep-cleaning	Average methylene chloride exposures measured at 70 ppm based on 8-hour TWA exposure results for workers cleaning and stripping furniture pieces. Ventilation controls are planned, but will not be implemented until designs are completed and a contract has been let for installation of the controls. In the meantime, employees must wear supplied air hoods with continuous airflow, as required by the Methylene Chloride Standard 1910.1052.
Assembly	Ventilation controls on sanders are in place, but employees continue to be exposed to respirable wood dust at 2.5 - 6.0 mg/m ³ (8 hour TWA); half-face piece APRs with P100 filters and goggles are required for employees sanding wood pieces in the assembly department. PAPRs will be available for employees who are unable to wear an APR. The substitution for aqueous-based glues will eliminate exposures to formaldehyde, methylene chloride, and epoxy resins.
Maintenance	Because of potential IDLH conditions, employees cleaning dip coat tanks must wear a pressure demand SAR during the performance of this task.
Cleaning Spray Booth Walls	Employees may voluntarily wear half-face piece APRs with P100 cartridges. Although exposure monitoring has shown that exposures are kept within PELs during this procedure, <u>Sletten Construction</u> will provide respirators to workers who are concerned about potential exposures
Loading Coating Agents	Employees may voluntarily wear half-face piece APRs with

into Supply Systems	organic vapor cartridges. Although exposure monitoring has shown that exposures are kept within PELs during this procedure, <u>Sletten Construction</u> will provide respirators to workers who are concerned about potential exposures
Changing Booth Filters	Employees may voluntarily wear half-face piece APRs with P100 cartridges. Although exposure monitoring has shown that exposures are kept within PELs during this procedure, <u>Sletten Construction</u> will provide respirators to workers who are concerned about potential exposures

(Include documentation of the sampling data that hazard evaluation is based on.

ATTACHMENT D

Respirator Protection

Types of Respirators:

Respirators are classified into two main classes according to the type of hazardous environment in which the respirator is to be used and the degree of danger to life and health, which that environment presents.

I. Supplied-Air Respirators:

This type of respirator supplies uncontaminated breathing air to the user from an external source of air connected by a high-pressure hose to the face piece, hood or helmet. They offer certain advantages over other types of respirators and may be the preferred form of respiratory protection in some applications. Some models are equipped with an air cylinder for emergency escape from an Immediately Dangerous to Life or Health (IDLH) atmosphere. An IDLH atmosphere poses an immediate hazard to life or produces irreversible debilitating effects on health.

Supplied-air respirators are approved for use under the following conditions where the use of air-purifying respirators is precluded:

- In atmospheres where contaminants do not emit a detectable odor or taste or cause irritation at safe concentrations.
- To protect against substances that would generate a high heat reaction with the absorbent in an air-purifying respirator.
- Where chemicals in the atmosphere are absorbed very poorly by the absorbents used in air-purifying respirators, causing very short service life, or where the chemicals are not absorbed at all.
- Where there are two or more contaminants in the atmosphere for which different air-purifying elements are recommended, such as ammonia and benzene, and a combination element is not available.
- When the concentration of a substance is greater than the approved limit for an air-purifying respirator.

Self-Contained Breathing Apparatus (SCBA):

The Self-Contained Breathing Apparatus (SCBA) is a special type of supplied-air respirator that gives the user an independent air supply from a pressurized tank on the wearer's back.

Generally, the air supply lasts for 30 to 60 minutes, but is dependent upon the wearer's size and the type of work performed. SCBAs are used under the following conditions:

- In oxygen-deficient atmospheres where the oxygen level is below 19.5%.
- In poorly ventilated areas and/or in confined spaces such as tanks, tunnels, or vessels. **Note:** SCBAs are not required if the confined space is well ventilated and the concentration of toxic contaminants is known to be below the upper protection limit recommended for the respirator.
- In atmospheres where the concentration of contaminants is Immediately Dangerous to Life or Health (IDLH).
- In atmospheres where the concentration of toxic contaminants is unknown. Any unknown concentration must be treated as IDLH.
- For firefighting.

II. Air-Purifying Respirators:

This type of respirator usually consists of a facepiece fitted with appropriate mechanical filters or chemical cartridges or canisters to remove dusts, mists and specific fumes, gases and vapors from the breathing air. The filters and cartridges are color-coded to help the user match the right respirator, filter and/or cartridge to the hazard(s) present in the work area. They are the lightest and the easiest to use type of respiratory protection. The vast majority of work environments fall within their protection limits. Air-purifying respirators include:

- **Powered Air-Purifying Respirators (PAPRs)** have air blowers to pull air through the cartridges and filters. Some PAPRs are available with hoods or other protective headgear for use in specific types of environments. A PAPR equipped with a hood may be used instead of a tight-fitting face piece by wearers with facial hair, scars, or spectacles. PAPRs are available with chemical cartridges or with High Efficiency Particulate Air-Purifying (HEPA) filters.
- **Full-Face piece Air-Purifying Respirators** are equipped with a with chemical cartridges and/or filters and a face shield to protect the wearer's face and eyes from liquid splashes or flying particles. Some devices include a speaking diaphragm for easier communication.
- **Half-Mask Air-Purifying Respirators** cover only the nose and mouth. They often use the same cartridges and filters as full-face piece models. Most manufacturers offer two or three sizes to fit nearly all workers. They usually come with a rubber or silicone face piece and can be worn with prescription or non-prescription glasses or goggles.
- **Mouthpiece Respirators** are for emergency escape from known concentrations of contaminants. They are lightweight and easily worn around the neck or clipped to a belt. Mouthpiece respirators however are not designed for extended or routine use.

- **Disposable Respirators** protect the wearer from low (nuisance) concentrations of fumes, mists and/or dust. Some models include an exhalation channel that exhausts air directly for less hot air and moisture buildup in the mask.

Respirator Approval:

The National Institute for Occupational Safety and Health (NIOSH) is responsible for the testing and certification of respiratory protective devices. If approval is given, the items certified are given a TC number, signifying it has been tested and certified. Respiratory protective devices must bear the TC number to be approved for use.

Selection Process:

1. Identify the airborne contaminant(s):

An important source of information on airborne contaminants is the Material Safety Data Sheet (MSDS) for each product. The MSDS identifies the ingredients in each product that have been determined to be a health hazard and the physical and chemical characteristics of the product such as vapor pressure and flash point.

The physical form of the hazard will also help you determine the type of respiratory protection you will need.

Dusts are tiny suspended particles resulting from a mechanical process such as grinding.
Mists are tiny liquid droplets usually created by spraying operations.
Fumes are small particles formed by a condensing gas or vapor such as in welding.
Vapors are substances that evaporate from a liquid or solid.
Gases are formless fluids that occupy the space in which they are enclosed. Examples include nitrogen and carbon monoxide.
Smoke is a mixture of suspended particles and gases which are the result of combustion.
Smoke can contain toxic contaminants.

2. Determine the concentration level of the contaminant:

Sensitive monitoring instruments will give you a precise reading of the airborne concentration level of the contaminant. If testing indicates that you are exposed to an airborne concentration level at or above the Permissible Exposure Level (PEL) established for that substance, you must use respiratory protection.* This testing should be done by an industrial hygienist or other qualified staff.

3. Evaluate the conditions of exposure:

There are many variables that can affect your choice of respiratory protection. Always keep these factors in mind:

The nature of the task. How long will you be exposed to each hazard? Is the work strenuous, which makes breathing more difficult?

The characteristics of the work area. Is the work area a confined space and/or poorly ventilated? Will air temperatures be hot or cold? Could more than one contaminant be present?

The type of work process. Does the way chemicals are combined, heated or applied create an additional or new health hazard? An example of this could be a paint spraying or welding operation.

4. **Match the hazard, concentration level and the conditions of exposure to the proper type of respirator:**

A wide range of supplied-air and air-purifying respirators are available from various manufactures. Contact your supervisor and/or your agency/institution safety coordinator for help in selecting the proper respirator for your specific work area.

* **Note:** The OSHA Respiratory Protection Standard (29 CFR 1910.134) requires the employer to prevent occupational diseases caused by breathing contaminated air by the use of engineering control measures such as the enclosure of the operation or the substitution of less toxic materials. When effective engineering controls are not feasible, or while these controls are being instituted, appropriate respirators must be used in accordance with the requirements of the standard.

ATTACHMENT E

Sample Record of Respirator Issuance

<u>Sletten Construction</u>				
Personnel in Respiratory Protection Program				
<u>Date</u>				
Respiratory protection is required for and has been issued to the following personnel:				
Name	Department	Job Description/ Work Procedure	Type of Respirator	Date Issued
		Operator	Half mask APR P100 filter when sanding/ AR continuous flow hood for cleaning	
		Dip tank cleaning	SAR, pressure demand with auxiliary SCBA	
		Spray Booth	SAR, continuous	

ATTACHMENT G - 1

Respirator Inspection Checklist

Type of Respirator:	Location:
Respirator Issued to:	Type of Hazard:
Face piece	<input type="checkbox"/> Cracks, tears, or holes <input type="checkbox"/> Face mask distortion <input type="checkbox"/> Cracked or loose lenses/face shield
Head straps	<input type="checkbox"/> Breaks or tears <input type="checkbox"/> Broken buckles
Valves:	<input type="checkbox"/> Residue or dirt <input type="checkbox"/> Cracks or tears in valve material
Filters/Cartridges:	<input type="checkbox"/> Approval designation <input type="checkbox"/> Gaskets <input type="checkbox"/> Cracks or dents in housing <input type="checkbox"/> Proper cartridge for hazard
Air Supply Systems	<input type="checkbox"/> Breathing air quality/grade <input type="checkbox"/> Condition of supply hoses <input type="checkbox"/> Hose connections <input type="checkbox"/> Settings on regulators and valves
Rubber/Elastomer Parts	<input type="checkbox"/> Pliability <input type="checkbox"/> Deterioration

Inspected by:	Date:
Action Taken:	

**ATTACHMENT G – 2
SCBA Inspection Checklist**

SCBA Identification Number:

--

1. Is the Face piece in good condition? Look for these Items:	Yes	No	N/A
• Excessive dirt			
• Cracks, tears, holes or distortions from improper storage			
• Inflexibility			
• Cracked or badly scratched lenses in full face pieces			
• Incorrectly mounted full face piece lens or broken or missing mounting clips			
2. Are the headstraps or head harness in good condition? Look for these items:			
• Breaks in the straps			
• Loss of elasticity			
• Broken or malfunctioning buckles and attachments			
• Excessively worn serrations on the head harness which might permit slippage			
3. Is the exhalation valve in good condition? Look for these items:			
• Foreign material under the valve seat			
• Cracks, tears or distortion in the valve material			
• Improper insertion of the valve body in the face piece			
• Cracks, breaks or chips in the valve body, particularly in the sealing surface			
• Missing or defective valve cover			
• Improper installation of the valve in the valve body			
4. Is the breathing tube in good condition? Look for these items:			
• Damaged, worn or missing end connectors			
• Missing or loose hose clamps			
• Deterioration of the hose material			
5. Is the high pressure air supply in good condition? Look for these items:			
• Air supply lines, hoses, attachments and end fittings worn			
• Valves and air flow regulators inoperable			
• Low pressure alarm inoperable			
• Air cylinder less than full			
• Gauges inoperable			
• Air cylinder damaged			
• Air cylinder hydrostatic test out of date			
6. Is the cylinder harness in good condition? Look for these items:			
• Straps or frame showing wear or damage			
• Broken or malfunctioning buckles and attachments			
• Air cylinder attachment devices inoperable			

8

6

6

If you answered 'no' to any question above, list corrective action taken here:

Inspected by:	Date:

ATTACHMENT H

Sample Emergency Potential Log

The following work areas at Sletten Construction have been identified as having foreseeable emergencies:

Area	Type of Emergency	Location of Emergency Respirator(s)

Safety Director

Date

ATTACHMENT I

Sample Immediately Dangerous to Life and Health (IDLH) Assessment Log

The Safety Director has identified the following area as presenting the potential for IDLH conditions:

Process	IDLH Condition	Procedure
		<p>Workers will follow the permit required confined space entry procedures specified in the <u><i>(Sletten Construction)</i></u> Confined Space Program. As specified in these procedures, the Safety Director has determined that workers entering this area shall wear a pressure demand SAR. In addition, an appropriately trained and equipped standby person shall remain outside the dip tank and maintain constant voice and visual communication with the worker. In the event of an emergency requiring the standby person to enter the IDLH environment, the standby person shall immediately notify the Safety Director and will proceed with rescue operations in accordance with rescue procedures outlined in the <u><i>(Sletten Construction)</i></u> Confined Space Program.</p>

Safety Director

Date

ATTACHMENT D-1

Guidelines for Voluntary Dust Mask Respirator Use at Sletten Construction

The information on this sheet is intended for employees using respirators voluntarily and meets the requirements outlined in appendix D of OSHA'S Respiratory Protection Standard 29 CFR 1910.134. Each employee using a dust mask respirator on a voluntary basis must be given a copy of this instruction sheet.

Voluntary Respirator Use

When Airborne contaminants levels are below permissible levels, (that is, they are essentially non-hazardous) respirator use at Sletten Construction is considered voluntary. If dust mask respirator use is voluntary, employees must complete the following:

1. Read and follow all instruction provided by the respirator manufacturer on use, maintenance, cleaning, care, and warnings regarding respirator limitations.
2. Choose respirator certified by NIOSH (National Institute for Occupational Safety and Health). A label or statement of certification should appear on the respirator or respirator packaging. The label will indicate what the respirator is designed for and its limitations.
3. Do not wear respirators in atmosphere containing contaminants for which they are not designed to protect against. For example, a respirator designed to filter dust particles will not protect against gases, vapors, or very small solid particles of fume or smoke. Voluntary dust mask respirators should only be used for nuisance dusts. (DO NOT use them for lead, asbestos, cadmium, etc.)
4. Dust mask respirators should only be used by their owners.
5. Protect respirators from moisture, dust or other contaminants by storing them in plastic zip-lock bags or container that can be sealed.
6. Ensure that no other objects are resting against the stored respirators. This could damage the respirator, resulting in an improper fit when they are worn.
7. Destroy dust masks when discarded. Break the straps or tear the respirator to make them unusable for anyone else.

APPENDIX III

SAFETY INCENTIVE PROGRAM

INTRODUCTION

The health and welfare of Sletten Construction employees has to be priority one. Misdirected employees may take short cuts, decide to forgo safety precautions, and determine that production is more important than following company safety procedures, and in turn cost the company tens of thousands of dollars in lost time and medical costs. In today's fierce competitive world, where a company's E-mod rating is so important, companies cannot survive unless employees clearly understand and are committed to working safely to achieve company goals. Closer to home, our direct and indirect job costs, as well as cost of doing business are known to increase in direct proportion to accident frequency ratings.

Sletten Construction's Safety Program starts with the superintendents, who are to encourage and promote behaviors that support the Health and Safety Program as well as the development of a positive health and safety culture. Accidents can be prevented through planning, training, and most of all, a cooperative effort in all areas of our jobsite operations. In addition to our safety program, and a further effort to prevent death, injury and unnecessary hazards to our employees; loss of production time and damage to equipment; and to increase our competitive position, Sletten Construction has established the following Safety Incentive Program.

PART A PROJECT HOURLY EMPLOYEES

1. As an accident-free employee of Sletten Construction Company, you become an active participant in our Safety Incentive Program.
2. The following criteria will be the basis of the program:
 - a. Each week that is completed on your project without experiencing a reportable accident, you and your co-workers, who were on the job a minimum of 36 hours, will be issued a token worth \$5.00. However, if a reportable accident has occurred, tokens will not be issued for that week.
 - b. Should you experience an accident that is not considered reportable, but the accident caused you to visit a doctor for a check-up or for a one-time treatment, you will not receive a token for that week, but your co-workers will.
 - c. In addition to working safe, you will be required to sign your time card each week. If your time card is received in payroll without your signature, you will be ineligible to receive a token for that week. **NOTE: It is your responsibility to sign your time card, not the superintendent, foreman or secretary.**

- d. The tokens will be redeemable at local building centers, hardware and sporting good stores determined by the company.
- e. Employees, who may be short-term on the project, i.e. one to three weeks, may desire to sell or trade their tokens with co-workers.
- f. If a project completes twelve weeks of work without a recorded (reportable or non-reportable) accident a noon time lunch will be provided for Sletten Construction employees on that project.

PART B PROJECT SUPERINTENDENTS

1. As a Project Superintendent of Sletten Construction Company, you are the frontline defense to preventing accidents on the jobsite. Superintendents are responsible for employee safety training and task planning on the site.
2. The safety incentive is based on the individual performance of all Sletten Construction Company superintendents divided into two groups, North and South. Awards will be presented during the yearly meetings held in Montana in December and in Nevada in February.
3. Project Superintendents whose responsibility falls in a category of a project with man-hours worked for a year, and who has the lowest accident frequency ratings and finishes with the most amount of points as compared with other superintendents in the same category, will be presented a plaque and a nonetary check award.

Point System

1. Each superintendent will be given 500 points with points deducted for violations noted during safety inspections and failure to hold weekly safety meetings. **(Note: Project Superintendents who do not respond with corrective action taken to noted discrepancies or who do not submit weekly safety meetings will not be considered for end of year awards.)**

2. The point system will be enforced as follows:

Failure to conduct weekly safety meetings	Deduct 5 points/meeting
Failure to report near miss incidents	Deduct 25 points
Failure to complete accident reports within 5 days	Deduct 50 points
Every Non-Serious Safety Violation	Deduct 25 points
Every Serious Safety Violation	Deduct 50 points
Every REPEAT Non-Serious Safety Violation	Deduct 100 points
Every Repeat Serious Safety Violation	Deduct 125 points

3. The following formula will be used:

$$\frac{\text{Number of Violation Points}}{\text{Number of Safety Inspections}} = \text{Points to be Deducted}$$

4. To be eligible for this phase a superintendent must be in charge of an on-going project(s) for **at least six months** out of the safety year. (December 1 – November 30th).

5. Monetary Awards for man-hour category is:

A. Category 20,000 + man-hours	\$2,500.00
B. Category 10,000 to 20,000 man-hours worked	\$2,000.00
C. Category 5,000 to 10,000 man-hours worked	\$1,500.00
D. Category 5,000 or less man-hours worked	\$1,000.00

A program has also been established to recognize one company division for their efforts in safety for the year. It is through the performance of our hourly employees and superintendents that determinates who is the top division at the end of the year. The winning division will be presented the Fred Dahlman Division Safety Award and a plaque as a means of recognizing their achievement.

Sletten Companies

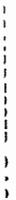
Safety Related Programs, Plans and Documentation

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1/1/2014



AIR COMPRESSORS AND THE USE OF COMPRESSED AIR

PURPOSE

To provide established minimum requirements for safely inspecting and operating air compressors and using compressed air.

REQUIREMENTS

1.0 Equipment Inspection

A qualified inspector shall inspect all air compressors before initial use and the user shall inspect the compressor before each use.

1.1 Operation of Equipment

1. Air compressors shall not be modified without prior written authorization from the manufacturer.
2. Couplings shall be checked daily before use. Use only couplings designed for compressed air services. All hose couplings shall be provided with a positive locking device.
3. Hoses shall be checked daily before use. When using compressed air, use only hoses designed for compressed air service. When using compressed air hoses, take precautions that include the following:
 - a. All hoses shall be checked for cuts, breaks, and loose connections before assembling the system.
 - b. Hoses shall not be crimped, coupled, or uncoupled while pressurized.
 - c. Unless the equipment has quick-change connectors (with internal check valves), air shall be shut off at the air supply valve ahead of the hose before breaking the connection.
 - d. When possible, airlines and hoses shall be routed through areas with little or no vehicular or pedestrian traffic. Air hoses shall not be laid across roadways unless they are protected from traffic.
 - e. All hoses exceeding 1/2 inch inside diameter shall have a safety device (an excess flow valve) at the source of supply or branch line to reduce pressure in case of hose failure. All air hose connections over 1 inch in diameter shall be equipped with safety chains or an equivalent restraint that is secured when the connection is made.
 - f. Hoses equipped with special connections require special tightening techniques or equipment. One example is hammer union connection, which shall be tightened with a hammer. Another example is spanner wrench connections, which shall be tightened with a spanner wrench. Do not tighten these or similar connections by hand.
 - g. Hose connections shall be secured before turning on air valves.
 - h. Air hoses shall not be directed at personnel nor used to clean themselves or other individuals.

AIR COMPRESSORS AND THE USE OF COMPRESSED AIR

Page 2 of 2

- i. Air hose connections that are designed to accept a pin shall be securely pinned in the holes provided to prevent disconnection.
- j. When hanging an air hose in the vertical position, hose connections shall be supported above and below the connections to prevent the weight of the hose from pulling the connection apart or pulling the connection out of the hose.
4. Compressed air for cleaning shall not exceed 30 psi. except for cleaning concrete forms. Use monogoggles or a face shield over the safety glasses when cleaning with compressed air. Compressed air shall not be used to clean harmful dust or fibers that could be dispersed such as lead or asbestos.
5. Each compressor shall be equipped with a properly sized relief valve maintained according to local, state, and federal regulations.
6. Hearing protection shall be provided and worn if the air compressor and/or the compressed air create a noise level over 90 decibels.
7. Air compressors shall be shut off and a fire extinguisher shall be accessible during refueling.

REFERENCES

Title 29 CFR 1926.306 – Air Receivers

COMPRESSED GAS
CYLINDERS

COMPRESSED GAS CYLINDERS

Page 1 of 2

PURPOSE

To establish minimum requirements and safe practices for identifying, handling, and storing compressed gas cylinders on Sletten sites.

REQUIREMENTS

1.0 GENERAL REQUIREMENTS

1. Employees shall be trained in the proper use, handling and storage of compressed gas cylinders.
2. Identification - Compressed gas cylinders shall not be accepted from the distributor or supplier unless the cylinder is free from defects clearly identified with a visible and proper manufacturer's label.
3. Site management shall periodically inspect both vendor-supplied and site-owned cylinders. The condition of the cylinders and Department of Transportation (or other regulating authority) required testing shall be verified.
4. Tagging – Defective cylinders shall be tagged and identified as defective and shall be segregated from other cylinders. Project management shall establish a policy for exchanging or disposing of defective cylinders.
5. Handling – Cylinders shall be moved or stored in the upright position. Racks or cradles shall be used to prevent them from tipping, falling, or dropping. Enclosed cages or carrying cradles shall be used to lift cylinders from one level to another. Rope or chain slings shall not be used. When transporting cylinders on trucks or trailers, cylinders shall be stored and secured upright in a cage or cradle.
6. The valves on compressed gas cylinders shall always remain closed unless the cylinder is in use.
7. Valve protection caps, where the cylinder is designed to accept a cap, shall always be in place and hand tight, except when cylinders are in use or connected for use.

1.1 Storage and Use

1. Policies and Practices – Compressed gas cylinders shall be stored and used in the upright position. Cylinders shall be secured with a noncombustible material to provide maximum stability and prevent them from falling. Cylinders shall not be secured by their valves or collars.
2. Segregate cylinders by the type and amount of their contents. Full and empty cylinders should be stored separately. Cylinders of oxygen or other oxidizing gases shall be stored separate from fuel-gas cylinders and other flammable materials by a minimum of 20 feet (6 meters), unless a suitable, ½-hour rated, flame-resistant partition is provided.
3. Cylinders shall be kept away from radiators and other sources of heat. Smoking, spark-producing work and open flame are not permitted within 20 feet (6 meters) of any cylinder storage area containing cylinders of flammable gas. Signs shall be posted prohibiting these activities in cylinder storage areas.

COMPRESSED GAS CYLINDERS

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4. Cylinders shall not be placed where they can become part of an electrical circuit.
5. Because projects may differ in allowing storage and use of compressed gas cylinders in operating or work areas, a policy shall be established before cylinders are stored inside buildings. Cylinders stored inside buildings shall be stored in a well-ventilated and protected location. Cylinders shall not be kept in unventilated enclosures such as lockers, gang boxes or cupboards.
6. The bulk storage facility shall be a minimum of 20 feet (15 meters) from adjacent buildings.
7. While in use, cylinders shall be placed or shielded to prevent contact with hot sparks or slag.

REFERENCES

Title 29 CFR 1926.350

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APPROVAL

EHS DIRECTOR

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REVISION HISTORY

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00	JULY 15, 2015	Original Draft	Chad Corey
01	July 17, 2014	Peer Review	Chad Corey
02	July 20, 2015	Sent to Tom M. for review	Chad Corey
03	July 22, 2015	Tom M. comment update	Chad Corey
04	July 30, 2015	Updated monitoring ranges to 19.5 to 23.5 throughout the document. Changed section 3.0 from PM to Super Changed section 5.5 to remove 6 month requirement and align solely with manufacturers recommendations Reworded section 7.0 to "reasonable response time"	Chad Corey

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1.0 SCOPE

This safe work instruction is applicable to all Confined Space Entries, during construction work, on Sletten Project Sites. It defines the requirements associated with work in Confined Spaces. This document must be read in conjunction with the Sletten Site Specific Safety Plan and/or Client HASP as applicable.

2.0 DEFINITIONS

2.1 Acceptable Entry Conditions

The conditions that must exist in a permit space, before an employee may enter that space, to ensure that employees can safely enter into, and safely work within, the space

2.2 Competent Person

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

2.3 Confined Space

A **Confined Space** means a space that:

1. Is large enough and so configured that an employee can bodily enter it;
2. Has limited or restricted means for entry and exit; and
3. Is not designed for continuous employee occupancy

Confined Spaces may include but are not limited to:

- Storage tanks, tank cars, process vessels, boilers, large ventilation ducts, silos and other tank-like compartments that usually have only a manhole or similar opening for entry purposes;
- Open topped spaces such as tanks, pits, ditches and degreasers, also large mobile waste containers;
- Pipes sewers, drains, tunnels, shafts, ducts and similar structures; and
- Ceiling space.

A confined space is determined by the hazards associated with a set of defined circumstances (restricted entry or exit, hazardous atmospheres or risk of engulfment) and not just work performed in a physically restrictive location. The presence of physical or chemical agents acting alone or in combination may be exacerbated in a confined space

2.4 Confined Space Entry Permit

This document contains all relevant information relating to a particular Confined Space and task, it includes details of the date and purpose of entry, hazards, isolation, safety procedures and special work instructions.

Risk assessment shall be part of the Entry Permit. A Confined Space Entry Permit must be available prior to entry of a particular confined space and must be approved by the Confined Space Entry Supervisor. The approved Entry Permits must be filed in the Project office file for Confined Space Entry. (Appendix B details the content list for the preparation of Confined Space Entry Permits).

Cancelled permits will be retained for 1 year from the date of cancellation.

2.5 Confined Space Entry Attendant

Attendant means an individual stationed outside one or more permit spaces who assesses the status of authorized entrants and who must perform specific duties outlined in this procedure.

2.6 Confined Space Authorized Entrant

A person who has been duly trained and has the knowledge of and practical experience in Confined Space Entry procedures. As a direct result, he has been authorized by the Entry Supervisor to enter and perform work in the confined space.

2.7 Controlling Contractor

The contractor who has overall responsibility for construction at the worksite.

2.8 Entry

Entry means the action by which any part of 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 into the space, whether or not such action is intentional or any work activities are actually performed in the space.

2.10 Entry Employer

The employer who decides that an employee it directs will enter a permit space.

2.9 Entry Hazards

There are hazards involved in inspecting, testing, cleaning, repairing or entering Confined Spaces. Some are listed below. The Confined Space Entry Permit will include specific hazards identified for the particular confined space and task.

- Asphyxiation or suffocation
- Burning or scalding
- Electric shock
- Fire
- Moving machinery
- Radiation
- Engulfment
- Drowning
- Explosion
- Falls
- Poisoning
- Heat or Cold Extremes

2.10 Entry Supervisor

The entry supervisor means the qualified person (such as the employer, foreman, or crew chief) 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 by this standard.

Note. An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this standard for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation if that person is authorized and trained as an entry supervisor. .

2.11 Hazardous Atmosphere

Hazardous atmosphere means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

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

Note: This concentration may be approximated as a condition in which the combustible dust obscures vision at a distance of 5 feet (1.52 meters) or less.

- (3) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
- (4) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart D—Occupational Health and Environmental Control, or in Subpart Z—Toxic and Hazardous Substances, of this part and which could result in employee exposure in excess of its dose or permissible exposure limit;

Note. An atmospheric concentration of any substance that is not capable of causing death, incapacitation, and impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this definition.

(5) Any other atmospheric condition that is immediately dangerous to life or health.

Note. For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Safety Data Sheets that comply with the Hazard Communication Standard, §1926.59 of this part, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

2.12 Permit required confined space

A **Permit-required confined space** (permit space) means a confined space that has one or more of the following characteristics:

- (1) Contains or has a potential to contain a hazardous atmosphere;
- (2) Contains a material that has the potential for engulfing an entrant;
- (3) 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; or
- (4) Contains any other recognized serious safety or health hazard.

3.0 RESPONSIBILITIES

3.1 Project Superintendent

The Project Manager where the Confined Space is located shall have the overall responsibility and duty to ensure all necessary steps are taken prior to authorizing a confined space entry. Specifically, that person shall:

1. Designate confined space entry supervisors;
2. Ensure a Confined Space Entry Register and Confined Space Entry Permits are maintained;
3. Ensure all Confined Space are identified and labeled;
4. Ensure Training required under this instruction is performed prior to working in a confined space;
5. Allocate the proper human, technical, and logistical resources to ensure a safe entry;

3.2 Confined Space Entry Supervisor

The Confined Space Entry Supervisor shall have the responsibility and duty to ensure all necessary steps are taken prior to authorizing a confined space entry. Specifically, that person shall:

1. Be familiar and understand the hazards faced during entry including modes, signs or symptoms and consequences of exposure;

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2. Verify, by checking the appropriate entries have been made on the permit, that all test specified by the permit have been conducted and all procedures and equipment specified are in place BEFORE endorsing the permit and authorizing entry
3. Terminate or cancel the permit when:
 - a. Entry operations covered by the entry permit have been completed; or
 - b. Suspend or cancel the entry permit and fully reassess the space before allowing reentry when a condition that is not allowed under the entry permit arises in or near the permit space and that condition is temporary in nature and does not change the configuration of the space or create any new hazards within it; and
 - c. Cancel the entry permit when a condition that is not allowed under the entry permit arises in or near the permit space and that condition is not covered by the entry permit.
4. Verifies that entry or rescue services are available and that means for summoning them are operable.
5. Ensures that the employer is notified as soon as services become inoperable or unavailable
6. Removes unauthorized individuals who enter or attempt to enter the permit space
7. Determines that entry operations remain consistent with terms of the entry permit
8. Other duties as assigned or required:

3.3 Confined Space Entrants

Each person conducting entry into a confined space must have the knowledge and ability to safely execute the following duties:

1. Be familiar and understand the hazards faced during entry including modes, signs or symptoms and consequences of exposure
2. Properly use required entry equipment as stated in the Permit:
3. Communicate with the attendant as necessary and maintain such communication to ensure the safety of all personnel
4. Alert the attendant when there is a warning sign or symptom of exposure, a dangerous situation, or a condition arises that is not permitted under the permit conditions.
5. Exit from the space as quickly as possible when an order to evacuate is given, there is any warning sign or symptom of exposure or dangerous condition, when an Entrant detects a prohibited condition, or when an evacuation alarm is sounded
6. Other duties as assigned or required:

3.4 Confined Space Attendant

At Sletten, each confined space attendant must have the knowledge and ability to safely execute the following duties:

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1. Is familiar with and understand the hazards faced during entry Including modes, signs or symptoms and consequences of exposure;
2. Is aware of possible behavioral effects of hazard exposure in authorized entrants;
3. Continuously maintains an accurate count and identification of authorized entrants in the space
4. Remains outside the space until relieved-
 - a. One attendant may act as rescue if properly relieved and trained in rescue operation
5. Communicates with authorized entrants as necessary to alert entrants of the need to evacuate
6. Assesses activities inside and outside the space to determine the safety of entrants or the need to evacuate if any of the following conditions exist:
 - a. There is a prohibited condition
 - b. If entrants exhibit behavioral effects of exposure
 - c. A situation exists outside the space that could endanger the entrants
 - d. The attendant cannot effectively and safely perform all duties required of an attendant
7. Summons rescue and other emergency services as soon as the attendant determines that the entrants may need assistance to escape
8. Takes the following actions when unauthorized persons approach or enter a permit space while entry is underway
 - a. Warns the unauthorized persons to stay away from the permit space
 - b. Advises unauthorized persons to exit immediately if they have entered a permit space
 - c. Informs authorized entrants and entry supervisor if unauthorized persons have entered the space
9. Performs non-entry rescue as specified by the rescue procedure
10. Performs NO DUTY that might interfere with their primary duty to asses and protect the authorized entrants

3.5 Contractors

Where applicable, contractors shall adhere to this policy unless another policy has more controls in place to mitigate the hazards of confined space entry.

1. Where and when required, Contractors shall ensure the training of their employees and subcontractors prior to requesting a confined space permit; and
2. All personnel / Contractors so required to work within Confined Space shall ensure that all proper regulatory and client requirements are met before entering a confined space.

4.0 REQUIREMENTS

4.1 General Requirements and Evaluation

Before beginning work, a competent person for Sletten will evaluate the work area and identify any permit and non-permit required confined space in which our employees may work.

Sletten shall also obtain from the host employer/contractor and controlling employer/contractor a list of all confined spaces on the property and the hazards associated with those spaces.

If any permit required confined spaces are present, those spaces shall be barricaded to prevent unauthorized entry and identified through the use of signs, tags, labels or equivalent methods.

Additionally, Sletten will communicate to employees the location, hazards, and nature of these confined spaces through the use of tool box talks, safety meetings, bulletin boards, maps, diagrams or other effective means.

A written confined space program will be developed following the requirement of this work instruction and applicable state and federal regulations if any employee will be performing work inside a confined space.

All monitoring, testing, and documents required to be prepared or maintained under this standard shall be available to affected employees or their authorized representative to review prior to performing work inside the confined space.

4.2 Training

Sletten will provide training to each employee who has responsibilities under this work instruction. The training will be designed to ensure the employee gains the understanding, knowledge and skills necessary for the safe performance of the duties they are assigned.

Additionally, employees will be trained on the hazards of permit required confined spaces and the methods used to mitigate or control these hazards in order to effectively protect our employees.

Finally, for employees who are not authorized to perform entry rescues, the dangers of attempting such rescues will be included.

Training will be done as follows:

- (1) To ensure that the employee can understand both the content and context;
- (2) Before the employee is first assigned to confined space duties;
- (3) Before there is a change in assigned duties;
- (4) Whenever there is a change in permit space entry operations that presents a hazard about which the employee has not previously been trained; and
- (5) Whenever there is any evidence of a deviation from the permit space entry procedures or there are inadequacies in the employee's knowledge or use of these procedures.

The training must establish employee proficiency in the duties required by this standard and must introduce new or revised procedures, as necessary, for compliance with this standard.

Sletten will maintain training records to show that the training required by paragraphs of this standard has been accomplished. The training records will contain each employee's name, the name of the trainers, and the dates of training and will be available for inspection by employees and their authorized representatives, for the period of time the employee is employed by that employer.

4.3 Re-Classification of Permit Required Confined Space

Sletten may reclassify a permit-required confined space as a non-permit confined space when a competent person determines that all of the following requirements have been met:

1. The permit space poses no actual or potential atmospheric hazards; and
2. All hazards within the space are eliminated or isolated without entry into the space (unless infeasible to do so);

The permit space will only remain reclassified as a non-permit confined space for as long as the non-atmospheric hazards remain eliminated or isolated;

If entry into the space is necessary to eliminate or isolate hazards, the entry will be done under permit space procedures.

If testing and inspection during that entry demonstrate that the hazards within the permit space have been eliminated or isolated, the permit space may be reclassified as a non-permit confined space for as long as the hazards remain eliminated or isolated;

NOTE: OSHA states that "Control of atmospheric hazards through forced air ventilation does not constitute elimination or isolation of the hazards."

When forced air ventilation alone will control all hazards in the space, the space may be entered under the Alternate Entry Procedures in Section 4.6.

Sletten will document the basis for determining that all hazards in a permit space have been eliminated or isolated, through a certification that contains the date, the location of the space, and the signature of the person making the determination. The certification will be maintained in the project office and made available to each employee entering the space or to that employee's authorized representative;

If hazards arise within a permit space that has been reclassified as a non-permit space under this procedure, each employee in the space must exit the space. Sletten will then reclassify the space as a permit space and determine the cause of the hazard(s). Such hazards will be reevaluated and controls implemented to ensure the space can be safely entered.

The space may only be reclassified to a non-permit space following an evacuation by the Project Manager and Safety Manager.

4.4 Confined Space Entry Register

A register of all confined spaces on site will be maintained and kept in file reference at the Project Safety Office as applicable.

5.0 Alternate Entry

5.1 Conditions

Sletten may elect to evaluate the conditions in a confined space to determine if alternate entry procedures may be used. The following conditions will be evaluated and in place before entry is made using alternate entry procedures in 5.2

1. All physical hazards in the space will be eliminated or isolated through engineering controls so that the only hazard posed by the permit space is an actual or potential hazardous atmosphere;
2. Continuous forced air ventilation alone is sufficient to maintain that permit space safe for entry, and that, in the event the ventilation system stops working, entrants can exit the space safely;
3. Initial entry of the permit space to perform monitoring or inspection will be performed using Permit Space Procedures;
4. The determinations, monitoring, and supporting data are made available to each employee who enters the permit space or to that employee's authorized representative; and
5. Entry into the permit space under the terms of section 5.1 is performed in accordance with the requirements of section 5.2, Alternate Entry Procedure.

5.2 Procedure

If the conditions in section 5.1 are met, Sletten may elect to use alternate entry procedures as permitted. The following conditions will be met and in place when alternate entry is performed by Sletten employees:

1. Any conditions making it unsafe to remove an entrance cover will be eliminated before the cover is removed.
2. When entrance covers are removed, the opening will be immediately guarded by a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the opening and that will protect each employee working in the space from foreign objects entering the space.
3. Before any employee enters the space, the internal atmosphere must be tested, with a calibrated direct-reading instrument, for oxygen content, for flammable gases and vapors, and for potential toxic air contaminants, in that order.
 - a. Sletten will provide to any employee who enters the space, or that employee's authorized representative, an opportunity to observe the pre-entry testing performed.
4. No hazardous atmosphere is permitted within the space whenever any employee is inside the space.
5. Continuous forced air ventilation must be used, as follows:
 - a. No person may enter the space until the forced air ventilation has eliminated any hazardous atmosphere;

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- b. The forced air ventilation must be so directed as to ventilate the immediate areas where a person is or will be present within the space and must continue until all persons have left the space;
 - c. The air supply for the forced air ventilation must be from a clean source and must not increase the hazards in the space.
 6. The atmosphere within the space shall be continuously monitored unless the Sletten Entry Supervisor can demonstrate that equipment for continuous monitoring is not commercially available or periodic monitoring alone is sufficient.
 7. When continuous monitoring is used, the monitoring equipment shall have an alarm that will notify all entrants if a specified atmospheric threshold is achieved, or an employee will check the monitor with sufficient frequency to ensure that entrants have adequate time to escape.
 8. If continuous monitoring is not used, periodic monitoring is required. All monitoring must ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.
 - a. Any person who enters the space, or that employee's authorized representative, must be provided with an opportunity to observe the testing required by this paragraph.
 9. If a hazard is detected during entry:
 - a. Each employee will evacuate space immediately;
 - b. The space must be evaluated to determine how the hazard developed; and
 - c. Sletten shall implement measures to protect its personnel from the hazard before any subsequent entry takes place.
 10. Sletten will ensure a safe method of entering and exiting the space is provided or established.
 11. Sletten shall verify that the space is safe for entry and that the required pre-entry measures have been taken.
 - a. This verification shall be completed through a written certification that contains the date, the location of the space, and the signature of the person providing the certification.
 12. The certification shall be made before entry and must be made available to each employee entering the space or to that employee's authorized representative.

6.0 PERMIT REQUIRED CONFINED SPACES

6.1 Communication and Coordination

Before any work can commence, a Confined Space Entry Permit shall be prepared and a safety briefing held to review the scope of the space entry.

All documentation, testing results, Safety Data Sheets, permits and ancillary paperwork shall be available for review by all team members prior to entering the space.

Only after all permit conditions are met shall the entry Supervisor sign the permit and authorize entry into the space.

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6.2 Preparation of Entry

At a minimum, the following general steps shall be taken prior to entry into any confined space:

- Isolation;
- Decontamination, if required;
- Cleaning and purging;
- Atmosphere tested as safe;
- Provision of personal protective equipment;
- Certification by way of a Confined Space Entry Permit;
- Permit to Work issued;
- Instruct members of team including entry, attendant, monitoring, supervisory, and rescue team members; and
- Means of access/egress and means of rescue.

Specific steps are detailed in Appendix B, C, and D.

6.3 Isolation Requirements

Authorized Persons shall make all the appropriate isolations (as defined in the Confined Space Entry Permit) and place his/her "Danger Tags" which shall include the Confined Space Entry Permit number.

The Confined Space Authorized Person shall confirm all isolations and countersign each "Do Not Operate" Tags and the isolation sheets.

All confined space entrants must place their personal Danger Tags at all isolation points or follow group LOTO procedures.

For entry into a confined space, it is **mandatory** that process streams be positively isolated by either breaking of lines, i.e. removal of a valve, spool piece or expansion joint and fitting a blank or deflector plate to the open end of the line or inserting of spades (slip plates) in piping between the flanges nearest to the confined space.

For electrical isolations, both a process lock/tag and a personal lock/tag by each person entering the confined space must be applied to the isolator.

6.4 Cleaning and Purging

Refer to the relevant Confined Space Entry Permit for details.

6.5 Safety and Atmosphere

Testing of the atmosphere of a Confined Space shall be carried out as near as practicable to time of entry and be repeated as circumstances dictate throughout the entry and before cancellation of the Confined Space Entry Permit governing the entry. The Authorized Person/Tester shall ensure that the sampling/testing is performed on a continuous nature and carried out in a safe manner. Test equipment used in Confined Spaces shall be maintained in good order and calibrated at regular intervals in accordance with manufacturer's specifications.

All maintenance, servicing and calibration records shall be kept on file and available for review.

If continuous monitoring is not feasible, periodic monitoring shall be done and a schedule developed to ensure the safety of entry personnel. The monitoring schedule shall be included in the JHA and Confined Space permit.

Testing shall be performed in the following order: 1) Oxygen, 2) Flammable Vapors or LEL, and 3) Toxicity

Persons shall not enter the Confined Space, unless testing has proved that:

- The atmosphere is not explosive, with flammable levels less than 10% of the lower explosive limit (LEL).
- The concentration of toxic materials is less than the occupational exposure standards specified by OSHA or governing regulatory agency. In the absence of regulation, exposure recommendations for TLV's and BEIs by the ACGIH should be reviewed for use.
- The external atmosphere is safe from toxic materials.
- There is compliance with hygiene standards imposed by codes of practice on specific materials, where applicable.
- The atmosphere is in the range 19.5 to 23.5% oxygen (v/v). The oxygen content of the air both inside and outside the space should be measured. The outside reading provides an additional check on instrument response and should be in the range 19.5 – 23.5% oxygen (v/v).
- Any differential between outside and inside air should serve as a warning that other, unsuspected contaminants may be present and steps should be taken to identify them and counter their presence as part of entry preparation. The differential between outside and inside oxygen concentrations shall not be used as a measure of the level of suspected contaminants. This must be identified and measured independently.
- There are no hazards from temperature.
- Re-testing of the confined space will occur at the beginning of each shift. In cases where there is the possibility of a release of toxic or flammable gases/vapors, e.g. Removal of scale or polymer build up or cleaning with solvents or coating of surfaces, it may be necessary to monitor the atmosphere continuously.
- This can be achieved by the wearing of a personal monitor by all persons entering the space or the provision of a fixed monitoring device. In the event of any significant interruption to the work under these circumstances, the atmosphere shall be re-tested before re-entry.

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- In the event of a toxic gas alarm or any other emergency stopping the work being carried out the recipients shall discuss the conditions with the Authorized Person before recommencing work.

6.6 Personal Protective Equipment

PPE requirements shall be specified in the JHA and approved by the Safety Manager prior to entry.

Safety harness and lifeline shall be worn where:

- There is a hazard of falling during ascent or descent, or of falling from the working level; and
- Rescue arrangements would necessitate lifting by a safety line.

6.7 Portable Electrical Equipment

The portable electrical equipment should:

- Be connected, individually or collectively, to an earth-free, extra-low voltage supply from an isolating transformer(s) with the transformer(s) being located outside the confined space;
- Be protected through a residual current device or GFCI, with the device being located outside the confined space;
- Supply cable: Additionally, the equipment should be fitted with a flexible supply cable not inferior to a heavy-duty type. The cables should be located, suspended or guarded to minimize accidental damage;
- Double-insulated tools: Where available, it is recommended that double-insulated electrical tools be used;

7.0 ENTERING A CONFINED SPACES

Confined Space entry shall be expressly **FORBIDDEN**:

- If the confined space atmosphere is equal to or greater than 10% LEL;
- If the confined space atmosphere is toxic (above occupational exposure standards) or deficient in oxygen (outside the range 19.5 – 23.5% oxygen) at the time of entry to the vessel;
- If the atmosphere or equipment is excessively hot or cold;
- Unless there is a fully briefed attendant, with clear guidelines, at the space while there is any person inside the space;

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- Unless there is someone within reasonable response time and contactable who is proficient in cardio-pulmonary resuscitation (CPR) and who is aware that there is a confined space entry under way;
- Unless the person has signed the Confined Space Entry Permit, or
- Unless an Authorized Person has issued a Confined Space Entry permit whose level of authority includes such issue?

7.1 Unauthorized Entry into Confined Spaces

- Where there is a perceived risk of an unattended Confined Space being entered by unauthorized persons, suitable warning and/or deterrent measures shall be instituted (e.g. Signs, ropes, etc.); and
- Notices shall be placed at entrances to each Confined Space, stating that Confined Space Entry Permit must be obtained before entry.

7.2 Entry Without Breathing Equipment

Entry without breathing protection is permitted only when:

- The necessary steps in accordance with section 6.5, Safety and Atmosphere, of this procedure have been carried out;
- The task for which the space is being entered will not produce an oxygen deficient or toxic atmosphere in the space; and
- Continuous ventilation with fresh air is assured.

7.3 Entry of Spaces Containing Solids

Such entries, e.g. into silos, should be discouraged. Where such entries are unavoidable, safety line and harness shall be worn and, where applicable, staging or chair suspended from the top of the space shall be used as the working platform.

7.4 Hot Work in Confined Spaces

If hot work is to be performed in a confined space, the following shall be obtained prior to working:

- A separate Hot Work Permit is needed; and
- A separate Hazard Analysis shall be performed and a separate JHA shall be developed.

7.5 Period of Validity

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Permits should normally only be issued for the duration of the shift it pertains too. When work will extend over multiple shifts, the Entry Supervisor shall review the scope of work with the oncoming crew, review permit conditions and safeguards, and obtain a new permit if needed.

The maximum period shall be 24 hours for unusual circumstances only.

7.6 Rescue and First Aid

Should the need for rescue of people from a Confined Space arise, the following shall apply:

- The first duty of the Attendant Person is to quickly summon rescue and first aid help in the event of problems affecting persons in the Confined Space;
- The Attendant Person shall not enter the space before help has arrived and proper precautions have been taken. To do otherwise is to create a very real risk of increasing the number of victims/fatalities;
- Unless the danger is clearly greater if the injured/distressed person(s) are left where they are, they should not be moved until sufficient experienced and trained people and appropriate equipment are at the scene to enable the safest possible evacuation;
- To enable a rescue to be carried out, it may be necessary to install a portable frame with lifting equipment above any vertical opening. Regular rescue drills shall be carried out as part of the training of persons who need to work in confined spaces; and
- Rescue Equipment shall be listed in the Confined Space Entry Permit.

8.0 CLOSURE OF CLOSED SPACES

Before a Confined Space is finally closed up after entry, the Confined Space Authorized Person responsible shall personally check that no person remains inside and that all equipment and materials relating to work done have been removed.

Each space shall be rendered safe, barricaded and labeled after closure in accordance with this procedure to make safe for project personnel.

8.1 Debrief after Entry

Sletten shall ensure the controlling contractor holds a debrief with each entity that was part for the permit space procedure.

The purpose of the debrief is to review the permit space program and identify any areas that need improvement, any hazards confronted or created in the permit space(s) during entry operations, and explore ways to improve the permit space procedure.

Additionally, the entry contractor shall inform the controlling contractor in a timely manner of the permit space program followed and of any hazards confronted or created in the permit space(s) during entry operations; and

The controlling contractor must apprise the host employer of the information exchanged with the entry entities under this section.

9.0 PROCEDURE REVIEW

9.1 Annual Review

At least every 12 months, Sletten shall review this instruction to ensure employees are protected from permit space hazards. This review shall incorporate cancelled permits that were conducted during the previous 12 months.

If corrections, updates or changes are identified during this review, those items shall be reviewed by the EHS Director for incorporation into this instruction.

If no permits have been issued during the past 12 months, no review will be necessary.

9.2 Operational Review

Entry operations will be reviewed when this instruction has failed to identify one or more hazards to its employees for a permit space entry.

Examples of these items may include: any unauthorized entry of a permit space, the detection of a permit space hazard not covered by the permit, the detection of a condition prohibited by the permit, the occurrence of an injury or near-miss during entry, a change in the use or configuration of a permit space, and employee complaints about the effectiveness of the program.

APPENDIX A: ATTENDANT PERSON'S DUTIES QUICK CARD

Above all else, a Confined Space Entry Attendant Person is assigned for the protection of people within the confined space. Should a person be injured, collapse or display abnormal behavior inside the space, your immediate duty is to summon help, DO NOT enter the space and risk you own well being and that of others.

Before the Work Begins:

- Discuss the job with the person assigning you to Attendant duties and collect a copy of the completed Permit.

Ensure you are clear about:

- The confined space to be entered and the work to be done;
- The potential hazards that exist;
- The precautions to be observed;
- Personally read and understand the Confined Space Entry Permit and any other permits associated with the job;
- Make yourself known to the person(s) authorized to enter the Confined Space; and
- If required on the Confined Space Entry Permit, establish radio contact with the Project Site Office or other nominated person/location. Contact the Project Office or other nominated person/location stating clearly who you are, the serial number of the Confined Space Entry Permit, and who is about to enter the Confined Space.

During the Work be aware that:

- You are authorized to instruct people to leave the Confined Space at any time;
- You, or your authorized relief, must be in attendance whenever anyone is inside the Confined Space. If this is not possible, the Confined Space must be vacated;
- You need to maintain maximum contact with person(s) in the space. Visual contact is obviously preferred but is not always possible. In this event, maintain contact by verbal means, listen for sounds from the space, or have an arranged signalling method using a lifeline or other lines or hoses (but not air supply hoses);
- You need to ensure there are no emissions in the near vicinity of the confined space e.g. Vehicles, diesel powered welders, etc; and
- Wind direction changes may bring new hazards.

Completion of Work:

- Ensure the confined space is clear and any welding leads or gas-cutting gear has been removed;
- Ensure those who were in the Confined Space sign off the Confined Space Entry Permit; and
- Advise the confined space Entry Supervisor that the above activities have been completed.

APPENDIX B: CONFINED SPACE ENTRY PERMIT PROCESS

Before entry will be authorized, each entry employer must document the completion of measures required by this instruction by preparing a Confined Space Entry Permit (see Appendix D).

Below is a list of items that should be considered when the Confined Space Entry Permit is prepared for each particular confined space and task and should look to include the following information:

- Confined space description
- Location or Space Number
- Drawing No.
- Reference documents
- Hazardous area classification
- Scope – description
- Potential hazards/contamination – specify
- Alternative way of doing job
- Preferred way of doing job
- Preparation – description
- Purging/decontamination – description
- Isolation – specify, use standard isolation sheet
- Atmosphere testing – specify
- Personal Protective Equipment – specify
- Additional precautions – specify
- How to enter – description
- First Aid and Rescue – specify
- Checks on job completion – specify
- General comments – description

Below is a checklist to assist in hazard identification and the compilation of the Confined Space Entry Permit.

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- Preparation – Description
- Purging/decontamination – description
- Isolation – specify, use standard isolation sheet
- Atmosphere testing – specify
- Personal Protective Equipment – specify
- Additional precautions – specify
- How to enter – description
- First Aid and Rescue – specify
- Checks on job completion – specify
- General comments – description

Other spaces within:

- 15 Feet
- 30 Feet

Machinery that may suddenly start:

- Conveyors
- Motors
- Pumps
- Others

Inbuilt fire control:

- Inert gas
- Power
- Water
- Other

Hazards outside space:

- Walkways; passing pedestrians
- Driveways – forklifts; trucks

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- Ladder access
- Platforms
- Overhead cranes
- Moving equipment nearby
- Electrical power (pathway)

Proximity of other/equipment that may generate and/or release exhaust fumes, gases etc. that may enter the space. In the space can we expect to find any of the following Chemical Contents:

- Acids
- Alkalis
- Additives
- Toxic vapors (e.g. Pest control)
- Rust (Oxygen deficiency)
- Combustibles:
- Hydrocarbons (gas & vapors)
- Dust
- Decomposition (methane)

Sparks and flammables via:

- Open man ways
- Broken lines
- Grinding/welding

Sludge and scale Vapor generated from:

- Disturbed sediment
- Hot work igniting deposits
- Dust generation
- Will other chemicals be introduced to the space for other purposes e.g. cleaning; painting; stripping; neutralizing etc? Are Material Entry Permits available?
- Atmosphere

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- Oxygen Deficiency
- Oxygen Enrichment
- Toxic (PPM)
- Explosive
- Flammable
- LEL %
- Continual monitoring of the environment:

- Ventilation Required?
 - Any dead spots
 - Natural
 - Forced
 - Mechanical
 - Exhaust waste air to
 - Entry will be safe under the following conditions?
 - Natural ventilation
 - Mechanical ventilation
 - With supplied air/airline
 - With self – contained breathing apparatus
 - Without respiratory protection

- Uncontrolled Substances:
 - Steam
 - Water
 - Chemicals
 - Others

- Electrical Hazards
- Noise

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- Generated within the space or from outside of the confined space
- Manual Handling
 - Size of load
 - Posture
 - Small spaces
 - Room to move
- Temperature Extreme
 - Hot
 - Cold
- Lighting
 - Natural
 - Will be required
 - Nearest power supply (Local/Portable)
 - Emergency
 - Back up (Battery)
 - Voltage
 - Earth leakage protection
- Communication
 - Voice
 - Radio
 - Telephone
 - Line
 - Visual
- Personal Protective Equipment
 - Eye
 - Hearing

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- Foot
- Head
- Body
- Hand
- Respiratory
- Cartridge
- Air line
- Self contained
- Fall protection
- Safety harness
- Inertia reel
- Static line
- Safety line
- Other

- Hot work – any special conditions that may apply e.g. Hot Work Permit etc.

- Psychological

- Slips, Trips, & Falls

- Access into and within the space

- Isolation:-Identify problem areas

- Pipes
 - Ducts
 - Vents
 - Drains
 - Conveyor
 - Bleed back
 - Fire protection equipment

- Confirm that isolation can be achieved i.e. Remove valve; insert blank/spade; cap/plug pipe; etc. Identify de-energization requirements e.g.
 - Springs
 - Wheels

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- Hydraulic rams
- Pneumatics
- Belts
- Thermal
- Conveyors
- Mechanical
- Electrical:
- Removal fuses
- Lock out
- Tag out

Will you require Sign Posting / Barriers / Barricades?

APPENDIX C: PERMIT ISSUANCE, COMPLETION AND RETENTION

Before entry begins, the entry supervisor identified on the permit shall hold a safety briefing and review the acceptable conditions of the permit, communication plan, emergency provisions, and other aspects regarding the safe entry of the confined space.

Each entry person, attendant, entry supervisor, and affected contractor representative shall take part in this briefing to allow for exchange of information. All attendees will print their name and initial the safety meeting form upon completion.

Only after the safety meeting is held and all checks have been completed, the entry supervisor must sign the entry permit to authorize entry.

The completed permit must be made available at the time of entry to all authorized entrants or their authorized representatives, by posting it 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 or as outlined is in accordance with paragraph 6.4.

Upon completion of the entry and verifying that all personnel have been accounted for, the space shall be made safe by closing off the space and marking the space with signs, labels, or other standard warnings.

All isolations may be removed after a review by the entry supervisor or LOTO controller as appropriate.

The entry supervisor will ensure that all affected contractors are notified when the entry is complete and the space is secure.

The entry employer must retain each canceled entry permit for at least 1 year to facilitate the review of the permit-required confined space program. Any problems encountered during an entry operation must be noted on the pertinent permit so that appropriate revisions to the permit space program can be made.

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APPENDIX D: CONFINED SPACE PERMIT (FRONT VIEW)

CONTRACTOR:		PERMIT EXPIRATION TIME:			
CRAFT:		PERMIT EXPIRATION DATE:			
DESCRIPTION OF CONFINED SPACE:					
DESCRIPTION OF WORK TO BE PERFORMED:					
NATURE OF HAZARDS EXPECTED (check all that apply)		REQUIREMENTS FOR ENTRY AND WORK			
Oxygen deficiency		Respiratory Protection (specify)			
Flammable vapors or gasses		Protective clothing (specify)			
Oxygen enrichment		Lifeline and escape harness			
Toxic air contaminants		Tripod			
Corrosive materials		Fire extinguisher			
Engulfment		Lighting appropriate for conditions			
Mechanical equipment		Non-sparking tools			
Electrical shock		Continuous air monitoring for:			
Other (specify)		Continuous ventilation with fresh air			
Other (specify)		Other (specify)			
PREPARATIONS PRIOR TO ENTRY		AUTHORIZED ENTRANTS	AUTHORIZED ATTENDANTS		
Affected departments notified					
Tank drained or contents of space removed					
Space isolated					
Energy sources locked out					
Energy sources locked out					
Stored energy relieved (Zero Energy State)					
Hot work permit obtained					
Area around confined space secured					
Space atmosphere tested (recorded below)					
Space purged with fresh air			ENTRY SUPERVISORS		
Air monitoring equipment available/calibrated					
Employees briefed on hazards					
Communication with entrants established					
Rescue equipment available					
AIR TEST WITHIN CONFINED SPACE (Record periodic monitoring results on Appendix E, Monitoring Log)					
TEST	ACCEPTABLE	RESULTS	TEST	ACCEPTABLE	RESULTS
Oxygen	19.5 – 23.5%		SO2	2 ppm	
Flammables	Less than 10% LEL		Toxic (specify)	Less than PEL or TLV	
CO	35 ppm		Toxic (specify)	Less than PEL or TLV	
H2S	10 ppm		Toxic (specify)	Less than PEL or TLV	
Air Test Conducted by:			Title:		
Date:			Time:		
ENTRY AUTHORIZATION (to be completed by the entry supervisor) I certify by my signature that all necessary precautions have been taken and that the authorized entrants have been briefed specifically for this confined space entry.					
DATE:		TIME:		NAME: (print)	
TITLE:			SIGNATURE:		
NOTE ANY PROBLEMS ENCOUNTERED DURING ENTRY					

Confined Space Entry (Construction)

REVISION 04

ISSUE DATE 08-15-2015

**APPENDIX E: MONITORING LOG
ENTRANT LOG**

ENTRANT NAME	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT
	:	:	:	:	:	:

ATTENDANT AND SUPERVISOR LOG

ATTENDANTS NAME	ON DUTY	OFF DUTY	ENTRANT SUPERVISOR'S NAME	ON DUTY	OFF DUTY

AIR MONITORING LOG

AIR MONITORING TEST	ACCEPTABLE	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS
Oxygen	19.5 – 23.5%						
Flammables	Less than 10% LEL						
CO	35 ppm						
H2S	10 ppm						
Toxic (specify)	Less than PEL or TLV						
Toxic (specify)	Less than PEL or TLV						
Toxic (specify)	Less than PEL or TLV						
DATE:	TIME:	:	:	:	:	:	:
Initials of person conducting atmospheric tests:							

CONTROL OF HAZARDOUS ENERGY (Lockout/ Tagout)

PURPOSE

To provide established minimum requirements for the control of hazardous energy sources that could cause harm or injury if suddenly or unexpectedly released.

REQUIREMENTS

Employees shall not be allowed to work on energized systems without authorization from the Superintendent and consultation with the Site Safety Manager.

1.0 GENERAL REQUIREMENTS: LOCKOUT/TAGOUT

1. Hazard Assessment and Energy Control Procedure – A hazard assessment shall be conducted, and, if more than three lock-out devices or location points are involved to de-energize a piece of equipment, system, circuit or process, a specific Energy Control Procedure (ECP) shall be developed which identifies the hazardous energy sources and their approximate magnitude. In addition to energized and stored electrical energy, pressure, temperature, kinetic, chemical, radiation and other physical characteristics of hazardous energy, the NFPA hazard diamond, MSDS and manufacturers documentation can be used as a means of understanding communicating the magnitude of health, fire and reactivity hazards to workers. The ECP shall note the location of the energy isolation devices and the sequence in which isolation is to be performed.
2. Hazardous Energy – Hazardous energy is any energy that could cause harm or injury if it were suddenly, unexpectedly or inadvertently released. Several examples of potentially hazardous energies and their hazards are:
 - A. Electrical
 - a. Electrocution
 - b. Shock
 - c. Burns
 - B. Chemicals
 - a. Fire
 - b. Explosion
 - c. Chemical reaction
 - d. Displacement of oxygen
 - e. Inhalation hazards
 - f. Chemical burns
 - C. Mechanical
 - a. Pinching
 - b. Crushing
 - c. Entanglement
 - d. Amputation
 - D. Extreme heat & cold
 - a. Burns
 - b. Frostbite
 - E. Radiation
 - a. Ionizing
 - i. Cancer

CONTROL OF HAZARDOUS ENERGY (Lockout/ Tagout)

10. Locks and Tags – A combination of locks and/or tags can be used to control hazardous energy sources and secondary isolations. Locks and tags used for lock-out/tag-out shall be used only for lock-out/tag-out service at a facility.
11. Equipment not capable of being locked out – If a piece of equipment is manufactured or constructed in such a way that it is not physically possible to positively lock out hazardous energy sources, it is considered “not capable of being locked out”. A specific written plan shall be developed to address these situations.

1.1 Group Lock-out or Tag-out

When servicing and/or maintenance is performed by a crew, craft, department, or other group, they shall utilize a procedure which affords the employees a level of protection equivalent to that provided by the implementation of a personal lock-out or tag-out device.

Group lock-out or tag-out devices shall be used in accordance with the procedures required by this instruction governing individual procedures which shall include, but not necessarily limited to, the following specific requirements:

1. Primary responsibility will be vested in a single employee who is authorized by management, for a set number of employees working under the protection of a group lock-out or tag-out device.
2. Provision for the authorized employee to ascertain the exposure status of individual group members with regard to the lock-out or tag-out of the machine or equipment will be made.
3. When more than one crew, craft, department, etc. is involved, assignment of overall job-associated lock-out or tag-out control responsibility will be vested in a qualified employee designated to coordinate affected work forces and ensure continuity of protection.
4. Multiple Locking Device and Lock Box - Each authorized employee, or a qualified employee selected to represent a set number of employees shall affix a personal lock-out or tag-out device to the group lock-out device, group lock-box, or comparable mechanism when employees begin work, and shall remove those devices when employees stop working on the machine or equipment being serviced or maintained. This gives employees the same level of safety as if each had placed a personal lock or tag on each energy isolation device. NOTE: When group lock-out is used and a selected employee locks out for a set number of employees, each employee retains the right to inspect the system and verify lock-out in accordance with the Energy Control Procedure. Employees are responsible to verify de-energization on the portion of the equipment they are working on.

1.2 Lock-out/tag-out device removal

1. Each lock-out/tag-out device shall be removed from each energy-isolating device by the employee who applied the device. If the employee who applied the device is not available to remove it every effort shall be made to contact that person. If still unable to contact the person who installed the lock-out/tag-out device the craft supervisor and the general foreman/foreman shall verify it is safe to remove the device and start the system. The employee shall be notified that his or her lock has been removed prior to their recommencing work.

CONTROL OF HAZARDOUS ENERGY (Lockout/ Tagout)

1.3 Exclusions from Lock-out/Tag-out

1. All work performed on energized systems must be a compelling reason that justifies placing personnel at increased risk of injury.
2. Work on energized equipment such as hot tapping, testing of electrical circuits, and work on in-service equipment where work on energized equipment is required to perform necessary vital adjustments, may be excluded from lock-out/tag-out. However, written authorization from senior management that identifies the compelling reason that work must be performed on an energized system. Final review of an energized work plan must be conducted by the Safety Dept.

1.4 Training and Re-Training

Training shall be conducted initially prior to an employee performing service or maintenance on equipment containing hazardous energy sources. Re-training shall be conducted as a minimum, when the employee's job assignment changes, when the Lock-out/Tag-out procedure changes, or, when the employee's performance indicates the need for retraining.

References

Title 29 CFR 1910.147 – The Control of Hazardous Energy

EXCAVATION AND
TRENCHING

EXCAVATION AND TRENCHING

Page 1 of 2

PURPOSE

To establish minimum requirements for all work in and around excavations.

REQUIREMENTS

1.0 GENERAL REQUIREMENTS

1. Each employer that has employees working in an excavation shall have a designated competent person on the job site. The competent person shall be onsite at all times during which excavation activities are conducted.
2. All personnel working in or around an excavation shall be protected from cave-ins at all times by installing protective systems and warning devices that prevent exposure to known or suspected hazards. In addition, all excavations over 6' in depth shall be provided with fall protection for all workers exposed to within 6' of the leading edge.
3. The contractor will ensure any and all tabulated data for any mechanical support system being used in a trench be made available on site, at all times, for immediate review.
4. Soil classification shall be made by the competent person or a registered professional engineer trained in soil classification. Unclassified soil shall be assumed to be Class C.
5. All excavations over 5 feet deep shall be shored, sloped, or benched as required. Excavations and the work scheduled to be performed in the excavation shall be evaluated by the competent person to determine if the shoring, sloping, or benching needs to begin at a depth less than 5 feet. Class C soil will be slope 1 ½: 1 or shored and should not ever be benched.
6. All sloping, benching or shoring for excavations over 20 feet shall be designed by a registered professional engineer (PE) and all shoring installed shall be approved and signed off by a PE.
7. All spoils shall be placed a minimum of 2 feet from the edge of the excavation. Loose soil or rocks shall be removed from the sides of excavation walls.
8. Excavations 4 feet in depth or greater, shall have a stairway, ladder, ramp, or other safe means of egress within 25 feet of any employee.
9. All excavations shall be inspected by a competent person before entry at the start of each shift, after rain or snowfall, after freezing and/or thawing temperatures occur or after any condition that can change the integrity of the soil.
10. Documentation of the inspection shall be provided to Sletten using an Excavation Preplanning and Inspection (or equivalent).
11. During rainy weather, work in excavations shall be suspended until the excavation competent person has evaluated the excavation and the effect the rain is having. The excavation competent person shall maintain a regular inspection schedule during the rain if employees continue to work in the excavation.

EXCAVATION AND TRENCHING

Page 2 of 2

Depending on the amount of rain falling, the duration of the rainfall and the soil type, the competent person may need to maintain continuous observation of the excavation condition.

12. For all excavations 4 feet in depth or greater, the potential for a hazardous atmosphere shall be evaluated. If potential atmospheric hazards exist, then the atmosphere in the excavation shall be tested. This test will be performed by a qualified individual. Indications of the potential for a hazardous atmosphere include, but are not limited to: gas lines, sewer lines, proximity to emissions sources for H₂S, SO₂, CO, and other gases that are heavier than air.
13. Excavations shall be evaluated for hazards in addition to cave-in potential. Electrical sources, energized (pressurized) pipes, underground tanks, etc. may present a hazard to employees who are required to enter the excavation.
14. The competent person responsible for the crew working in the excavation shall inspect the excavation throughout the work period and stop operations when unsafe conditions exist.
15. The number of workers in the excavation shall be limited to the number needed to perform the work.
16. Water shall not be allowed to accumulate in excavations at any time. Pumps, drains, or other means shall be used to remove water constantly.
17. Stability of adjacent structures shall be evaluated before starting an excavation and monitored daily thereafter.
18. When mobile equipment is operated adjacent to an excavation, or when such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, a warning system will be utilized such as barricades, hand or mechanical signals, or stop logs. If possible, the grade should be away from the excavation.
19. All workers shall be kept clear of excavating equipment swing radii and moving parts.

1.1 Training

1. Each employee who works in or around an excavation shall be trained to recognize potential hazards associated with excavations: cave-in potential, fall hazards, safe entry and exit, proximity to excavating equipment, air quality, back-filling and compacting activities, protective systems, etc.
2. Each individual assigned as an excavation competent person shall have documented training or shall have documentation of experience and qualifications in excavation activities.

REFERENCES

Title 29 CFR 1926.650 – Excavations

Excavation Preplanning and Inspection Checklist

(OSHA Section 29 CFR Part 1926.650)



REV 09/08

(This form shall be submitted to Sletten prior to commencing excavation and then submitted weekly as documentation of daily inspections.)

Contractor in charge of excavation: _____ Job: _____ Date: _____

Contractor actually doing excavation: _____ Dates excavation to be open: Start: _____ Finish: _____

Excavation location: _____

Depth _____ Width _____ Length _____

Purpose for excavation: _____

Have utility companies been notified? Yes No If no, explain: _____

Have underground utilities been identified? Yes No If no, explain: _____

Are there any special issues/needs/requirements/safety considerations? _____

Sloping or benching for excavations greater than 20 feet deep shall be designed by a registered professional engineer. Will this be necessary? Yes No

Soil Classification: Type C Type B Type A Stable rock

Method of determining classification: _____

Protective system used for excavation:

_____ Sloping/benching Indicate slope: vertical 3/4:1 1:1 1 1/2: 1 2:1

_____ Shoring Indicate type: Trench box Hydraulic Timber Other; Describe: _____

List known obstructions: elec/tele water/sewer footings other (specify) _____

Distance to: utilities buildings roads other (specify) _____

Excavation method: Backhoe Hand dig Ditchwitch Other (specify): _____

Is water removal equipment needed: Yes No

Excavation Inspection:

Date:											
Time:											
Name of Competent Person:											
Weather:											
		YES	NO								
Workers trained in excavation safety?											
Sloping/benching/shoring in-place and stable											
Was atmospheric testing required?											
Was atmospheric testing done?											
Is the spoil pile back 3' from the edge?											
Have surface encumbrances been removed?											
Are there any signs of sloughing or cave-in?											
Is there water accumulation in the bottom?											
Are there vibration sources near the excavation?											
Is there adequate access/egress (ladder, ramp, stairs)											
Has the soil been disturbed previously?											
Have the barricades been placed and maintained?											
Are there any signs of soil cracking or fissuring?											

Signature of Competent Person: _____



FALL PROTECTION

PURPOSE

To provide fall prevention and fall protection systems to ensure Sletten Companies employees are protected when work activities place them in an elevated position or in a position where a fall to a ground or sub-ground elevation is possible.

REQUIREMENTS

1.0 Fall Prevention

Fall prevention measures shall be implemented when the potential for a fall of 6 feet or more exists.

1.1 Guardrails General

A guardrail system designed to meet the requirements of 29 CFR 1926.450 shall be required if the walking or working surface is six feet or more above a lower level. Sletten Companies and its sub-contractors shall provide training to their employees regarding fall protection issues. Sletten Companies will also train employees regarding proper maintenance, assembly, disassembly, inspection and-recognition of all hazards and type of fall protection being used on a jobsite.

When guardrails systems are used around holes that are used as points of access (such as ladderways) they shall be provided with either a swing gate or an offset so an employee cannot back into the opening. Such openings for ladders will be made in accordance with ANSI A1264.1-1995 Safety Requirement for Workplace Floor and Wall Openings, Stairs and Railing Systems.

1.2 Floor Hole Covers and Wall Opening Barricades

1. Any hole larger than 2 inches in its least dimension shall have either floor hole covers or guardrails in accordance with 29 CFR 1925.500. When a floor opening is protected by a floor cover such floor cover should be properly secured to prevent displacement and be properly marked (i.e. hole, cover, danger, do not remove).
2. Any wall opening presenting a fall hazard exposure will be controlled with the equivalent of standard guardrails.

1.3 Leading Edge

Whenever handset formwork is erected or "flyers" are being moved a temporary moving fall hazard situation is created. Under these circumstances workers shall still be protected from exposure to fall hazards six feet or greater. However, to allow other workers in the area not directly exposed to the fall hazard to continue to work, the following procedures shall be implemented:

1. A control line shall be erected not less than 15 feet or more than 25 feet from the leading edge.
 - a. The control line shall consist of ropes (or equivalent) and supporting stanchions capable of remaining upright under typical wind conditions.
 - b. The rope shall have a breaking strength of 200 pounds.
 - c. The rope shall be placed at a height between 39 and 45 inches from the working surface.
 - d. The rope shall be flagged with highly visible markings at six foot intervals.
2. All workers on the fall hazard side of the control line shall be "tied-off" at all times.

FALL PROTECTION

3. Workers on the opposite side of the control line from the fall hazard may work with no additional fall protection measures; provided that all fall hazards on that side are protected with guardrails/hole covers.

1.4 Personal Fall Arrest Systems (PFAS)

1. Sletten allows only full body harnesses to be used for fall arrest. The harness must be of the proper size and adjusted to fit in order to provide the proper protection.
2. Lanyards shall be of the shock absorbing type. Two lanyards (or twin lanyards) shall be used, in most cases, to facilitate tie off while moving.
3. Shock absorbing lanyards allow for no more than a 6 feet free fall and 3.5 feet of deceleration distance. This is a total distance of 9.5 feet plus the dangling distance of the torso and the legs. Employees need an anchor point that will not allow them to hit any objects below them. Falling 9.5 feet to a floor that is 10 feet below will involve a severe impact for the employee. Employers and employees need to insure the fall zone is adequate for the size of the employee and the length of the lanyard or the lanyard needs to be secured high enough above the employee's head to prevent contacting any lower objects in the event of a fall.
4. One end of the lanyard shall be attached to the D-ring between the employee's shoulder blades. The other end shall be attached to an anchorage that is high enough so that a fall of more than six feet cannot occur (usually at least the same height as the D-ring). The lanyard shall restrict the free fall to no more than 6 feet and the deceleration distance to 3.5 feet. Lanyards from other countries do not always meet this requirement.
5. Snapping the lanyard back onto itself causes a weak point in the lanyard similar to placing a knot in the lanyard, which is not allowed. (Note: there are lanyards manufactured that allow the user to snapback onto its self.)
6. Snap hooks shall be of the self-locking type.
7. Anchorage and anchor connectors (tie off points) shall be capable of supporting 5,000 pounds per person or engineered with a 2 to 1 safety factor. This eliminates items like small bore pipe (less than 2"), conduit, handrails, most all-thread systems, most scaffolding components, etc. The best anchorages are manufactured anchorages, e.g., girder grips, beamers, beam straps, lifelines (horizontal and vertical), retractable lifelines, rope grabs, etc.
8. Horizontal lifelines shall be erected above the employee's shoulders whenever possible. The lifelines shall be protected from sharp edges and abrasion. Lifelines shall be independent of scaffold systems and capable of supporting 5,000 pounds per person attached. All horizontal lifelines must be engineered prior to use.

1.5 Competent Person

A competent person shall oversee all aspects of the fall protection program. A competent person shall ensure component compatibility to help reduce the risk of equipment failure or rollout.

1.6 Inspection

1. Components of fall protection systems shall be inspected prior to each use for mildew, wear, damage, and other deterioration.

FALL PROTECTION

2. Defective components shall be removed from service if their function or strength has been adversely affected.
3. Body harness system or components subject to impact loading shall be immediately removed from service and shall not be used again for employee protection unless inspected and determined by a competent person to be undamaged and suitable for reuse.

1.7 Rescue

- i. Rescue plans shall be provided for suspended employees. Prompt rescue shall be readily available for employees who are not able to self-rescue.
- ii. Rescue equipment shall be identified in the project Job Hazard Analysis. All rescue equipment shall be routinely inspected and immediately available.

1.8 Care, Use and Maintenance of Equipment

1. All fall protection equipment shall be protected against damage from chemicals, sharp edges or weather

1.9 Training Content and Requirements

1. Training shall be conducted by a qualified or competent person and shall include the nature of the fall hazards, fall protection systems, fall protection restraint, procedures for erecting, using, inspecting and dismantling fall protection, limitations of fall protection equipment, selection of anchor points, the elements of the site specific fall requirements and the requirements of Sletten and the governing authority.
2. Retraining shall be conducted when the fall protection program changes, a new hazard is introduced into the work place, new fall protection equipment is introduced or when the employees performance indicates the need for retraining to restore the desired level of competency.

2.0 Portable Fall Protection Anchorages

1. These blocks shall be of sufficient size that they will weigh a minimum of 3000 or more pounds, for use as a fall protection anchorage point for a retractable device attached to the full body harness of the worker exposed to such hazards as working near borings, excavations, etc.
3. These concrete blocks are also widely used to protect fire hydrants and other such installations from vehicle impact damage on Sletten job sites. A proper picking point facilitates safe movement and placing of the blocks where needed.

REFERENCES

Title 29 CFR 1926.500 et al.



10/15/10

GRINDERS – PEDESTAL, BENCH AND PORTABLE

Page 1 of 3

PURPOSE

To establish methods and protective devices required to safely use abrasive, wheel-grinding machines including pedestal, stationary bench, and hand-held portable grinders designed and guarded for use with abrasive wheels.

REQUIREMENTS

1.0 GENERAL REQUIREMENTS

1. Project management shall ensure employees are trained by a competent or qualified person prior to using grinders and grinding wheels. Training shall be documented.
2. Prior to performing repair or maintenance on grinders, proper electrical/pneumatic disconnect procedures shall be followed. Operators shall inspect their grinders for proper wheel RPM rating, washers and spacing of work rest and guards. In addition, the operator shall ensure the grinder has been inspected per site/facility requirements.
3. Grinding wheels shall be run at full operating speed with safety guards in place before beginning work. While starting the grinder, stand to the side of the grinding wheel and out of the plane of rotation. Do not stand in line with the unprotected part of the wheel.
4. For bench grinders the operator shall ensure the wheel not in use is guarded to protect the operator and other employees in the area in case of wheel breakage.
5. Do not grind soft metals (such as aluminum, brass, or copper) with general purpose wheels. These soft metals will clog the grinding wheels making them useless.
6. Peripheral grinding wheels shall not be used for side grinding. They lack sufficient support to withstand the pressure exerted by this operation. For side grinding, use only wheels that are manufactured and designed for that purpose.
7. All grinding and cutting wheels and grinders (pedestal, bench, and portable) shall bear the rpm identification affixed by the manufacturer. This identification shall be maintained in readable condition.
8. Employees shall not wear loose fitting clothing when using a grinder.

1.1 Personal Protection

1. Safety glasses and/or a face shield shall be worn when using abrasive wheels. If the work creates significant airborne dust, consider adding monogoggles to your personal protective equipment.
2. Gloves should be worn when using portable grinders. Do NOT use gloves when operating a bench grinder.
3. Hearing protection may be required while operating grinding machines if noise levels exceed OSHA limits.

GRINDERS – PEDESTAL, BENCH AND PORTABLE

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4. Consider the need for respiratory protection or a ventilation system when dusty conditions exist. Consult the SDS on materials you are grinding for more information about health hazards and the need for respiratory protection.
5. Protection shall be provided for personnel near the grinder with protection equivalent to the operator's, or keep them away or shielded from the exposure area.
6. Portable screens for spark containment shall be used if the potential for fire from sparks exists.

1.2 Grinding Wheels

1. Only grinding wheels of the proper type and construction for the work shall be used. Wheels shall be properly attached to the grinder per the manufacturers' requirements. No special adapters, arbors, or other improvisations are permitted. No more than one wheel shall be mounted between a single set of flanges.
2. Reinforced wheels reduce the hazard of flying parts or pieces in case of breakage. Organic (resinous) bonded wheels have greater resistance to shock and breakage than do inorganic (vitreous) bonded wheels.
3. Before mounting or using a grinding wheel, inspect it closely and perform a ring test to make sure it has not been damaged while in shipping, handling or use.
4. The wheel RPM rating shall be equal to or above the maximum potential rpm of the grinder on which it is mounted. Reducing air pressure or volume to the grinder is not an acceptable substitute for the use of a wheel that has a higher rpm rating than the grinder.
5. Grinding wheels shall be stored in a dry place with the temperature above freezing and shall be protected from physical damage that could cause cracking.

1.3 Pedestal and Bench Grinders

1. Installation and inspection of grinders and grinding wheels shall be performed by a qualified person.
2. The operator using the grinder is responsible for maintaining the proper clearance (1/8 inch maximum) between the work rest and the wheel. Do not allow work rests to extend to the side of the wheel, unless the wheel is specifically made and designed for this purpose.
3. Safety Guards – Provide all abrasive wheel benches and pedestal grinders with safety guards that cover the spindle ends as well as the nut and flange projection. These guards shall be strong enough to withstand the effects of a bursting wheel. The angular exposure of the grinding wheel periphery and sides of safety guards shall not exceed 90 degrees.
4. Hood Guards – The distance between the wheel and the hood guard at the top of the opening shall not be more than ¼ inch (0.5 centimeters).

1.4 Portable Grinders

GRINDERS – PEDESTAL, BENCH AND PORTABLE

Page 3 of 3

1. Portable grinders shall not be used as a replacement for a bench grinder.
2. Employees shall inspect their grinders before each use.
3. Employees using portable grinders shall be responsible for changing the wheels when necessary. Use only wheels with rpm ratings equal to or above that of the grinder.
4. All wheels shall be used with safety guards, with the single exception of wheels 2 inches or less in diameter to which it is impossible to apply safety guards. In this case, wear a full heavy-duty face shield, along with safety glasses. Allow safety guards on portable grinders a maximum exposure angle of 180 degrees, and affix them firmly to the grinder. Position guards so that pieces of an accidentally broken wheel are deflected away from the operator. Protect cup-type wheels with either a revolving cup guard or a band-type guard.

REFERENCES

Title 29 CFR 1910.243 Guarding of Portable Powered Tools
Title 29 CFR 1910.215 Abrasive Wheel Machinery
Title 29 CFR 1926.300 General Requirements
Title 29 CFR 1926.303 Abrasive Wheels and Tools
ANSI B7.1-197 Safety Code for the Use, Care and Protection of Abrasive Wheels

HAND TOOLS

PURPOSE

To establish minimum requirements for the safe use of hand tools.

REQUIREMENTS

1.0 GENERAL REQUIREMENTS

1. Hand tools shall only be used for the purpose for which they were designed.
2. Employees shall only use tools that are in good condition. Worn or broken tools shall be repaired or replaced.
3. Employees shall use the appropriate safety equipment for each tool.
4. Employees shall store tools that are not in use. Proper storage includes toolboxes, tool racks, and cabinets.
5. Employees shall not leave tools in overhead work areas where they may fall.
6. Employees shall not carry a sharp or pointed tool in his/her pockets or belt unless the point or edge is protected with a cover.
7. Hand tools being used at elevations, where other employees are working below, will be tethered to the employee or a substantial anchorage, to prevent the tool becoming a hazard should it slip out of the operators grip.

1.1 Hammers and Sledges

1. Safety glasses are required to be worn by all employees at all times on all Sletten jobsites.
2. Employees shall check behind themselves before swinging a hammer or sledge.
3. Employees shall be instructed to keep their eyes on the object to be hit.
4. Employees shall never use a damaged hammer or sledge.

1.2 Chisels and Punches

1. Safety glasses are required to be worn by all employees at all times on all Sletten jobsites.
2. Employees shall keep chisels sharp and in good condition. Repair or replace dull or damaged tools.
3. Employees shall be instructed to strike blows squarely and aim a chisel or punch away from the body.
4. Mushroom heads of chisels and punches shall be ground down to prevent spalling.

1.3 Wrenches

HAND TOOLS

1. Employees shall not use a "cheater" to increase leverage.
2. Whenever possible, employees shall pull on the wrench handle rather than push. They shall be instructed to adjust their stance to avoid a fall if the wrench slips.
3. Employees shall repair or discard any worn or damaged wrenches.
4. Employees shall never use hand sockets on power or impact tools.
5. Employees shall not use a hammer on a wrench unless it is the striking face type.
6. The use of adjustable wrenches should be limited to task that no other wrench can perform.

1.4 Screwdrivers

1. Employees shall use a screwdriver with the right type of blade and one that properly fits the size screw.
2. Employees shall never use a bent or damaged screwdriver.
3. Employees shall not use a screwdriver as a prybar or a chisel.
4. Employees shall keep handles free of grease and oil.

1.5 Hand Saws

1. Safety glasses are required to be worn by all employees at all times on all Sletten jobsites..
2. Employees shall keep saw blades sharp. Resharpen or replace blades that have lost cutting teeth.
3. Employees shall store saws so that there is no chance for someone to fall onto or bump into the blades.

REFERENCES

Title 29 CFR 1910.242 Hand and Portable Powered Tools and Equipment, General
Title 29 CFR 1926.300 General Requirements
Title 29 CFR 1926.301 Hand Tools

HOUSEKEEPING

PURPOSE

To establish the minimum performance requirements for maintaining safe housekeeping on all Sletten projects.

OBJECTIVE

Good housekeeping promotes a safe and productive work environment and is a critical element in the safe execution and completion of Sletten projects. The Project Superintendent is ultimately responsible for ensuring that their jobsite is safe, clean and well organized. However, it is the personal responsibility of each and every employee and sub-contractor to perform their role in maintaining a safe, healthful, clean and organized jobsite.

REQUIREMENTS

1.0 GENERAL REQUIREMENTS

1. All work areas, walkways, stairways, access and egress points shall be maintained to remain clean and free of debris and materials.
2. Work areas shall be cleaned as often as necessary to eliminate trip, slip and fall hazards. Focus areas include scaffolds, ladders, ramps, stairs, electrical and mechanical equipment.
3. There shall be unobstructed access, a minimum of 36" in all directions at all times, to such areas as electrical panels, safety disconnect switches, fire extinguishers, emergency exits, etc.
4. Suitable containers shall be provided for the continuous disposal of waste materials. Combustible waste such as oily rags, paper, etc. shall be stored in an approved combustible storage container and maintained in a safe place. All containers shall be labeled to indicate the permissible contents and disposed of in accordance with all federal, state and local requirements.
5. Extension cords, wires, cables and any other tripping hazards that could be elevated to ceiling height should be kept in an elevated position where they pose no potential danger to personnel and are not likely to be damaged by activities or equipment. Electrically energized systems must be secured with non-conductive materials to prevent unintentional grounding in case of insulation failure.
6. During non-working hours electrical cords not in use should be picked up and stored properly.
7. All nails whether loose or protruding shall be disposed of immediately. Bending nails is not considered a good housekeeping practice as they still present a hazard in the work place. Sletten requires that all nails, once removed from service, be removed from the material they were imbedded in, removed from the job site and disposed of in a safe manner.
8. All hazardous materials such as sharp objects, nails, glass etc., shall be disposed of properly to eliminate personnel exposure to those hazards.
9. Storage and lay down areas shall be kept clean and organized at all times. All materials shall have designated storage areas and have requirements for safe storage, (maximum height & weight requirements).
10. Materials shall be separated based on the kind, size, and length of the material. It shall also be placed in neat, orderly piles that will not fall. If the piles are high, they shall be stepped back as the height

HOUSEKEEPING

increases, and shall be secured by cross piling or cross tying. Piles of material shall be arranged to allow for safe passageways.

11. Timely response to spills such as oil, grease, or other liquid shall be immediate and in accordance to Sletten's site specific plans.
12. Trash which does not contain any hazardous waste shall not be stored or disposed in bags or containers marked for hazardous waste.
13. Lunchroom area trash disposal cans shall be provided with covers, their use shall be enforced, and they shall be emptied daily.
14. Lunch and break areas shall be kept clean and free of all food scraps, wrappers, cups, and other disposable items.

REFERENCES

Title 29 CFR 1910.22 – General Requirements
Title 29 CFR 1926.25 - Housekeeping

LADDERS

LADDERS

PURPOSE

To provide minimum requirements for selecting, constructing, maintaining, inspecting, and using ladders.

REQUIREMENTS

1.0 General Ladder Usage

1. Always select the proper size and design of the ladder based on its intended use.
2. Ladders shall only be used for the purpose intended by the manufacturer.
3. Metal ladders should never be used while working on or near electrical equipment.
4. When using a ladder near a leading edge, whether there is a guardrail system or not, always tie-off with proper fall protection equipment to an approved/rated anchor point.
5. Never stand on the top two steps or cap of an A-frame ladder.
6. Only light, temporary work should be performed from ladders.
7. Ladders shall not be placed in front of doors that open toward the ladder unless the door is locked or otherwise guarded and signage is used to warn that workers are on the other side of the door.
8. Ladder feet shall be placed on a firm base, and the area at the top and bottom of the ladder shall be kept clear.
9. When ascending or descending ladders, workers are to face the ladder and use both hands to hold onto the ladder. Employees shall maintain a three-point contact at all times while ascending or descending a ladder. If material shall be moved from one level to another, a rope, block and tackle, or other means shall be used. Materials are not to be hand carried on ladders.
10. Ladders shall not be used horizontally as runways or scaffolds.
11. Each contractor will identify competent person for ladder inspection and training. Each employee will be trained in the proper use and inspection of ladders.

1.1 Straight Ladders/Extension Ladders

1. All portable straight ladders shall be equipped with approved safety shoes.
2. Extension ladders shall only be used as a complete system. The top section shall never be used separately by itself.
3. The feet of the ladder shall be placed approximately one quarter of its supported length away from the vertical plane of its top support. (That is, set the ladder at a 4:1 slope.)

LADDERS

4. When using straight ladders/extension ladders, the top of the ladder shall be secured to prevent displacement. When possible the bottom of the ladder should be secured. Use ladder shoes, stakes, or other means to secure the ladder.
5. Ladders leading to landings, walkways, platforms, etc. shall extend 36 inches above this point and shall be securely fastened to prevent moving. If the ladder is not long enough to extend 36 inches above the landing, suitable grabrails shall be installed. Long ladders shall be braced at intermediate points as necessary to prevent springing.
6. Rope and Wheel attachments used to hoist tools or materials to the areas accessed by the ladder shall only be used on ladders specifically approved for such use by the manufacturer, and properly secured for such use. Employees accessing the hoisting area shall be properly tied off with approved fall protection harnesses, lanyards and anchorages.
7. On two-section straight/extension ladders, the minimum overlap for two (2) sections in use shall be as follows:

Size of ladder (feet)	Overlap (feet)
Up to and including 36'	3'
Over 36' up to and including 48'	4'
Over 48' up to and including 60'	5'

1.2 Step Ladders

1. Step ladders (sometimes referred to as "A" frame ladders) shall have positive locking spreaders that will be fully spread and locked when the ladder is in use.
2. Step ladders shall not be used as straight ladders. Workers shall not be allowed to work from the rung next to the top or the top of a stepladder.
3. Step ladders shall be firm and well constructed. Care shall be taken when setting a ladder on grating. Often the feet of a stepladder will slip through the grating causing the ladder to fall.
4. Step ladders shall not be used as straight/extension ladders.

1.3 Job-Built Ladders

When it is necessary to build a ladder at the jobsite, the ladder shall comply with the following requirements:

1. ANSI A14.4 – 1992 Safety Requirements for Job-Made Wooden Ladders.

1.4 Ladder Inspection

1. Ladders shall be inspected before each use for deterioration and damage. Close visual inspection is recommended.

LADDERS

2. No employee shall be allowed to use (for any reason) any ladder that has broken, loose, or cracked rungs, side rails, or braces. Any ladder found in this condition shall be removed from service immediately.

1.5 Ladder Maintenance

1. Wooden ladders may be periodically treated with a clear preservative such as varnish, shellac, or linseed oil. Ladders shall not be painted because painting covers up structural defects.
2. All ladders should have the rungs cleaned to prevent accumulation of materials that might destroy their non-slipping properties, and all metal fittings should be carefully checked for rust, corrosion and cracking.
3. When not in use, ladders should be protected from the weather, stored out of the way and secured to prevent from falling over.

REFERENCES

American National Standards Institute (ANSI) A14.4-1992
Title 29 CFR 1910.25 – Portable Wood Ladders
Title 29 CFR 1910.26 – Portable Metal Ladders
Title 29 CFR 1910.27 – Fixed Ladders
Title 29 CFR 1926.1050 – Stairways & Ladders

POWDER-ACTUATED TOOLS

Page 1 of 1

PURPOSE

To establish minimum requirements for the safe use of powder-actuated tools.

REQUIREMENTS

1.0 GENERAL REQUIREMENTS

1. All manufacturers' recommendations and local laws governing the proper use, inspection and maintenance and record keeping of powder actuated tools shall be followed at all times.
2. Only authorized, certified employees will be allowed to use powder-actuated tools.
3. The following general precautions are applicable to all types of powder-actuated stud guns:
 - a. Explosive powder-actuated tools and cartridges shall be kept in a secured place at all times (other than when being used) to prevent unauthorized use.
 - b. Storage of tools, cartridges, and studs shall be controlled so that only *authorized; trained* personnel can withdraw them for use.
 - c. Tool manufacturers' representatives shall train, qualify, and certify site employees in the use and maintenance of stud guns.
 - d. A current certification card for the powder-actuated tool being used shall be in the operator's possession.
4. Signage shall be posted that warns others working in the area where powder actuated tools are being used. Operators shall warn others of the start of use by announcing "fire in the hole" or similar announcement so others are not alarmed by the sudden outburst of noise.
5. The powder-actuated tool shall not be used where the stud is to be driven into surface-hardened steel, cast iron, glazed brick or tile, marble, granite, live rock, or similar brittle materials.
6. Tools shall not be used in any location where explosives, flammable gasses, vapors, or dusts are present.
7. The tool operator and any nearby workers shall wear face shields and/or safety glasses when the tool is being used. Ear protection shall be used 100 percent of the time this tool is used.
8. The utmost care shall be exercised to ensure that cartridges, studs, nails, etc., are of the proper specification.
9. At all times, the tool shall be equipped with the proper ricochet or spall guard.
10. Spent and misfired cartridges shall be disposed of according to the manufacturer's recommendations and shall not be left in the work area.

REFERENCES

Title 29 CFR 1910.243 Guarding of Portable Powered Tools
Title 29 CFR 1926.302 Power Operated Hand Tools
ANSI A10.3-1995 Safety Requirements for Powder Actuated Fastening Systems

POWER TOOLS

PURPOSE

To establish minimum requirements for the safe use of power tools.

REQUIREMENTS

1.0 GENERAL REQUIREMENTS

1. Employees should not begin to operate or work around or near any type of power tools without wearing the appropriate personal protective equipment.
2. Employees shall follow all manufacturers' instructions regarding the safe storage, operation, and maintenance of power tools.
3. Employees shall not use a power tool unless they have been trained to use it properly and safely.
4. All guards shall be in place before operating the tool.
5. Appropriate eye protection shall be worn when operating or working near power tools.
6. Employees should not wear loose-fitting clothing or dangling jewelry when using power tools.
7. Employees shall disconnect the tool from power source before changing blades, bits, etc.
8. Employees shall remove chuck keys, etc., before using a power tool.
9. Employees shall disconnect power tools from the power source by pulling out the plug; they shall not pull on the power cord.
10. Tools shall be either double insulated or have three-prong plugs with grounded extension cords and receptacles.
11. Employees shall be required to keep their finger off the trigger and make sure the switch is "off" before plugging in a tool.
12. Employees shall not use electric tools that have worn or damaged plugs or cords.
13. Employees shall secure small pieces of work with a clamp or in a vise.
14. When using power tools, the work area shall be kept free of any trip hazards or slippery conditions.
15. Employees should never use high pressure air to blow off equipment or clothing; use a brush.
16. All power tools shall be used for their intended use only.
17. Locking device or switches on all power tools shall be removed prior to use.

1.1 Saws (General)

POWER TOOLS

1. Employees shall not jam or force saws into the work.
2. Portable saws shall have a spring-loaded operating switch.
3. Employees shall be instructed to stay out of the saw's line of cutting.
4. Employees shall be instructed to start and stop the saw outside the work piece.
5. Employees shall wear appropriate eye and hearing protection.

1.2 Circular Saws

1. Employees shall not retract the lower guard while the blade is moving.
2. Employees shall use the retracting handle or safety lift lever to move the lower guard.
3. Employees shall not clamp, wedge or tie the guard open.
4. Employees shall not operate the saw if the guard is not working properly.
5. Employees shall keep their hand(s) away from the blade while using the saw.
6. Employees shall keep the power cord out of the line of the saw cut.

1.3 Reciprocating Saws

1. Employees shall not use the saw unless the insulating boot is in place.
2. Employees shall be especially careful to keep their hands away from the blade when using this tool.

1.4 Drills

1. Employees shall wear safety glasses as a minimum and additional eye and face protection if the job requires.
2. Employees shall not use dull or chipped bits.
3. Employees shall let the bit cool down before changing or adjusting it.
4. Employees shall not force the drill into the work.
5. Employees shall use light oil to keep the bit lubricated and cool during use.

1.5 Pneumatic Tools

1. Employees shall wear appropriate eye and hearing protection.
2. Pneumatic power tools shall be securely attached to the compressed air hose.

POWER TOOLS

3. Employees shall not make adjustments to pneumatic tools until air pressure is no longer being supplied to the hose or tool.
4. Employees shall not hoist, lower, or carry a tool by the hose.
5. Pneumatic impact tools shall have safety clips or retainers for tool bits.
6. Employees shall follow the manufacturers' guidelines for safe operating pressures.
7. Employees shall locate all air hoses so they do not present a tripping hazard.
8. A safety device shall be at the source of supply to reduce pressure in case of hose failure for all hoses exceeding ½ inch inside diameter.
9. Airline hose section connections shall be secured against separation. "Chicago" couplings shall be pinned together.
10. When using pneumatic tools in a confined space use only breathing quality air.

1.6 Portable Band Saws

Employees shall not use dull or damaged blades. Do not leave blades in the work area because they create trip hazards.

1.7 Radial Arm Saws

1. The radial arm shall be self-retracting.
2. Employees shall not remove any manufacturers' guards.
3. Only authorized employees shall use a radial arm saw.

1.8 Magnetic Base Drills

1. Employees shall use a safety chain to secure mag drills to the work.
2. Electrical cord connections shall be taped.
3. Electrical connections at the source of power shall be tagged "do not unplug" so that they cannot be inadvertently unplugged during use.

REFERENCES

Title 29 CFR 1910.243 Guarding of Portable Power Tools
Title 29 CFR 1910.213 Woodworking Machinery Requirements
Title 29 CFR 1926.302 Power Operated Hand Tools
Title 29 CFR 1926.300 General Requirements
Title 29 CFR 1926.304 Woodworking Tools

SCAFFOLDS

PURPOSE

To provide requirements for erecting, use, and dismantling elevated work platforms.

REQUIREMENTS

1.0 General Requirements

1. If the scaffold is owned, leased, rented or is under control of Sletten Companies, any subcontractor or vendor will sign a scaffold use agreement, prior to their employees, accessing the scaffold whereby they acknowledge that one of their employees is a competent in scaffolding and that such employee has inspected the scaffold prior to use, their employees are properly trained in scaffold use and fall protection and they agree to indemnify Sletten Companies for any actions which may arise as a result of the use of such scaffold.
2. All scaffolds shall be built and maintained in accordance with the manufacturers specifications and, if applicable, the engineered drawings.
3. Each contractor using scaffold shall designate a scaffold competent person(s). This designation shall be made in writing and the individual's qualifications shall be documented.
4. Each contractor using scaffolds shall conduct training regarding the safe erection/dismantling and use of scaffolds for all employees involved in those activities. The training shall comply with the current version of OSHA's scaffolding standards.
5. Each contractor using scaffold shall conduct safety training for all users of scaffolds in accordance with the current version of OSHA's scaffolding standards.
6. All scaffolds shall be built with a complete deck, handrail/midrail, toeboards, baseplates and access ladder. Until the scaffold has been inspected and deemed safe for use, signage will be placed warning employees to not use the scaffold.
7. Whenever a scaffold is erected, altered and dismantled it shall be done under the direct supervision of a competent person.
8. Posts shall be plumb, and scaffold platforms shall be level.
9. Whenever areas below a scaffold allow general access to all site workers, all scaffold levels directly above these areas shall have falling object protection consisting of toeboards, netting or the equivalent.
10. Welding leads, extension cords, hoses etc., shall not be suspended from scaffold components in such a way that they may damage the scaffold or other equipment.

SCAFFOLDS

11. All workers shall tie off to an acceptable anchorage when there is no (or an incomplete) handrail or when there are openings over 12 inches in the working platform. When working from suspended scaffold/platform employees shall be secured to an independent life line.
12. Anchorage parts for independent life lines shall be able to withstand 5,000 pounds per employee attached.
13. Swinging stages, floats, and boatswain's chairs should be tested before using (Test by applying the maximum intended load with the unit close to the floor or ground).
14. Scaffold handrails shall be about 42 inches above the platform. The minimum distance between the handrail and the platform is 38 inches. The 38 inches allows for overlap of the scaffold planks. A midrail shall be placed approximately midway between the platform and the handrail.
15. When scaffold platforms are more than 24 inches above or below a point of access, portable ladders hook-on ladders, attachable ladders, stair towers (scaffold stairways/towers), stairway-type ladders such as ladder stands, ramps walkways, integral prefabricated scaffold access, or direct access from another scaffold, structure, personnel hoist, or similar surface shall be used. Cross braces shall not be used as a means of access. Where possible gates shall be used for safe access and egress.
16. Ladders shall not be used on scaffolds except on large area scaffolds where applicable OSHA criteria are met.
17. Scaffold over 125 feet in height shall be designed by a registered professional engineer, and shall be constructed and loaded according to the design.
18. Scaffolds required for unique situations, non-typical locations, large areas or supporting heavy or precarious loads shall be designed and/or approved by a qualified registered professional engineer. All documentation shall be provided to the Project Safety Manager or Division Safety Director.

1.1 Specific Type Scaffold

1. Suspended Scaffold Requirements
 - a. Two-Point Suspended Scaffolds shall have standard toe boards, midrails, and handrails.
 - b. Platforms shall not be more than 36 inches (0.9 m) wide unless designed by a qualified person to prevent unstable conditions.
 - c. The platform shall be securely fastened to hangers (stirrups) by U-bolts or by other means, which satisfy the requirements of Title 29 CFR 1926.451A.
 - d. The platforms shall be of ladder-type, plank-type, beam-type, or light-metal type. Light metal type platforms having a rated capacity of 450 pounds or less and platforms 40 feet or less in length shall be tested and listed by a nationally recognized laboratory.

SCAFFOLDS

- e. The blocks for fiber or synthetic ropes shall consist of at least one double and one single block. The sheaves of all blocks shall fit the size of the rope used.
 - f. Two-point scaffolds shall not be bridged or otherwise connected one to another during raising and lowering operations unless the bridge connections are articulated (attached), and the hoists properly sized.
 - g. Passage may be made from one platform to another only when the platforms are the same height, are abutting and walk-through stirrups specifically designed for this purpose is used.
 - h. All suspension scaffold support devices such as outrigger beams, cornice hooks, parapet clamps and similar devices, shall rest on surfaces capable of supporting at least 4 times the load imposed on them by the scaffold operating at the rated load of the hoist (or at least 1.5 times the load imposed on them by the scaffold at the stall capacity of the hoist whichever is greater).
2. Boatswains' Chairs
- a. Boatswains' chair tackle shall consist of correct size ball bearings or bushed blocks containing safety hooks and properly "eyed spliced" minimum five-eighths (5/8) inch diameter first-grade manila rope, or other rope which will satisfy the criteria (e.g., strength and durability) of manila rope.
 - b. Boatswains' chair seats slings shall be weave through four corner holes in the seat; shall cross each other on the underside of the seat; and shall be rigged so as to prevent slippage which could cause an out-of-level condition.
 - c. Boatswains' chair seats shall be a minimum of five-eighths (5/8) inch diameter fiber, synthetic, or other rope which will satisfy the criteria (e.g., strength, slip resistance, durability, etc.) of first grade manila rope.
 - d. When a heat producing process such as gas or arc welding is being conducted, boatswains' chair seat slings shall be a minimum of three-eighths (3/8) inch wire rope.
 - e. Non-cross-laminated wood boatswains' chairs shall be reinforced on their underside by cleats securely fastened to prevent the board from splitting.
 - f. The worker shall be tied off to an independent lifeline with a full body safety harness.
3. Electric Hoist Platforms
- a. When working platforms are suspended from electric hoist mechanisms and used to raise and lower workers, a safety harness shall be worn and attached to an independently secured lifeline.
 - b. Such platforms shall have guardrails 42 inches in height above the platform.
 - c. Prior to each use, the hoist mechanism and support attachment shall be visually inspected.

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- d. The cable and the lay of the cable on the spool shall be checked constantly.

4. Mobile Scaffolds

- a. Scaffolds shall be braced by cross, horizontal, or diagonal braces, or combination, thereof, to prevent racking or collapse of the scaffold and to secure vertical members together laterally so as to automatically square and align the vertical members. Scaffolds shall be plumb, level, and squared. All brace connections shall be secured.
- b. Scaffold casters and wheels shall be locked with positive wheel and/or wheel and swivel locks, or equivalent means, to prevent movement of the scaffold while the scaffold is being used in a stationary manner.
- c. Manual force to move the scaffold shall be applied as close to the base as practicable, but not more than 5 feet above the supporting surface.
- d. Power systems used to propel mobile scaffolds shall be designed for such use. Forklifts, trucks, similar motor vehicles or add-on motors shall not be used to propel scaffolds unless the scaffold is designed for such propulsion systems.
- e. Scaffolds shall be stabilized to prevent tipping during movement.
- f. Scaffolds with a working platform higher than four feet should have handrails installed.

5. Stilts

- a. The use of stilts to gain additional working height shall not be permitted on any PBC project.

1.2 Scaffold Formwork ("Flyers") and Shoring

1. Prior to erecting formwork/shoring:

- a. All scaffold formwork and shoring shall be designed by a certified P.E. The scaffold vendor will be provided with the dimensions of the areas to be supported and the vendor shall supply "stamped shop drawings" of the designs and weights of the formwork/shoring.
- b. If shoring scaffold is to be placed on a dirt grade, soil sampling shall be accomplished and a recommendation, based on anticipated loads, shall be obtained from a certified Professional Engineer for the required compaction.
- c. All scaffold components shall be thoroughly inspected for damage. This is especially critical subsequent to stripping operations where scaffold components are to be reused on site. Special attention shall be given to possible broken welds or bolts and bent frames or braces.

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- d. If shoring is to be placed on a dirt grade, scaffold bases shall be set on mudsills measuring no less than 18"x18" and constructed of side-by-side 4"x6" (or 4"x4") lumber covered top and bottom with 3/4" plywood. Plywood only mudsills are not acceptable.
 - e. Measures shall be taken to ensure the soil supporting mudsills is prevented from eroding due to weather conditions.
2. Re-shoring requirements, if applicable, shall be obtained from the structural engineer. "Rule of Thumb" is the three floors directly below the formwork shall be re-shored 100%, 100% and 75%, respectively, from top down. Re-shoring shall be 4x6 wood posts or scaffold and placed directly below the scaffold leg or re-shoring above.
 3. All formwork/shoring shall be inspected by a qualified third party person (i.e., vendor) upon completion of the erection and prior to any loads being applied. Systems designed for similar, multiple floor installation will be inspected by the vendor's qualified person, at a minimum, the first two floors/installations. Subsequent floors/installations will be inspected by the vendor's qualified person as determined necessary by the project General Superintendent.
 4. When pouring concrete on supported formwork, the following guidelines will be considered:
 - a. The start of the pour should always be directly over a supported section of the formwork. Never begin the first pour on a cantilever section or outboard edge.
 - b. A pour watch with a radio shall always be posted below the formwork to watch for movement and/or failures.
 5. Prior to any stripping, the following shall be complied with:
 - a. Verification that the concrete has reached design strength, as determined by the structural engineer. (Verification also required prior to stressing of post-tension cables.)
 - b. Unless otherwise approved by the structural engineer, stripping shall never begin prior to stressing of post-tension cables.
 - c. A plan for safely dismantling the formwork/shoring shall be developed and discussed with the stripping crew.
 - d. All perimeter areas of the new deck shall be protected with guardrails. Deck openings shall be protected with guardrails or properly covered.
 - e. Walkways and decks on the formwork shall be completely clean.
 - f. Areas around and below the formwork stripping/removal activities shall be flagged-off and a spotter positioned in the area if necessary.

SCAFFOLDS

6. Where formwork activities are performed by a Subcontractor, the above procedures will be discussed prior to the Subcontractor commencing work.

1.3 Scaffold Erection and Dismantling

1. Pockets, pouches, and tool belts shall be used to carry the necessary tools for the work.
2. Scaffold erection crews shall inspect all components for defects as the erection proceeds. Any components found to be defective shall be set aside and tagged for repair or disposal.
3. Scaffold members shall be hoisted or lowered with a hand line or passed from hand to hand. Throwing or dropping items to co-workers is not permitted.
4. Constant fall prevention measures shall be maintained. Provisions shall be established for using a safety harness and working on firm scaffold decks when this can be done safely. If positive means of fall protection is determined to be infeasible, a detailed erection/dismantle and fall protection plan shall be submitted to Sletten Project Safety Manager or Safety Director for approval prior to any erection or dismantlement activity taking place.
5. Supported scaffold poles, legs, posts, frames and uprights shall bear on base plates and mudsills or adequate firm foundation.
6. Footings shall be level, sound, rigid and capable of supporting the loaded scaffold without settling or displacement.
7. When scaffolds are to be secured to fixed structures or outriggers are to be used, they shall be installed as soon as possible. When dismantling a scaffold, these should be left on as long as practical.
8. The coordination of this activity with surrounding operations and environment shall be given prior consideration.

1.4 Scaffold Access

1. Do not carry objects in hands while climbing scaffold ladders.
2. Step only on secured ladder or access rungs. Never climb guardrails or cross braces to access scaffold levels.
3. Give full attention to stability while getting on and off the working platform. Do not use the toe board as a handhold or foothold.
4. Pay attention to each step and handhold; most falls occur near the top of the ladder or near the bottom.

SCAFFOLDS

5. Scaffolds shall not be accessed from working/building side unless specific procedures have been established for preventing falls.

1.5 Scaffold Tagging

1. If a scaffold is in the process of being erected, changed, or dismantled, it shall have a red tag. A scaffold that has a red scaffold tag shall be considered unsafe and shall not be used.
2. If a scaffold has been damaged or is defective, a red tag shall be attached.
3. The scaffold tag shall be affixed to each scaffold access ladder approximately 5 feet, 6 inches from its base, where it will not interfere with normal access.

1.6 Inspection and Testing

1. The competent person from each contractor who will have employees on that scaffold that day shall perform and document daily inspections. The Competent Person shall ensure that all scaffolds are in safe condition and tags are legible. When there is concern that a scaffold is not in compliance, an inspection shall be conducted using the Scaffold Inspection Checklist shown in Appendix 3.A.7. (Subcontractors may substitute an equivalent form) and submitted to the Project Safety Manager.
2. Scaffold planks shall be inspected and tested by a designated competent person upon receipt and prior to use as a platform. Users shall examine planks visually prior to each use.
3. Examine planks for knots, excessive grain slope, shakes, decay, dry rot, and other defects.
4. Density of lumber should be equivalent to Douglas fir and capable of supporting four times the intended load. Moisture content should not exceed 20 percent.
5. All scaffold planks shall be scaffold grade or equivalent as recognized by approved grading rules.
6. Planks shall be 2- x 10 inch or 2- x 12-inch heavy-duty (75 psi on 6-foot span lumber).
7. Remove the plank from service if evidence of any defect is noted.

REFERENCES

Title 29 CFR 1910.28 – Safety Requirements for Scaffolding
Title 29 CFR 1926.450 – Scope, Application and Definitions Applicable To Subpart L
Title 29 CFR 1926.451 – General Requirements
Title 29 CFR 1926.452 – Additional Requirements Applicable to Specific Types of Scaffolding

APPENDIX 3.A.7 - FORMS

Scaffold Inspection Checklist

SCAFFOLDING INSPECTION CHECKLIST



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REV 09/08

JOB: _____ DATE: _____ TIME: _____

COMPETENT PERSON: _____ COMPANY: _____

CONTRACTOR THAT ERECTED SCAFFOLD: _____

CONTRACTOR WITH OPERATIONAL CONTROL OF SCAFFOLD: _____

LOCATION OF SCAFFOLD: _____

TYPE OF SCAFFOLD: _____

If any item is checked "NO", the scaffold shall be "red-tagged" until the discrepancy is corrected.
(The number following the question tells you where to look for the OSHA 1926.451 regulation pertaining to the question.)

	YES	NO	N/A
Have scaffolds over 125 feet in height or for special work requirements been designed by a registered professional engineer? (b)(6) and PBCW contract	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
While erecting/dismantling has the feasibility and safety of providing fall protection been determined? (g)(2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have all employees involved in erecting/dismantling or use of the scaffold been properly trained? (1926.454(a) and (b))Have all employees who work on the scaffold been trained on the proper use of the scaffold and fall protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the scaffold been constructed and loaded in accordance with the design of a qualified person with a safety factor of 4 to 1? (a)(1) and (a)(6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the scaffold platform been fully planked with less than 1" between planks or between planks and the uprights? (b)(1)(i)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are open sides of scaffold less than 14 inches from the face of the work? (b)(3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are planks overlapped over the supports? (b)(7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are planks overlapped at least 12 inches, nailed together or otherwise secured? (b)(7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the top and bottom surfaces of the plank visible, free from paint and undamaged? (b)(9)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the scaffold conform to the 4 to 1 base to height ratio requirement? (c)(1)(I)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have tie-ins been installed at a horizontal member that supports the inner and outer legs? (c)(1)(i)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the first vertical tie-in been installed at a height less than 4 times the minimum base dimension? (c)(1)(ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have vertical tie-ins been repeated every 20 feet or less for scaffolds that are 3 feet or less in width? (c)(1)(ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SCAFFOLDING INSPECTION CHECKLIST



	YES	NO	N/A
Have vertical tie-ins been repeated every 26 feet or less for scaffolds wider than 3 feet? (c)(1)(ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the vertical distance from the top tie-in to the top of the scaffold less than the 4 to 1 minimum base dimension? (c)(1)(ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are tie-ins installed at each end of the scaffold and at horizontal distances not to exceed 30 feet? (c)(1)(ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are scaffolds erected on base plates (and mud sills, if necessary)? (c)(2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are footings capable of supporting 4 times the intended load without settling? (c)(2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is scaffold plumb and braced to prevent swaying or displacement? (c)(3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has safe access been provided for all scaffold platforms that are more than 2 feet above or below the point of access? (e)(1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are rest platforms installed every 35 feet vertically? (e)(2)(iii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is direct access from other structures prohibited when that distance is more than 24 inches vertically or 14 inches horizontally? (e)(8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are scaffolds and components loaded beyond their rated capacities? (f)(1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has any damaged part of the scaffold been repaired, replaced or removed as required? (f)(4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there adequate clearance between scaffolds and power lines? (f)(6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have slippery conditions been removed? (f)(8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If storms or high winds are present has a competent person been consulted and wind screens or personal fall arrest used? (f)(12)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are tools, material, and debris removed from scaffold to prevent an accumulation? (f)(13)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do platforms, when loaded, deflect more than 1/60 th of the span? (f)(16)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are guardrails and mid-rails installed on all open sides and open ends of the platform? (g)(4)(i)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are guardrails installed at 38 to 45 inches in height? (g)(4)(ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have falling object hazards been eliminated or toeboards installed? (h)(2)(ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If Tube and Coupler Scaffolds are being used are they in compliance with 1926.452 (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If Fabricated frame scaffolds are being used are the in compliance with 1926.452 (c)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SCAFFOLDING INSPECTION CHECKLIST



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	YES	NO	N/A
FOR SUSPENSION SCAFFOLD:			
Have all employees been trained to recognize the hazards associated with suspended scaffolds? (d)(1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has a competent person evaluated all direct connections prior to use to confirm that the supporting surfaces are able to support the imposed load? (d)(1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the suspension scaffold tied or otherwise secured to prevent it from swaying, as determined by a competent person? (d)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has a competent person inspected the ropes for defects prior to the workshift and after every occurrence that could affect a rope's integrity? (d)(10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If scaffold platform is more than 24 inches (61 centimeters) above or below a point of access, are ladders, ramps, walkways, or similar surfaces available? (e)(1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If using direct access, is the surface within 24 inches (61 centimeters) vertically or 14 inches (36 cm) horizontally from the surface? (e)(8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If lanyards are connected to horizontal lifelines or structural members on single-point or two-point adjustable scaffolds, does the scaffold have additional independent support lines equal in number and strength to the suspension lines and have automatic locking devices? (g)(3)(iii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are emergency escape and rescue devices not being used as working platforms, unless designed to function as both suspension scaffolds and emergency systems? (d)(19)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are counterweights able to resist at least four times the tipping moment imposed by the scaffold operating at either the rated load of the hoist, or one-and-a-half (minimum) times the tipping moment imposed by the scaffold operating at the stall load of the hoist, whichever is greater? (a)(2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the counterweights specifically designed for that use? (d)(3)(iii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are counterweights not made of materials that can be easily dislocated? (Flowable material, such as sand or water, cannot be used.) (d)(3)(ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are counterweights secured by mechanical means to the outrigger beams? (d)(3)(iv)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are vertical lifelines not fastened to counterweights. (g)(3)(i)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are outrigger beams (thrustouts) placed perpendicular to their bearing support. (d)(3)(viii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are tiebacks secured to a structurally sound anchorage on the building or structure? (Sound anchorages do not include standpipes, vents, other piping systems, or electrical conduit.) (d)(3)(ix) and (d)(5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SCAFFOLDING INSPECTION CHECKLIST

	YES	NO	N/A
Are single tiebacks installed perpendicular to the face of the building or structure? (Two tiebacks installed at opposing angles are required when a perpendicular tieback cannot be installed.) (d)(3)(x)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are suspension ropes long enough to allow the scaffold to be lowered to the level below without the rope passing through the hoist, or the end of the rope configured to prevent the end from passing through the hoist? (d)(6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do drum hoists contain no less than four wraps of the rope at the lowest point? (d)(6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are suspension ropes supporting adjustable suspension scaffolds a diameter large enough to provide sufficient surface area for the functioning of brake and hoist mechanisms? (f)(10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are suspension ropes free of the following conditions: kinks; six or more randomly broken wires in one rope lay or three or more broken wires in one strand in one lay; one third or more of the original diameter of the outside wires is lost; heat damage; evidence that the secondary brake has engaged the rope; and any other physical damage that impairs the function and strength of the rope? (Repaired wire cannot be used.) (d)(10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are suspension ropes shielded from heat-producing processes? (f)(11)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have power-operated hoists used to raise or lower a suspended scaffold been tested and listed by a qualified testing laboratory? (Gasoline power-operated hoists or equipment are not permitted.) (d)(13)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the stall load of the scaffold hoist less than three times its rated load? (The stall load is the load at which the prime-mover (motor or engine) of a power-operated hoist stalls or the power to the prime-mover is automatically disconnected.) (a)(5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are all gears and brakes enclosed? (d)(15)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does an automatic braking and locking device, in addition to the operating brake, engage when a hoist makes an instantaneous change in momentum or an accelerated overspeed? (d)(16)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are manually operated hoists used to raise or lower a suspended scaffold tested and listed by a qualified testing laboratory? (These hoists require a positive crank force to Descend.) (d)(13)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have all materials or devices been removed that could be used to increase the working height on a suspension scaffold? (This includes ladders, boxes, and barrels.) (f)(17)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If welding from a suspended scaffold, is:			
• A grounding conductor connected from the scaffold to the structure and at least the size of the welding lead?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• The grounding conductor not attached in series with the welding process or the work piece?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• An insulating material covering the suspension wire rope and extends at least four feet (1.2 meters) above the hoist?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• An insulated protective cover over the hoist?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• The tail line is guided, retained, or both, so that it does not become grounded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SCAFFOLDING INSPECTION CHECKLIST



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- | | YES | NO | N/A |
|---|--------------------------|--------------------------|--------------------------|
| • Each suspension rope attached to an insulated thimble? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Each suspension rope and any other independent line insulated from grounding? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

SIGNATURE OF COMPETENT PERSON: _____

10/10/14

SIGNS AND BARRICADES

PURPOSE

To establish minimum requirements for the proper use of signage and barricades in an effort to properly identify and warn personnel of hazards in the work place.

REQUIREMENTS

1.0 General Requirements

1. Superintendents are responsible for ensuring all necessary barricades, safety signs, stanchions, safety cones or safety warning tape as required to isolate/protect unsafe work areas from workers, pedestrians or vehicle traffic.
2. Barricading will completely enclose the unsafe area.
3. All barricading/signage will be removed after work is complete and hazard is eliminated.

1.1 Signs

1. Signs designating hazard or giving instructions should be placed on barricade stands, posts, other suitable surfaces.
2. Signs should be placed in visible locations, before work starts and should be removed to proper storage areas when they are no longer needed.
3. Signs should be legible and maintained in a usable condition.
4. Employees shall obey barricades & posted signs at all times. Failure to heed the warnings of posted signs or barricades will result in disciplinary action up to and including discharge.

1.2 Barricades

1. Barricades should be used in order to alert employees to potential hazards and indicate if authorization, protective measures, or protective equipment are required.
2. Barricades should be a minimum of 42 inches high, neat, uniform, and level.
3. Barricades should be a minimum of 6 feet back from the edge of excavations, holes, platforms, and roof ledges.
4. Barricades should have blinking lights or be illuminated when used on roadways or walkways after dark.
5. Barricades should have an entrance, opening, or gate whenever possible.
6. Temporary barricades are generally erected for a specific purpose and intended for quick and easy removal. Examples are colored tape, sawhorses, safety cones, etc. All barricades should have a sign and color code signifying warning, caution, or danger to prevent or restrict access to the area.

SIGNS AND BARRICADES

1.3 Barricades are required around the following (unless other means of protection are provided):

1. Excavations
2. Floor and roof openings
3. Edges of roofs and elevated platforms
4. Around overhead work areas
5. When necessary to warn employees of potential for falling in, through, off or the potential of being struck by a falling object.
6. Other potential hazards associated with energy sources, i.e., electrical equip., high pressure lines, etc.

1.4 Barricade tape

1. Barricade tape shall only be used for temporary protection. It shall never be used for long periods in lieu of other means of more appropriate protection.
2. Yellow tape is used to indicate caution or warning. An employee may enter such an area only after thoroughly assessing the situation and understanding the hazards.
3. Red barricade tape is used to indicate danger. No one may enter a red barricaded area unless they have specific authorization from the supervisor controlling the area. Unauthorized entry into a Red Barricade taped area is subject to disciplinary action.

1.5 Removal of temporary barricades

Once temporary barricades are no longer needed, they shall be removed immediately. However, they should only be removed by the supervisor or competent person authorizing their use.

REFERENCES

Title 29 CFR 1926.202 – Barricades

Title 29 CFR 1910.144 – Safety Color-Codes for Marking Physical Hazards

Title 29 CFR 1910.145 – Specifications for Accident Prevention Signs and Tags

ANSI D6.1-1971 – Manual Uniform Traffic Control Devices for Streets and Highways



SITE ILLUMINATION

PURPOSE

To establish minimum illumination requirements for all work performed on Sletten construction projects

REQUIREMENTS

1.0 GENERAL REQUIREMENTS

Adequate lighting is a key element in providing a safe working environment for all employees and sub-contractors. Construction areas, ramps, runways, corridors, offices, shops, and storage areas shall be lighted to not less than the minimum illumination intensities listed below while any work is in progress.

Foot-candles	Area or operation
5	General construction area lighting
3	General construction areas, concrete placement, excavation and waste areas, accesses, 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. US Dept. of Labor, Mine Safety and Health Administration approved cap lights shall be acceptable for use in tunnel heading.
10	General Construction plant and shops.
30	First-aid stations, infirmaries, and offices.

2.0 Any questions regarding job site or task lighting shall be referred to the Project Superintendent. Since minimum lighting needs and requirements are individual and varied, any necessary measurement of foot candles or lumens will be within the scope of the Project Superintendent.

3.0 For areas not listed above, refer to the latest revision of American National Standard A11.1-1965, R1970, and *Practice for Industrial Lighting*.

REFERENCES

Title 29 CFR 1926.56
ANSI A11.1-1965 (Current)



SITE MATERIALS STORAGE AND HANDLING

PURPOSE

To establish minimum requirements for the safe handling and storage of all materials.

REQUIREMENTS

1.0 GENERAL STORAGE REQUIREMENTS

1. Both temporary and permanent storage shall be neat and orderly. Never obstruct access to walkways, stairways, electrical panels, or emergency response equipment at any time. When planning material storage, a minimum of 36 inches of clearance shall be maintained around and under sprinkler heads, and in front of and around electrical panels and emergency response gear.. Automatic sprinkler controls and electrical panel boxes shall be kept free and unobstructed
2. There shall be a three-foot unobstructed access way maintained at all times around all emergency response equipment, including fire hoses, extinguishers, eye wash stations, emergency phones. Clear access to emergency exits and aisles shall be maintained. Areas immediately outside emergency exits shall be left clear for egress.
3. Material shall not be placed within 6 feet of any hoistway or inside floor opening or within 10 feet of an exterior wall which does not extend above the top of the material stored.
4. Materials shall be separated based on the kind, size, and length of the material. It shall also be placed in neat, orderly piles that will not fall. If the piles are high, they shall be stepped back as the height increases, and shall be secured by cross piling or cross tying. Piles of material shall be arranged to allow for safe passageways.
5. Storage bins and racks that are in good condition shall be used to make storing materials easier and reduce hazards. As necessary, storage racks shall be secured to the wall and/or floor as well as to each other. Damaged racks shall not be used for storage. Employees shall not be allowed to climb racks. Where warranted racks and bins shall have a weight limit and shall be labeled accordingly. Elevated floors shall also be labeled when necessary indicating their load capacities.

1.1 Lumber Storage

Lumber shall be stacked on solid, level sills. Cross-strips or cross-pilings shall be used where the pile is more than 4 feet high. The top of each pile shall be kept as level as possible when lumber is being removed. Used lumber shall have nails removed before it is piled. Two workers shall carry long boards, and care should be exercised at corners and crosswalks.

1.2 Steel Storage

Reinforcing steel shall be stored in separate piles according to size and length. Corrugated and sheet steel shall be stacked in flat piles. Spacing strips shall be placed between each bundle.

1.3 Pipe Storage

Pipe shall be stored on pipe sills or racks and shall be blocked to prevent rolling. When removing pipe, employees shall work from the end of the pile as much as possible. Pipe larger than 2 feet in diameter should be handled using mechanical equipment. Two workers should carry long lengths of pipe, and care shall be exercised at corners.

SITE MATERIALS STORAGE AND HANDLING

1.4 Material Handling

1. Supervisors shall give advance consideration to the size, shape, and weight of materials to be handled and plan the most efficient and safest method to accomplish the task. Proper tools shall be provided for the job, and alternate methods should be considered.
2. Supervisors shall ensure that the work fits the employee in terms of knowledge and physical abilities. When unusual or hazardous operations are required, before beginning the work, supervisors shall evaluate the task and the potential hazards and ensure employees are properly prepared.

1.5 Cantilever Landing Platform

1. All landing platforms shall be designed and constructed according to a certified Professional Engineer's (P.E.) drawings.
2. No modifications shall be made without approval of the Equipment Supervisor and Safety dept.
3. Landing platforms shall be re-certified annually by an officially recognized third-party inspector.
4. Lower and upper floor shoring shall be in accordance with drawings prepared by a certified P.E.
5. Upright supports shall not be extended past their limit without P.E. approval.
6. Workers shall not access the cantilevered portion of the platform without proper fall protection.
7. Whenever the outboard edge chains/guards are removed for material access, the platform shall be monitored or guarded.

1.6 Safe Practices – Loading and Off Loading

Because proper storage and material handling procedures help conserve materials and equipment, increase productivity by providing a smooth flow of materials when needed, and reduce the number of accidents and injuries usually associated with this function, the following practices shall be followed:

1. All trucks and trucks with trailers must be chocked and blocked during loading and unloading.
2. Delivery drivers shall wear required PPE which includes appropriate foot wear and clothing or not exit the cab of their truck.
3. Ensure that only properly trained personnel are used to handle hazardous materials.
4. Report any unsafe condition or practice that cannot be corrected immediately.
5. Elevated and overhead storage areas above occupied spaces or work areas shall be labeled with maximum capacities.



SITE MATERIALS STORAGE AND HANDLING

6. All cranes and forklifts used in loading or unloading operations shall be properly equipped and all operators appropriately trained and certified.

REFERENCES

Title 29 CFR 1910.176 – Handling Materials, General
Title 29 CFR 1926.250 – General Requirements for Storage
Title 29 CFR 1926.251 – Rigging Equipment for Material Handling
Title 29 CFR 1926.953 – Material Handling

SITE SANITATION

PURPOSE

To provide established requirements for providing adequate sanitary facilities and potable water on job sites.

REQUIREMENTS

1.0 Potable Water

- a. An adequate supply of potable water shall be provided in all places of employment in accordance with 29 CFR 1926.51.
- b. The individual assigned to the task of cleaning the drinking water containers shall wash his/her hands with soap and water and put on disposable or rubber gloves.

1.1 Non-potable Water

- a. Outlets for nonpotable water, such as water for industrial or firefighting purposes only, shall be identified by signs to indicate clearly that the water is unsafe and is not to be used for drinking, washing or cooking purposes.
- b. There shall be no cross-connection, open or potential, between a system furnishing potable water and a system furnishing nonpotable water.

1.2 Toilets at construction jobsites

- a. Toilets shall be provided for employees according to 29 CFR 1926.51 Table D-1, which states a minimum of 1 toilet for 20 workers, with a greater number of units as the work force increases.

1.3 Washing facilities

- a. Washing facilities shall be made available as required by state and local laws and if the jobsite tasks require.

1.4 Eating, drinking and break areas

- a. All employees shall be given an opportunity to eat their meals in an area free from dust, dirt, excessive noise and work hazards. Employees shall be not allowed to consume food or beverages in a toilet room nor in any area exposed to toxic or hazardous materials.

1.5 Vermin Control

- a. Every enclosed workplace shall be so constructed, equipped, and maintained so far as reasonable to prevent the entrance or harboring of rodents, insects, and other vermin. A continuous, effective extermination program shall be instituted where their presence is detected.

SITE SANITATION

1.6 Change rooms

- a. Whenever employees are required by a particular standard to wear protective clothing because of the possibility of contamination with toxic materials, change rooms equipped with storage facilities for street clothes and separate storage facilities for the protective clothing shall be provided when feasible. All protective clothing that has been exposed to toxic materials will be properly disposed of according to applicable federal, state and local regulations or cleaned by an approved outsourced vendor.

REFERENCES

Title 29 CFR 1910.141 - Sanitation

Title 29 CFR 1926.51 - Sanitation

18/01/2014

STEEL ERECTION

PURPOSE

To establish minimum requirements for the safe erection of structural steel on all projects.

REQUIREMENTS

1.0 PLANNING REQUIREMENTS

The Project Manager along with the Project Safety Manager, Structural Superintendent and Steel Erection Foreman shall develop a site JHA to assess and address specific and foreseeable hazards associated with structural steel erection. Work methods shall be established to ensure the safety of the employees performing steel erection as well as others adjacent to the affected area. As a minimum, a site erection plan shall detail provisions necessary to accomplish the following objectives:

1. Assess and secure the surrounding affected area, structures, process equipment, etc. prior to swinging suspended loads over the area.
2. Locate both overhead and underground piping or utilities that could be contacted or affected by the steel erection activity. Provisions shall be established to ensure utilities, pipelines or process equipment are not affected.
3. Routing of personnel, equipment and vehicular traffic around the affected area.
4. Pre-job planning, including rigging and lifting plans.
5. Personal protective equipment including fall protection systems that will be used.

1.1 GENERAL REQUIREMENTS

1. Proper planning shall include the timely delivery and installation of the permanent guardrail system.
2. The Project Manager and the site Project Safety Manager shall examine the need for wire rope guardrails and approve the design of the system. The use of wire rope guardrails shall meet the following requirements:
 - a. Only 1/4" diameter wire rope or larger shall be used.
 - b. The top rails shall be 42 inches above the platform, plus or minus three inches. No more than three (3) inches of sag is allowed in the top or mid rails
 - c. A toe board shall be placed. The toeboard shall not be more than 1/4" above the platform and shall be a minimum of 1" x 4" nominal lumber.
 - d. Midrails shall be placed at 21".
 - e. The wire rope shall be flagged every six (6) feet or less with highly visible material.
 - f. The guardrail system shall support without failure a force of 200 pounds in either a downward or outward direction.
3. A tag line of proper length shall be used on all crane loads, unless such use would create a hazard.
4. Employees shall never stand on, ride, work or stand under a "live load" at any time. A live load is any load that is suspended in air, at any elevation, by any means such as cranes, forklifts, winches, hydraulic lifts, comealongs or any other temporary lifting devices.

STEEL ERECTION

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5. Prior to setting steel, the steel erection contractor shall be notified in writing that concrete footings, piers or walls have achieved 75% of design strength.
6. Any anchor bolt repairs or modifications shall be approved by the project structural engineer of record and written notification provided to the steel erector.
7. When setting columns, before unhooking the column from the lifting device, four nuts on the anchor bolts shall be drawn down tight. Temporary guy lines shall be secured if additional support is necessary.
8. Areas below structural steel erection shall be barricaded and signs indicating overhead work shall be posted.
9. Containers shall be provided to insure proper storage for bolts, drift pins and other loose objects. These containers shall be secure against accidental movement and shall be removed to a permanent level at the end of the shift.
10. Two (2) employees shall operate drilling and reaming machines, unless the handle is firmly secured to resist the torque reaction of the machine if the bit would stick.
11. Magnetic drills shall be secured (tethered) to the structure to prevent dropping in the case of a power failure.

1.2 FLOORING REQUIREMENTS, PERMANENT

1. Permanent flooring shall be installed as the erection of structural members progresses. There shall be no more than eight stories between erection floor and the uppermost permanent floor, except where the structural integrity is maintained as a result of the design.
2. Floors must be planked or decked within 2 stories or 30 feet of overhead erection activities even if workers are utilizing 100% fall protection.
3. At no time shall there be more than four floors or 48 feet of unfinished bolting or welding above the foundation or uppermost permanent secured floor.

1.3 FLOORING REQUIREMENTS, TEMPORARY

1. Temporary flooring such as the derrick or erection floor of every building shall be solidly planked or decked over its entire surface except for access openings. Planking, or decking of equivalent strength, shall be thick enough to carry the working load. Planking shall be no less than 2 inches thick, full-sized undressed, and shall be laid tightly and secured to prevent movement.
2. On buildings or structures not adaptable to temporary floors and where scaffold are not used, safety nets shall be installed and maintained whenever the potential fall distance exceeds 25 feet. Nets shall be hung with sufficient clearance to prevent falling objects from contacting structural surface below.
3. Floor periphery-safety railing: A standard railing including midrail and toe boards shall be installed 42 inches high at the periphery (including all floor openings) of all temporary-planked or temporary metal-decked floors of tier buildings and other multi-floored structures during structural steel assembly.

STEEL ERECTION

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4. Where skeleton steel erection is in progress, a substantial tightly planked floor shall be maintained within two stories or 30 feet, whichever is less, below and directly under that portion of each tier of beams on which work is being done, except when gathering and stacking temporary floor planks on a lower floor in preparation for transferring such planks for use on an upper floor.
5. When gathering and stacking temporary floor planks, the planks shall be removed successively, working towards the last panel of the temporary floor so that work is always done from the planked floor.
6. In erecting a building having double-wood-floor construction, the rough flooring shall be completed as the building progresses, including the tier below the one on which floor joist are being installed.
7. For single-wood-floor or other flooring systems, the floor immediately below the story where the floor joist are being installed shall be kept planked or decked over.

1.4 SPECIFICATIONS

Specifications for the size, dimensions and placement of the structural steel and flooring requirements shall be provided by the client or a registered professional engineer in accordance with both federal and local standards. These specifications along with the availability of storage and laydown facilities will dictate the delivery and site erection sequence of the structural steel members.

1.5 FALL PROTECTION

100 % Fall protection will be implemented when working at elevated heights greater than 6ft.

1.6 ACCESSING THE STRUCTURAL STEEL

1. Access to the steel shall be part of the steel erection plan. The permanent access stairs shall be placed, with a guardrail system, as the structural steel is placed. In areas that do not have permanent stairs, temporary stairs may be used, e.g., scaffold stair towers. The temporary stairs shall have a guardrail system placed. If stairs are not possible, ladders with self-retracting lifelines or articulating boom lifts (JLGs, snorkel lifts, etc.) may be used for employees to access the structural steel.
2. Workers are never allowed to climb the columns of structural steel. Access to all work shall be by approved methods such as ladders, lifts, stairways or other approved means.

REFERENCES

Title 29 CFR 1926.750

4

TRANSPORTING PERSONNEL

PURPOSE

To establish minimum requirements for the safe transport of personnel in vehicles.

REQUIREMENTS

1.0 Equipment Inspection

Vehicles that transport personnel shall be inspected as follows:

1. An initial inspection shall be done before a new vehicle is placed in service.
2. Daily pre-use inspections shall be conducted by the vehicle operator.
3. State safety inspections shall be conducted at the state required interval.

1.1 Operator Qualifications

Vehicles used to transport personnel shall only be operated by a qualified, licensed, where necessary operator. The operator of a vehicle used to transport personnel must be familiar with the contents of this procedure, possess a vehicle operator's license valid for use on public roadways, and meet any additional site or governmental requirements.

1.2 Equipment Requirements

Equipment used to transport personnel must have the following safety features as a minimum:

1. Vehicles shall not be loaded in excess of capacity as designed by the manufacturer. A seat and seat belt/harness shall be available for each passenger.
2. The vehicle must have a safe means of access and egress. Methods include, but are not limited to, steps and ladders.
3. The vehicle must have functional stop, tail, and turn signal lights and must have an adequate, audible warning device when backing.

1.3 Operating Requirements

When operating vehicles on site or on public roadways, always obey all site rules and all applicable laws. Before operating any equipment on public roadways, make sure it meets the requirements of local governing body. Always observe posted speed limits.

1.4 Passenger Requirements

When riding in vehicles or transporters, passengers and drivers must observe the following safety precautions:

1. Use proper method of access and egress.
2. Always keep torsos and extremities within the confines of vehicles.
3. No one is allowed to ride in or on any vehicle unless an approved seatbelt is available for each person and is properly fastened at all times that the vehicle is in motion.

TRANSPORTING PERSONNEL

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No one is allowed to ride in or on any vehicle unless an approved seatbelt is available for each person and is properly fastened at all times that the vehicle is in motion.

1.5 Transporting Personnel with Materials or Equipment

When purchasing, designing and using vehicles or transporters, ensure that personnel are not transported in the same compartment with materials or equipment.

1. No one is allowed to ride in or on any vehicle unless an approved seatbelt is available for each person and is properly fastened at all times that the vehicle is in motion.
2. Sletten personnel being transported to/from Sletten projects in the bed of pickup trucks shall not be permitted.
3. The proper method of transporting personnel in any vehicle is with all employees seated inside the vehicle. The vehicle must be designed to carry passengers and passenger vehicles shall not be put into motion until all passengers are securely seated, with seat belts secured..

1.6 Alternate means of transportation

Bicycles and other special forms of transporting personnel require site procedures that address safe operation, inspection, and maintenance.

REFERENCES

Title 29 CFR 1926.600

TUNNELING, CAISSONS AND COFFERDAMS

PURPOSE

To provide established minimum requirements for employees building and working in tunnels, caissons, and cofferdams.

REQUIREMENTS

1.0

GENERAL REQUIREMENTS:

The project shall have a written procedure outlining the following procedures for tunnels, caissons, and cofferdams:

1. Safe means of access and egress to protect employees in all work areas. The safe means of access and egress shall protect employees from being struck by excavators, hauling machines, trains, and other mobile equipment. No employees, other than equipment operators operating their equipment, shall be allowed in tunnels during mucking operations.
2. Check-in \ Checkout (Sign in /Sign out) shall be established to ensure an accurate count of personnel in the event of an emergency.
3. Employees shall be orientated in the following safety procedures:
 - a. Air Monitoring
 - b. Ventilation
 - c. Illumination
 - d. Communications
 - e. Flood Control
 - f. Mechanical Equipment
 - g. Personnel Protective Equipment (PPE)
 - h. Explosives
 - i. Fire Prevention
 - j. Emergency Procedures
4. Oncoming shifts shall be informed of any hazardous occurrences or conditions that have affected or might affect employee safety.
5. Continuous and uninterrupted communications shall be maintained between the workforce from the surface to all portions of the underground work.
6. If the shaft is used for access and egress emergency hoisting capabilities shall be readily available.
7. Self-rescuers (respirators – scat packs) shall be immediately available to all employees at workstations in underground areas where employees might be trapped by smoke or gas.
8. Rescue Team(s) need to fit the needs and requirements of the site/facility and government requirements.
9. At least one designated person shall be on duty above ground whenever any employee is working underground. The designated person shall be responsible for securing immediate aid and keep an accurate count of employees underground in case of an emergency.

TUNNELING, CAISSONS AND COFFERDAMS

Page 2 of 3

10. Each employee underground shall have an acceptable cap lamp on for emergency use or an emergency lighting system that provides adequate illumination for escape.
11. Hazard classification: Gassy operations 10% LEL for methane or other explosive gas.
12. The project shall perform air quality and monitoring check for LEL, O₂ deficiencies, and other air quality issues.
13. Ventilation of fresh air shall be supplied to all underground work areas in sufficient quantities to prevent dangerous or harmful accumulations of dust, fumes, mist, vapors, and gases.
14. Illumination shall conform to table D-3 of Title 29 CFR 1926.56.
15. Fire prevention welding, cutting, hot work and control measures shall conform to Title 29 CFR 1926.800, 29 CFR 1926.150, 29 CFR 1926.150, 29 CFR 1926.350 and 29 CFR 1926.400.
16. Ground support:
 - a. Portal Areas: Shoring, fencing, head walls, shotcreting or other equivalent means shall protect portal areas.
 - b. Subsidence areas: The project shall ensure ground stability in subsidence areas by shoring, or erecting barricades in hazardous areas.
 - c. Underground areas shall be inspected by a competent person for the following:
 1. Ground conditions along haulageways and travelways to ensure safe passage of employees and equipment
 2. Rock bolts for proper torque
 3. Support nets to ensure proper tension
17. Blasting will conform to Title 29 CFR 1926.800 & 29 CFR 1926.912.
18. Drilling rigs associated drilling equipment and Jumbo decks shall be inspected prior to use each shift. All government requirements and company requirements shall be adhered to for inspection, fall protection, etc.
19. Hauling equipment such as power mobile haulers, employee transportation equipment, and material hauling shall be inspected each shift. Employees shall only ride equipment that is equipped for personnel transportation.
20. Electric power lines shall be insulated and located away from water lines, telephone lines, airlines, or other conductive materials. Lighting circuits shall be located so that personnel or equipment

TUNNELING, CAISSONS AND COFFERDAMS

Page 3 of 3

movement shall not damage the circuits or disrupt service. All other requirements shall comply with Title 29 CFR 1926, Subpart K.

21. Hoisting of personnel and material shall conform to Title 29 CFR 1926.800.

REFERENCES

Title 29 CFR 1926.20
Title 29 CFR 1926.50
Title 29 CFR 1926.95
Title 29 CFR 1926.400
Title 29 CFR 1926.900

**WEIDING, CUTTING AND
HEATING**

WELDING, CUTTING & HEATING

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Purpose

To establish minimum safety requirements for all welding, burning, flame cutting, metal grinding and material heating activities.

REQUIREMENTS

1.0 GENERAL REQUIREMENTS

1. Firefighting equipment shall be in good working condition and located within 15' of all welding, burning, cutting activities.
2. All flammable and combustible materials shall be removed or covered by fire resistant material before starting to weld or burn.
3. Fire-watches are required for all welding, cutting, grinding and heating operations that occur in proximity to:
 - a. Occupied facilities
 - b. Flammable or combustible materials
 - c. Confined spaces
 - d. Work above multiple exposed levels
 - e. Anytime a hazard analysis requires
4. All Fire-watch personnel shall have training as a firewatch and be fully trained in the fire-extinguishing equipment provided. The firewatch shall be familiar with all emergency response equipment necessary in the event of a fire and includes alarms, emergency notification and evacuation procedures. They shall watch for fires in all exposed and adjacent areas and try to extinguish and fire that is within the capacity of the equipment available, or otherwise sound the alarm. A fire watch shall be maintained for at least a half-hour after completion of welding or cutting operations to detect and extinguish possible smoldering fires. Firewatchers may have to be on different levels and possibly in other rooms depending on the configuration of the building.
5. The welder shall wear proper personal protective equipment as required, i.e.
 - a. long sleeve shirts
 - b. cutting goggles/welding hood
 - c. gloves/aprons/capes
 - d. clothing without frays or rips
 - e. hard hats
 - f. respirators
 - g. etc.
6. Welding curtains, drop cloths, and other materials used to protect people, products, materials, or equipment shall be made of flame-resistant cloth. Polyethylene or other plastic welding curtains and drop cloths shall be made of flame-resistant materials and shall have a flame spread classification of

WELDING, CUTTING & HEATING

0-25 rating. Examples of flame-resistant fabrics include Nomex®, Kevlar®, and flame-retardant treated (FRT) cotton.

7. Whenever practicable, welding curtains shall be used during welding and grinding operations to limit the exposure of others to welding flash or sparks, and may be required in operating areas. Use translucent, flame-resistant welding curtains that filter ultraviolet radiation. They provide sufficient protection while permitting adequate light to the work area.
8. When welding indoors, efforts must be made to eliminate hazardous fumes from building up.
9. As necessary, each site shall develop a written procedure for hot work permits based on site conditions. The procedure should meet the following requirements.
 - a. Define responsibilities to ensure safe-working conditions for all employees involved.
 - b. Establish requirements for completing, distributing, posting, and retaining permits.
 - c. Define permit time and boundary limitations.
 - d. Establish requirements for fire watch.
 - e. Establish requirements for spark & slag containment.
 - f. Fire fighting training for fire watch and person(s) involved in hot work activities.
10. If a hot work permit is required by site management, work shall not commence in any area prior to permit completion and authorization. An authorized flame/hot work permit may be required when work involves flames, sparks, or high temperature producing tools or equipment. Such equipment may include internal combustion engines, electrical tools, motors, and any spark-producing device. See Hot Work Permit.

1.1 Arc Welding and Cutting

1. Connect welding leads to the welding machine by a male plug. Ensure that the female portion of the connector is the energized part of the set.
2. Turn off welding machine while pulling leads to a new location and in some cases until the welder is in position to make a weld. (In cases where the welder shall lie/lean on a grounded surface to perform a welding task, another person should start the machine when the welder is ready to strike an arc and begin the task.)
3. Do not support welding leads with tie wire. This practice damages the welding lead insulation. Support leads with nonconductive materials or insulated wire. Install welding leads so that they are not potential tripping hazards.
4. Eliminate the possibility of partially exposing a connection while pulling the leads. Male and female connectors of welding leads may need to be taped or otherwise restrained from separating. Welding leads should not be tied in a knot.
5. Remove the rod from the holder when unattended.

WELDING, CUTTING & HEATING

6. Do not weld on material or equipment suspended by a metallic support mechanism (choker, chain fall, and load line). This undesirable because of the possibility of damage to the choker or the load line. When such an operation is required, the support shall include an insulating element to eliminate the possibility of welding current flowing through the support.

NOTE: *Pipelines and equipment containing flammable or combustible materials shall not be a part of the welding path.*

7. **Portable Welding Machines**
 - a. A driven ground rod or case ground to building steel is not required for mechanically driven welding machines.
 - b. When a portable welding machine includes a receptacle for convenience power, the receptacle shall be guarded with a ground fault circuit interrupter (GFCI) if the voltage is alternating current. If the voltage is direct current, the receptacle should be disabled and not be used.
8. Welders shall wear the head and eye protection required in their work area. They shall wear appropriate welding helmets, long-sleeve shirts, leathers and welders gloves. If grinding or chipping is done, a face shield shall be worn. If respirators are required, these also shall be used.
9. At a minimum, employees that are working with welders shall wear long-sleeve shirts, and appropriately tinted glasses with side shields or welding eye goggles.

1.2 Equipment and Inspection

1. Arc-welding and cutting equipment shall be industrial rated, in good condition, and meet local governing authority requirements regarding application, installation, and operation. Trained and qualified people shall make a complete preventive maintenance inspection.
2. Inspect welding leads prior to use to ensure that the insulation is not damaged and that the conductor is not exposed. Repair or discard damaged leads.

NOTE: *It is not permissible to repair by splice or tape a damage that is within 10 ft. of the end of a lead, however the lead may be cut and re-terminated to the connector.*

3. Before each use, the following items shall also be inspected:
 - a. Electrode holders for broken insulators or worn holders
 - b. Oil and fuels on gas- or diesel-powered units
 - c. Covers are in place where leads attach to welding machines
 - d. All connections have no exposed current-carrying parts

1.3 Electric Shock Hazard

WELDING, CUTTING & HEATING

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1. Almost all electric currents present some degree of potential shock hazard. Under optimum conditions, even welding voltages as low as 30 volts can be hazardous. Operating voltages listed on nameplates are usually much lower than open-circuit voltages, which should not exceed 100 volts DC or 80 volts AC
2. Either AC or DC current can be used for welding, and, although both present serious shock hazard, AC is potentially more hazardous. Be certain not to use any equipment that is either wet or has been recently drenched. Welding units that are powered by AC shall be adequately grounded. To change polarity, the unit shall be shut down.
3. Electrodes shall never be changed with bare hands or wet gloves or when standing on a wet floor or grounded surface. Cables that become worn enough to present a hazard shall be replaced immediately. Keep welding cables away from power supply cables and high voltage wires. Do not dip hot electrode holders in water to quick cool them.
4. GFCIs shall not be used on welding machines with DC current outlets for cord plugs. They do not function properly in this application.

1.4 Inert and Toxic Gas Exposure

Many welding procedures require an inert gas, such as argon and/or helium. These gases present an asphyxiation hazard. Welders and fitters need to keep these points in mind:

1. Inert gases are odorless and colorless. They can only be detected by monitoring with the proper detection meters.
2. Large-diameter pipes contain larger volumes of inert gas and greater potential for problems. Removing the gas containment quickly will release the gas into the immediate area.

1.5 Ventilation Requirements

1. Welding, Cutting and Heating In Enclosed Spaces

General mechanical or local exhaust ventilation shall be provided whenever welding, cutting, or heating is performed in areas with inadequate ventilation and in enclosed spaces. The ventilation shall be of sufficient capacity and so arranged as to produce the number of air changes necessary to maintain welding fumes and smoke within safe limits. (Levels below OSHA PELs and/or TLV's will be considered to be "safe limits" as described above. In some cases OSHA Action Levels, excursion limits and STELs may be substituted as "safe limits"). The adequacy of the ventilation shall be determined by air monitoring.

- a. When sufficient ventilation, as described above, cannot be obtained, the employees shall be protected by appropriate respiratory protection.
- b. Oxygen shall never be used to ventilate an area.

WELDING, CUTTING & HEATING

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- c. Employees performing welding and/or cutting operations on the materials listed below in enclosed spaces shall use local exhaust ventilation or the employees will be protected with airline respirators. Airline respirators shall also protect other employees working in the immediate area.
 1. Lead base metals or materials coated with lead-bearing materials
 2. cadmium bearing or cadmium coated materials
 3. Metals coated with mercury-bearing materials
 4. Beryllium-containing base or filler metals (because of its high toxicity, work involving beryllium shall be done with both local exhaust ventilation and air-supplied respirators).
2. Welding, cutting, and heating in open air (areas with adequate ventilation)

Employees performing welding and/or cutting operations on the materials listed below in the open air shall be protected by air-purifying respirators (filter type). Air-purifying respirators shall also protect other employees working in the immediate area.

 - a. Lead base metals or materials coated with lead-bearing materials
 - b. Cadmium bearing filler materials
 - c. Chromium bearing metals or metals coated with chromium-bearing materials.
 - d. Metals coated with mercury-bearing materials
 - e. Beryllium-containing base or filler metals (Because of its high toxicity, work involving beryllium shall be done with both local exhaust ventilation and air-supplied respirators).
3. Inert-gas metal arc welding
 - a. The use of chlorinated solvents (example: Tap-free) shall be kept at least 200 feet away from any inert-gas metal arc welding unless shielded from the exposed arc.
 - b. Surfaces prepared with chlorinated solvents shall be thoroughly dry before welding is permitted on such surfaces.
 - c. Welders and other employees who are exposed to welding flash shall be protected so that skin is covered completely to prevent burns and other exposure to ultraviolet radiation.
 - d. When inert-gas metal-arc welding is performed on stainless steel, either local ventilation or air-supplied respirators shall be utilized. The local ventilation shall be of sufficient capacity and so arranged as to maintain nitrogen dioxide levels at or below the current TLV for nitrogen dioxide (3ppm).
4. Welding, cutting and heating - paints and coatings

WELDING, CUTTING & HEATING

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- a. Before welding, cutting or heating any surface covered by a coating whose flammability is not known, a test shall be made by a competent person to determine its flammability. Coatings shall be considered to be highly flammable when scrapings burn rapidly.
- b. When coatings are determined to be flammable, they shall be stripped from the area to be heated/burned/welded to prevent ignition (a minimum of 4 inches to each side of the location heated).
- c. When coatings are determined to be toxic, the coating shall be stripped at least 4 inches from the area of heat application, or the employees shall be protected with appropriate respiratory protection. Half-mask cartridge respirators equipped with HEPA filters are the minimum acceptable respiratory protection that can be used when welding on surfaces with toxic coatings.
- d. When working in enclosed spaces on surfaces covered with toxic preservatives (i.e. lead, cadmium or zinc chromate paints, etc.), the coating shall be stripped at least 4 inches from the area of heat application. If this is not possible, the employees in the enclosed space shall be protected by air-supplied respirators.
- e. When working in enclosed spaces on surfaces covered with coatings that have been determined to be other than toxic, the coatings shall be removed a sufficient distance from the area that is to be heated to ensure that the temperature of the un-stripped metal will not be appreciably raised. Artificial cooling of the metal surrounding the heated area may be used to limit the size of the area required to be stripped.

REFERENCE

Title 29 CFR 1926.350
Title 29 CFR 1926.351
Title 29 CFR 1926.352
Title 29 CFR 1926.353
Title 29 CFR 1926.354

APPENDIX 3.A.19 - FORMS

HOT WORK PERMIT

HOT WORK PERMIT



CONTRACTOR _____ DATE _____

PERSON REQUESTING _____ TITLE _____

WORK TO BEGIN _____ WORK TO END _____
(Date/Time) (Date/Time)

WORK LOCATION _____

WORK DESCRIPTION (Be Specific) _____

- Oxy/Acetylene/LP Gas Welding Other Torch Solder Grinding Cutoff Saw
 Other

PERSON(S) PERFORMING WORK _____
Contact Telephone Number _____

SAFETY PRECAUTIONS

- | | |
|--|--|
| <input type="checkbox"/> *Perform Explosibility Check (_____ %) | <input type="checkbox"/> Barricade Area |
| <input type="checkbox"/> *Oxygen Content (_____ %) | <input type="checkbox"/> Post Signs |
| <input type="checkbox"/> Clear Area of Flammable and Combustible Materials | <input type="checkbox"/> Ground Equipment |
| <input type="checkbox"/> Use Trained Fire Watch/during and 30 minutes after the work | |
| <input type="checkbox"/> Cover Drains/Trenches, etc. | |
| <input type="checkbox"/> Provide Fire Extinguisher (Type _____)(Size _____) | <input type="checkbox"/> Contain Sparks/Slag, etc. |
| <input type="checkbox"/> Provide Water
Work | <input type="checkbox"/> Place Shield/Blankets Under/ Around |
| <input type="checkbox"/> Keep Area Wet | <input type="checkbox"/> *Use Respiratory Protection |
| <input type="checkbox"/> *Ensure Adequate Ventilation | <input type="checkbox"/> Use Nonsparking Tools |
| <input type="checkbox"/> Purge System | <input type="checkbox"/> Wear Special Clothing |
| <input type="checkbox"/> Restrict Tools | |

*For confined space activities comply with Confined Space procedures before proceeding. This permit alone is not authorization to proceed with confined space work

Subcontractor Superintendent _____
Signature

Sletten Superintendent or Site Safety Manager _____
Signature

WORKING OVER OR NEAR
WATER

WORKING OVER OR NEAR WATER

Page 1 of 1

PURPOSE

To provide established requirements that insure Sletten employees are protected from hazards associated with working over or near water.

REQUIREMENTS

1.0 GENERAL REQUIREMENTS

Site management shall conduct a JHA that details how employees will be protected from recognized or foreseeable hazards while engaged in activities that require them to work over or near water. The JHA shall address the following elements:

1. The use of personal flotation devices. When employees work on barges, floating pipelines or plants, or structures that extend over water and are not protected by standard handrails, they shall wear U.S. Coast Guard approved flotation vests.
2. Fall Protection including fall arresting devices, fall restraint devices, safety nets or lifelines as appropriate.
3. Working in an isolated setting – work shall be monitored so at least one person is capable of initiating the rescue plan. Methods shall be established to allow prompt notification of rescue services in the event of an emergency.
4. Rescue Plan – shall indicate equipment, methods and persons involved in rescue operations.
5. Water Rescue equipment such as:
 - a. Ring buoys with at least 90' of rope placed less than 200' from the work area.
 - b. Rescue boat or lifesaving skiff immediately available when working over or adjacent to water.
 - c. Self rescue or egress out of the water to dock, barge or boat shall be provided.
6. Transportation of an injured or drowning victim to a treatment facility shall be part of the rescue plan.
7. Training requirements:
 - a. Training shall cover the elements of the JHA. Employees shall be trained prior to being assigned activities that require them to work over or near water.
 - b. Retraining shall be conducted when work conditions or procedures change or when the employees' performance indicates the need for retraining.

REFERENCES

Section III.A.8 – Fall Protection
Title 29 CFR 1926.502
Title 29 CFR 1926.106
Title 29 CFR 1926.400 et al.

Sletten Companies

Safety Related Programs, Plans and Documentation

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General Use
- 13 Steel Erect Catenary Line Installation
Steel Erection and Offloading Material

14 Working from Elevated Surfaces

JOB HAZARD ANALYSIS FORM

JOB TASK: <p style="text-align: center;">Aerial Lift Operation</p>		DATE: <p style="text-align: center;">10/23/14</p>
TITLE OF PERSON WHO DOES JOB:	SUPERVISOR:	ANALYSIS BY: <p style="text-align: center;">Lenore DiStefano</p>
DEPARTMENT:	SECTION:	REVIEWED BY:
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT: <p>Hard Hats, Safety Glasses, Work Boots, High Visibility Vest/Shirt, and other safety equipment as required, Harness, Lanyard</p>		APPROVED BY:
SEQUENCE OF BASIC JOB STEPS <i>Beware of being too detailed, record only the information needed to describe each job action. Rule of thumb, no more than 10 steps/task being evaluated</i>	POTENTIAL ACCIDENTS OR HAZARDS <i>HAZARD CLASSIFICATION CATEGORIES: Stuck By/Against, Caught In/Between, Slip, Trip, or Fall, Overexertion, Ergonomic (Awkward Postures, Excessive Force, Vibration, Repetitive Motion)</i>	RECOMMENDED SAFE JOB PROCEDURE <i>HAZARD CONTROL CATEGORIES: Engineer Out (New Way to Do, Change Physical Conditions or Work Procedures, Adjust/Modify/Replace Work Station Components/Tools, Decrease Performance Frequency), Personal Protective Equipment (PPE), Training, Improve Housekeeping</i>
Aerial Lift Operations	Falling from aerial lifts	A full body harness with lanyard shall be worn by all persons in the platform or bucket. The Lanyard shall be attached to the platform rated tie-off point. EXCEPTION: Scissor lifts with railing 360 degrees around the deck, and the manufacturer does not require tie-off.
	Mechanical failure of lift	The manufacturers recommended inspections shall be completed by the operator each day before the use of the machine. The lifts shall not be modified or used for other purposes unless written approval is obtained from the manufacturer Load limits set by the manufacturer shall not be exceeded.
	Aerial lift tipping over	Only trained personnel shall operate the aerial lifts. Work shall not be performed from lifts in winds greater than 20mph or the manufacturer's recommendations. Aerial lifts shall be operated on a firm, level surface The platform shall be in its lowest position and centered over the rear axle during travel. The boom platform shall not rest on a support for stability.

JOB HAZARD ANALYSIS FORM

AIR COMPRESSORS - GENERAL USE MAKE TAB !!!

JOB HAZARD ANALYSIS FORM

JOB TASK: <p style="text-align: center;">AIR COMPRESSOR – GENERAL USE</p>		DATE:
TITLE OF PERSON WHO DOES JOB: <p style="text-align: center;">Field Crew, Laborer, Other</p>	SUPERVISOR:	ANALYSIS BY:
COMPANY NAME: <p style="text-align: center;">SLETTEN COMPANIES</p>	TOOLS: <p style="text-align: center;">Air Compressor</p>	REVIEWED BY:
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT:		
SEQUENCE OF BASIC JOB STEPS <i>Beware of being too detailed, record only the information needed to describe each job action. Rule of thumb, no more than 10 steps/task being evaluated</i>	POTENTIAL ACCIDENTS OR HAZARDS <i>HAZARD CLASSIFICATION CATEGORIES: Stuck By/Against, Caught In/Between, Slip, Trip, or Fall, Overexertion, Ergonomic (Awkward Postures, Excessive Force, Vibration, Repetitive Motion)</i>	RECOMMENDED SAFE JOB PROCEDURE <i>HAZARD CONTROL CATEGORIES: Engineer Out (New Way to Do, Change Physical Conditions or Work Procedures, Adjust/Modify/Replace Work Station Components/Tools, Decrease Performance Frequency), Personal Protective Equipment (PPE), Training, Improve Housekeeping</i>
Inhalation	Dust/particles generated during machine operation	Appropriate natural ventilation, disposable respirators, automatic vacuum machine
Eye Injury	Projectiles	Safety glasses with side shield or appropriate safety goggles/face shield
Trauma	Projectiles, rotating parts, point of operation, ingoing nip joints, flying chips & sparks	Situational awareness, PPE, protective clothing, machine guards
Foot Injury	Drop objects on foot	Foot Protection/Boots – no tennis shoes
Hand Injury	Point of Operation, ingoing nip points, rotating parts, flying chips and sparks	Machine guards, situational awareness
Head Protection	Projectiles	Hard Hat and Face Shield
Fire	Heat, sparks	Appropriately placed fire extinguisher, remove all flammables, combustible and fire hazards from area
Electrical Shock	Improper grounding, improper operations and maintenance	Lock out/Tag out, proper grounding of frame, manufacturer's instructions strictly followed
Routine Operation	Noise Eye Injury from Blowing Debris	Use hearing protection Use safety glasses w/side shields or goggles

JOB HAZARD ANALYSIS FORM

JOB TASK: <p style="text-align: center;">Concrete Work</p>		DATE: <p style="text-align: center;">10/01/2014</p>
TITLE OF PERSON WHO DOES JOB:	SUPERVISOR:	ANALYSIS BY: <p style="text-align: center;">Lenore DiStefano</p>
DEPARTMENT:	SECTION:	REVIEWED BY:
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT: <p style="text-align: center;">Hard Hat, Safety Glasses, High Visibility Vest/Shirt, Work Boots and other safety equipment as required</p>		APPROVED BY:
SEQUENCE OF BASIC JOB STEPS <i>Beware of being too detailed, record only the information needed to describe each job action. Rule of thumb, no more than 10 steps/task being evaluated</i>	POTENTIAL ACCIDENTS OR HAZARDS <i>HAZARD CLASSIFICATION CATEGORIES: Stuck By/Against, Caught In/Between, Slip, Trip, or Fall, Overexertion, Ergonomic (Awkward Postures, Excessive Force, Vibration, Repetitive Motion)</i>	RECOMMENDED SAFE JOB PROCEDURE <i>HAZARD CONTROL CATEGORIES: Engineer Out (New Way to Do, Change Physical Conditions or Work Procedures, Adjust/Modify/Replace Work Station Components/Tools, Decrease Performance Frequency), Personal Protective Equipment (PPE), Training, Improve Housekeeping</i>
Concrete Work	Fall Hazards to personnel while performing formwork greater than 6 foot off the ground	Use of harnesses and tie-offs. Guardrails and/or perimeter cables on open sided floors.
	Falling rebar columns or forms while setting	Columns/forms will be properly secured prior to release from crane. Workers shall not attach personal fall protection devices to columns unless column/form is adequately secured.
	Leading edge exposure while assembling scaffold for deck shoring	Harnesses and tie-offs to retractable lanyards or catenary lines. Guardrails and /or perimeter cables on open sides
	Fall Hazards while working on gang forms	Harnesses and tie-offs to retractable lanyards
	Fall Hazard while working on outside of shear wall	Platforms with guardrails on outside of form
	Exposed rebar ends	Where workers are exposed to ends of rebar; Orange Reinforced Caps (or boards) will be used. OSHA approved.
	Fall hazards while working on rebar columns above 6'	Harnesses with tie-offs and use aerial lifts when possible
	Concrete chemical burns	The proper PPE is to be worn; i.e., rubber boots, rubber gloves, safety glasses is mandatory while pouring concrete.
	Fall hazards while erecting/dismantling scaffold	Where feasible, fall protection measures will be used;;; i.e., tie-off, fully planked decks, guardrails

**CONFINED SPACE
OPERATIONS**

JOB HAZARD ANALYSIS FORM

JOB TASK: <p style="text-align: center;">Confined Space Operations</p>		DATE: <p style="text-align: center;">10/23/14</p>
TITLE OF PERSON WHO DOES JOB:	SUPERVISOR:	ANALYSIS BY: <p style="text-align: center;">Lenore DiStefano</p>
DEPARTMENT:	SECTION:	REVIEWED BY:
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT: Hard Hats, Safety Glasses, Work Boots, High Visibility Vest/Shirt, and other safety equipment as required, Harness, Lanyard		APPROVED BY:
SEQUENCE OF BASIC JOB STEPS <i>Beware of being too detailed, record only the information needed to describe each job action. Rule of thumb, no more than 10 steps/task being evaluated</i>	POTENTIAL ACCIDENTS OR HAZARDS <i>HAZARD CLASSIFICATION CATEGORIES: Stuck By/Against, Caught In/Between, Slip, Trip, or Fall, Overexertion, Ergonomic (Awkward Postures, Excessive Force, Vibration, Repetitive Motion)</i>	RECOMMENDED SAFE JOB PROCEDURE <i>HAZARD CONTROL CATEGORIES: Engineer Out (New Way to Do, Change Physical Conditions or Work Procedures, Adjust/Modify/Replace Work Station Components/Tools, Decrease Performance Frequency), Personal Protective Equipment (PPE), Training, Improve Housekeeping</i>
Confined Space	Employee entering a confined space that possesses a hazardous atmosphere.	Confined space shall be evaluated, and hazards identified, prior to entry. Mechanical ventilation shall be provided in confined spaces if necessary. Entrances to confined spaces that could be inadvertently entered shall be posted. No entry will be permitted into confined spaces that have atmospheres that are flammable, oxygen deficient, or immediately dangerous to life and health.
	Additional hazards being introduced into a confined space	The attendant shall take positive steps to ensure that employees in confined spaces are protected from other physical hazards (falling objects, structural failure, engulfment hazards, etc...)
	Employee contact with hazardous materials or hazardous energy sources while in confined space	Before the confined space entry, hazardous energy, and sources of hazardous chemicals shall be isolated, locked out and tagged out, while work in confined spaces is being conducted.
	No communication between attendant and entrants	An effective means of communication between the attendant and the entrants must be maintained whenever entrants are out of sight of the attendant, or lifelines or lifelines and harnesses, or supplied air respirators are being used.
	No attendant present	The attendant shall call the workers out of the confined space if any new hazards are discovered, or if there is any malfunction in monitoring equipment

JOB HAZARD ANALYSIS FORM

JOB TASK: Demolition		DATE:
TITLE OF PERSON WHO DOES JOB: Field Crew Labor, Finisher, Carpenter	SUPERVISOR:	OSHA SOURCE: OSHA Standard 29 CFR 1926.850-1926.860, Subpart T, Demolition
DEPARTMENT: Jobsite	Project:	REVIEWED BY:
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT: Respirator 3M 7500 w/P100, Safety Glasses, Face Shield, Gloves, Chaps, Ear Plugs or Muffs, Hardhat		APPROVED BY:
BASIC JOB STEPS <i>Beware of being too detailed, record only the information needed to describe each job action.</i>	POTENTIAL ACCIDENTS OR HAZARDS <i>HAZARD CLASSIFICATION CATEGORIES: Stuck By/Against, Caught In/Between, Slip, Trip, or Fall, Overexertion, Ergonomic (Awkward Postures, Excessive Force, Vibration, Repetitive Motion)</i>	RECOMMENDED SAFE JOB PROCEDURE <i>HAZARD CONTROL CATEGORIES: Engineer Out (New Way to Do, Change Physical Conditions or Work Procedures, Adjust/Modify/Replace Work Station Components/Tools, Decrease Performance Frequency), Personal Protective Equipment (PPE), Training, Improve Housekeeping</i>
PREPARATORY OPERATIONS	<ul style="list-style-type: none"> • Collapse of Structure • Collapse of a Portion of the Structure • Asbestos/Lead Exposure • Electrical, Gas, Water, Sewer, Cable Damage • Glass Fragmentation • Fire Hazards • Exposure of the Public to Falling Debris • Rodents <p>•Note-If any structural demo is to be done, Demolition Plan must be submitted to OSHA for review.</p>	<ol style="list-style-type: none"> 1. The Competent Person shall survey the integrity of the structure prior to the start of demolition operations. 2. All required permits shall be obtained. 3. Prior to the start of the demolition, abatement of all asbestos or lead, by a licensed removal company, will be completed. 4. Locate, shut off, cap, or otherwise control all utilities. 5. All glass shall be broken out and removed to the proper disposal container. 6. Fire extinguishers shall be available on site and Emergency Services numbers shall be posted. 7. Work zone must be completely fenced in and of a sufficient distance away from sidewalks to remove any hazard to the public. 8. A certified exterminator will treat the entire building in accordance with governing health regulations.
PERSONAL PROTECTIVE EQUIPMENT	<ul style="list-style-type: none"> • Falling/Flying Debris • Dust Inhalation • Eye Injuries • Cuts/Scrapes/Abrasions • Struck By • Caught Between • Cuts/Struck By 	<ol style="list-style-type: none"> 1. All workers on site shall wear hard hats. 2. A supply of dust masks shall be kept on hand to fill worker requests. 3. All workers shall wear safety glasses. 4. Workers handling debris from the demolition will wear work gloves. 5. All workers on site shall wear approved, hi-visibility safety vests. 6. Chaps/Face Shield for concrete saws/Chainsaws

JOB HAZARD ANALYSIS FORM

JOB TASK: <p style="text-align: center;">Forklift Operations/Sletten Construction</p>		DATE: <p style="text-align: center;">September 2, 2014</p>
TITLE OF PERSON WHO DOES JOB: <p style="text-align: center;">Forklift Operator</p>	SUPERVISOR:	ANALYSIS BY: <p style="text-align: center;">Lenore DiStefano</p>
DEPARTMENT:	SECTION:	REVIEWED BY:
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT: <p style="text-align: center;">Hard Hat, Safety Boots, High Visibility Shirt/Vest, Safety Glasses (Other Gear as Required)</p>		APPROVED BY:
SEQUENCE OF BASIC JOB STEPS <i>Beware of being too detailed, record only the information needed to describe each job action. Rule of thumb, no more than 10 steps/task being evaluated</i>	POTENTIAL ACCIDENTS OR HAZARDS <i>HAZARD CLASSIFICATION CATEGORIES: Stuck By/Against, Caught In/Between, Slip, Trip, or Fall, Overexertion, Ergonomic (Awkward Postures, Excessive Force, Vibration, Repetitive Motion)</i>	RECOMMENDED SAFE JOB PROCEDURE <i>HAZARD CONTROL CATEGORIES: Engineer Out (New Way to Do, Change Physical Conditions or Work Procedures, Adjust/Modify/Replace Work Station Components/Tools, Decrease Performance Frequency), Personal Protective Equipment (PPE), Training, Improve Housekeeping</i>
Forklift Operations	Pinch Points Falling Loads	<ul style="list-style-type: none"> • Perform the required daily documented pre-inspection and if there are any items in need of repair, notify the superintendent immediately before the operation. • Use the seat belt • Never work or walk under a load • Do not stand or pass under the elevated portion of any forklift
	Potential for personnel to be hurt or run over with equipment	<ul style="list-style-type: none"> • Ensure the forklift is operated by trained and qualified operator. • Ensure equipment back-up alarms are working properly. • Always make eye contact with forklift operators prior to approaching.
		<ul style="list-style-type: none"> • Ensure a good working surface, use the outriggers as necessary. • Operate the forklift according to the manufacturer's recommendations.

JOB HAZARD ANALYSIS FORM

JOB TASK: Floor Openings, Elevator Shafts, Stair Blockouts, Gang Forms, and Leading Edge Work		DATE: 10/01/2014
TITLE OF PERSON WHO DOES JOB:	SUPERVISOR:	ANALYSIS BY: Lenore DiStefano
DEPARTMENT:	SECTION:	REVIEWED BY:
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT: Hard Hat, Safety Glasses, High Visibility Vest/Shirt, Work Boots and other safety equipment as required		APPROVED BY:
SEQUENCE OF BASIC JOB STEPS <i>Beware of being too detailed, record only the information needed to describe each job action. Rule of thumb, no more than 10 steps/task being evaluated</i>	POTENTIAL ACCIDENTS OR HAZARDS <i>HAZARD CLASSIFICATION CATEGORIES: Stuck By/Against, Caught In/Between, Slip, Trip, or Fall, Overexertion, Ergonomic (Awkward Postures, Excessive Force, Vibration, Repetitive Motion)</i>	RECOMMENDED SAFE JOB PROCEDURE <i>HAZARD CONTROL CATEGORIES: Engineer Out (New Way to Do, Change Physical Conditions or Work Procedures, Adjust/Modify/Replace Work Station Components/Tools, Decrease Performance Frequency), Personal Protective Equipment (PPE), Training, Improve Housekeeping</i>
Floor Openings, Elevator Shafts, Stair Blockouts, Gang Forms, and Leading Edge Work	Fall Hazards, falling debris	<p>Openings to be protected with two line guardrail and toe board at each floor. Openings to be completely covered when possible and cover to be properly and clearly marked.</p> <p>Perimeter cable, toe boards and fencing will be provided at all levels immediately following form removal.</p> <p>Persons installing fall protection materials shall utilize harnesses and retractable lanyards or catenary lines for fall protection. The leading edge will be identified immediately with flagging or cable.</p> <p>Frequent housekeeping to eliminate potential for fall debris.</p>

JOB HAZARD ANALYSIS FORM

JOB TASK: <p style="text-align: center;">Excavations</p>		DATE: <p style="text-align: center;">09/09/2014</p>
TITLE OF PERSON WHO DOES JOB:	SUPERVISOR:	ANALYSIS BY: <p style="text-align: center;">Lenore DiStefano</p>
DEPARTMENT:	SECTION:	REVIEWED BY:
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT: <p style="text-align: center;">Hard Hats, Safety Glasses, Work Boots, High Visibility Vest/Shirt, other equipment as required</p>		APPROVED BY:
SEQUENCE OF BASIC JOB STEPS <i>Beware of being too detailed, record only the information needed to describe each job action. Rule of thumb, no more than 10 steps/task being evaluated</i>	POTENTIAL ACCIDENTS OR HAZARDS <i>HAZARD CLASSIFICATION CATEGORIES: Stuck By/Against, Caught In/Between, Slip, Trip, or Fall, Overexertion, Ergonomic (Awkward Postures, Excessive Force, Vibration, Repetitive Motion)</i>	RECOMMENDED SAFE JOB PROCEDURE <i>HAZARD CONTROL CATEGORIES: Engineer Out (New Way to Do, Change Physical Conditions or Work Procedures; Adjust/Modify/Replace Work Station Components/Tools, Decrease Performance Frequency), Personal Protective Equipment (PPE), Training, Improve Housekeeping</i>
Excavating	Digging with the possibility of striking foreign underground utilities and pipelines. <ol style="list-style-type: none"> 1. Potential for fires, spills, and damaged underground utilities. 2. High Noise 3. Hand Laceration 	<ol style="list-style-type: none"> 1. Utilize the "Call Before You Dig" alert system. 2. Verify the equipment operators training. 3. Utilize a qualified spotter and pot hole when feasible. 4. Utilize appropriate PPE, i.e. Hard hats, safety glasses, work boots, high visibility shirt and as necessary, hearing protection and gloves
Employees working in the excavation	<ol style="list-style-type: none"> 1. Potential for cave-in 2. Potential for atmospheric hazards 3. Striking personnel within radius of the boom 	<ol style="list-style-type: none"> 1. Have an excavation competent person evaluate the excavation and determine the soil type. 2. Excavations over 5 foot deep will be sloped or shored. 3. When necessary, test for atmospheric conditions, the competent person will determine the necessity. 4. Only one person is to act as the signalman. 5. Excavations deeper than 20 feet must be designed by a professional engineer. 6. There must be one ladder for each 25 feet of travel in the excavation. The ladder must extend three foot above the landing surface and be secured to prevent movement. Use the ladder in accordance with manufacturer's recommendations. 7. Ensure all spoil piles/materials are not within 2 foot of the edge of the excavation

LADDER USE

JOB HAZARD ANALYSIS FORM

JOB TASK: <p style="text-align: center;">Ladder Use</p>		DATE: <p style="text-align: center;">September 9, 2014</p>
TITLE OF PERSON WHO DOES JOB:	SUPERVISOR:	ANALYSIS BY: <p style="text-align: center;">Lenore DiStefano</p>
DEPARTMENT:	SECTION:	REVIEWED BY:
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT: <p>Hard Hats, Safety Glasses, Work Boots, High Visibility Vest/Shirt, and other safety equipment as required</p>		APPROVED BY:
SEQUENCE OF BASIC JOB STEPS <i>Beware of being too detailed, record only the information needed to describe each job action. Rule of thumb, no more than 10 steps/task being evaluated</i>	POTENTIAL ACCIDENTS OR HAZARDS <i>HAZARD CLASSIFICATION CATEGORIES: Stuck By/Against, Caught In/Between, Slip, Trip, or Fall, Overexertion, Ergonomic (Awkward Postures, Excessive Force, Vibration, Repetitive Motion)</i>	RECOMMENDED SAFE JOB PROCEDURE <i>HAZARD CONTROL CATEGORIES: Engineer Out (New Way to Do, Change Physical Conditions or Work Procedures, Adjust/Modify/Replace Work Station Components/Tools, Decrease Performance Frequency), Personal Protective Equipment (PPE), Training, Improve Housekeeping</i>
Ladder Use	Slips, Trips, Falls, Sprains, Strains	1. Choose the correct ladder for the task.
Extension Ladder	Slips, Trips, Falls, Sprains, Strains	<ol style="list-style-type: none"> 1. Inspect the ladder prior to use in accordance with the manufacturer's recommendations. If any defects are noted, remove the ladder from service immediately. Do NOT use a defective ladder. 2. When using an extension ladder for access/egress, the ladder must extend three foot above the landing surface. 3. The ladder must be secured to prevent movement. 4. Insure the landing area is free of any debris. 5. Maintain three points of contact 6. If the ladder is being used in a leading edge zone, above a lower level, fall protection may be required.
Job Built Ladders	Slips, Trips, Falls, Sprains, Strains	1. Build and install the job built ladder in accordance with the ANSI Standards for Job Built Ladders.

JOB HAZARD ANALYSIS FORM

JOB TASK: Metal Stud Framing and Decking at the Sletten Phoenix Office		DATE: 12/08/15
TITLE OF PERSON WHO DOES JOB: Carpenters/Laborers	SUPERVISOR: Quentin Reed	ANALYSIS BY: Quentin Reed
COMPANY: Sletten Construction	SECTION:	REVIEWED BY: Lenore DiStefano
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT: Hard Hat, Safety Glasses, High Vis Vest or Shirt/ Gloves/Boots/Full Body Harness/Lanyard/Face Shield		APPROVED BY:
SEQUENCE OF BASIC JOB STEPS <i>Beware of being too detailed, record only the information needed to describe each job action. Rule of thumb, no more than 10 steps/task being evaluated</i>	POTENTIAL ACCIDENTS OR HAZARDS <i>HAZARD CLASSIFICATION CATEGORIES: Stuck By/Against, Caught In/Between, Slip, Trip, or Fall, Overexertion, Ergonomic (Awkward Postures, Excessive Force, Vibration, Repetitive Motion)</i>	RECOMMENDED SAFE JOB PROCEDURE <i>HAZARD CONTROL CATEGORIES: Engineer Out (New Way to Do, Change Physical Conditions or Work Procedures, Adjust/Modify/Replace Work Station Components/Tools, Decrease Performance Frequency), Personal Protective Equipment (PPE), Training, Improve Housekeeping</i>
Cutting Metal Studs	Cuts, Debris in eye, Fire	Wear Gloves, Wear Safety glasses and face shield, insure there are no combustible materials in the area and follow the Hot Work Permit procedures.
Installing Metal Studs	Cuts, Falling Objects, Flying Debris, Falls, Tool or equipment failure	Wear Gloves, establish a clear working zone below any overhead work, wear safety glasses and when working at heights, use either a scissor lift or Fall Protection. If using a scissor lift, insure the operator has a current certification and the required daily inspection has been performed. Operate the scissor lift in accordance with the manufacturer's recommendations. Refer to JHA for Working at Elevated Heights for Fall Protections. Inspect all tools and equipment prior to use.
Decking Height approx. 10'8"	Electrocution, Falls, Strains	Prior to any decking operation, remove or protect the existing overhead florescent lights to protect workers. Refer to JHA for working at elevated heights. When moving or lifting material, insure good body position to minimize the risk of strains.
Securing Decking	Falls, Pinch Points, Falling Objects, Overhead obstructions	Refer to JHA for working at elevated heights. Identify possible pinch points and be aware of hand placement. Wear gloves when handling material. Establish and maintain a clear work area below to prevent injury from falling debris and objects. Identify overhead obstructions that may cause bump or bruise.

JOB HAZARD ANALYSIS FORM

JOB TASK: Scaffold - Erection and Dismantling		DATE:
TITLE OF PERSON WHO DOES JOB: Competent/Qualified Scaffold Personnel	SUPERVISOR:	ANALYSIS BY:
COMPANY NAME: Sletten Construction Companies	TOOLS:	REVIEWED BY:
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT: Hard Hat, Safety Vest, Work Boots, Safety Glasses, PFAS		
SEQUENCE OF BASIC JOB STEPS <i>Beware of being too detailed, record only the information needed to describe each job action. Rule of thumb, no more than 10 steps/task being evaluated</i>	POTENTIAL ACCIDENTS OR HAZARDS <i>HAZARD CLASSIFICATION CATEGORIES: Stuck By/Against, Caught In/Between, Slip, Trip, or Fall, Overexertion, Ergonomic (Awkward Postures, Excessive Force, Vibration, Repetitive Motion)</i>	RECOMMENDED SAFE JOB PROCEDURE <i>HAZARD CONTROL CATEGORIES: Engineer Out (New Way to Do, Change Physical Conditions or Work Procedures, Adjust/Modify/Replace Work Station Components/Tools, Decrease Performance Frequency), Personal Protective Equipment (PPE), Training, Improve Housekeeping</i>
Working Condition(s)	Inspect Safety Condition of area where work to be performed	Inspection of all equipment and tools to be performed, inspect all parts of scaffold to be erected/dismantled, review work area and tasks for PPE required
Scaffold Erection	Falling objects and debris (ie. Steel pipes/hangers, fittings, planks etc.) Personnel bodily injury from materials and/or equipment	Competent person on site during erection. Only personnel performing erection in the area at the time of erection. Use of Tool lanyards for hand tools. Use of proper PPE (Hart Hat, Boots, Safety Glasses, PFAS)

	<p>Falling (Personnel) Collapse of scaffold</p>	<p>Scaffold area to be cordoned off with barrier and warning sign provided.</p> <p>No scaffold shall be erected, moved accept under the supervision of competent scaffolder.</p> <p>Install specific ladder and other temporary facilities in accordance with the work safety plan.</p> <p>All material to be inspect prior to use.</p> <p>Every week inspection required by competent person or job supervisor and fill the green tag with remarks.</p> <p>Use right tools for erection and all tools should be inspected prior to use.</p> <p>All scaffold work done by experienced and skilled scaffold crew only.</p> <p>Do not put body force for tie up the structure, tie in work by right tools only.</p> <p>During assembly of scaffold tie of separate ledger that are locked in to place.</p> <p>Secure hand tools in place with safety lanyards.</p> <p>If scaffold are sheeted / planking then calculation will needed to ensure the safe working & wind loading on the scaffold structure.</p> <p>Inspection made by competent scaffold supervisor prior to use.</p>
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JOB HAZARD ANALYSIS FORM

<p>Dismantle Scaffold</p>	<p>Falling Bodily Injury to Personnel from material and/or equipment Falling objects and debris Collapse of Scaffold</p>	<p>Scaffold area to be cordoned off with barrier and warning sign provided.</p> <p>No scaffold shall be dismantled or moved accept under the supervision of competent scaffolder.</p> <p>Only necessary personnel in the area at the time scaffold is being dismantled.</p> <p>Install specific ladder and other temporary facilities.</p> <p>All material to be inspected prior to use.</p> <p>Use right tools and all tools should be inspected prior to use.</p> <p>All scaffold work done by experienced and skilled scaffold crew only.</p> <p>Proper PPE to be used – Hard Hat, Boots, Safety Glasses, PFAS</p> <p>Fall Protection - During dismantling of scaffold tie off separate ledger that are locked in to place.</p> <p>Secure hand tools in place with safety lanyards.</p>
<p>Loading and Unloading material from trucks to work area</p>	<p>Bodily injury from equipment Slip, trip & falls</p>	<p>Having a spotter, proper PPE Vest Hard Hat, Boots Unloading to level ground/proper PPE – hard hat, boots, Vests, safety glasses</p>

JOB HAZARD ANALYSIS FORM

JOB TASK: Scaffold – General Use		DATE:
TITLE OF PERSON WHO DOES JOB: Personnel Trained in Scaffold Awareness and Use	SUPERVISOR:	ANALYSIS BY:
COMPANY NAME: Sletten Construction Companies	TOOLS:	REVIEWED BY:
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT: Hard Hat, Safety Vest, Work Boots, Safety Glasses, PFAS		
SEQUENCE OF BASIC JOB STEPS <i>Beware of being too detailed, record only the information needed to describe each job action. Rule of thumb, no more than 10 steps/task being evaluated</i>	POTENTIAL ACCIDENTS OR HAZARDS <i>HAZARD CLASSIFICATION CATEGORIES: Stuck By/Against, Caught In/Between, Slip, Trip, or Fall, Overexertion, Ergonomic (Awkward Postures, Excessive Force, Vibration, Repetitive Motion)</i>	RECOMMENDED SAFE JOB PROCEDURE <i>HAZARD CONTROL CATEGORIES: Engineer Out (New Way to Do, Change Physical Conditions or Work Procedures, Adjust/Modify/Replace Work Station Components/Tools, Decrease Performance Frequency), Personal Protective Equipment (PPE), Training, Improve Housekeeping</i>
Working Condition(s)	Inspect Safety Condition of area where work to be performed	Inspect work are for safety hazards.
Scaffold Use	Scaffold in working condition and ready to be accessed. Falling objects and debris Personnel bodily injury from materials and/or equipment	Competent person on site during scaffold use. Ensure personnel have proper scaffold awareness training prior to accessing scaffold Properly tagged Use of Tool lanyards for hand tools. Use of proper PPE (Hart Hat, Boots, Safety Glasses, PFAS)
Loading and Unloading material from trucks to work area	Bodily injury from equipment Slip, trip & falls	Having a spotter, proper PPE Vest Hard Hat, Boots Unloading to level ground/proper PPE – hard hat, boots, Vests, safety glasses

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JOB HAZARD ANALYSIS FORM

JOB TASK: <p style="text-align: center;">STEEL ERECTION AND OFF LOADING STEEL</p>		DATE:
TITLE OF PERSON WHO DOES JOB: <p style="text-align: center;">IRON WORKER (Connectors and Raising Gang)</p>	SUPERVISOR:	ANALYSIS BY:
COMPANY NAME: <p style="text-align: center;">SLETTEN CONSTRUCTION COMPANIES</p>	TOOLS AND EQUIPMENT: <p style="text-align: center;">Aerial lift, Forklift, Crane, Rigging, Hand Tools</p>	REVIEWED BY:
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT: <p style="text-align: center;">PPE – Safety glasses, Hard hat, leather gloves, proper clothing, boots with proper sole, PFAS</p>		REQUIREMENTS: Inspect all PPE, tools and equipment daily; review JHA with all personnel, Certified Operators for all equipment, general instruction on PPE and hand tools.
SEQUENCE OF BASIC JOB STEPS <i>Beware of being too detailed, record only the information needed to describe each job action. Rule of thumb, no more than 10 steps/task being evaluated</i>	POTENTIAL ACCIDENTS OR HAZARDS <i>HAZARD CLASSIFICATION CATEGORIES: Stuck By/Against, Caught In/Between, Slip, Trip, or Fall, Overexertion, Ergonomic (Awkward Postures, Excessive Force, Vibration, Repetitive Motion)</i>	RECOMMENDED SAFE JOB PROCEDURE <i>HAZARD CONTROL CATEGORIES: Engineer Out (New Way to Do, Change Physical Conditions or Work Procedures, Adjust/Modify/Replace Work Station Components/Tools, Decrease Performance Frequency), Personal Protective Equipment (PPE), Training, Improve Housekeeping</i>
Position truck with Steel delivery for offloading truck.	<ul style="list-style-type: none"> • Public traffic and Pedestrians • Caught between • Struck by - objects at ground level 	<ul style="list-style-type: none"> • Remove any obstruction that may interfere with delivery • Maintain public right of way where: barricade accordingly to keep pedestrians and traffic from entering construction area • Review truck routes and offloading area prior to the arrival of trucks • Maintain visual contact with driver to enable safe positioning of the truck and trailer for offloading • When trucks need to be backed into a location, the use of a spotter is required • All loads shall remain strapped down until the truck is in position to offload.

JOB HAZARD ANALYSIS FORM

<p>Off load Steel</p>	<ul style="list-style-type: none"> • Caught between • Pinch points • Struck by – falling/swinging/slipping objects or objects at ground level • Dropping of a load • Mechanical or Equipment Failure 	<ul style="list-style-type: none"> • Set up and maintain barricades and signs for the steel erection zone • Confirm visual or radio contact with the crane operator and discuss procedure for offloading • Calculate the proper size rigging needed to accomplish the offloading of a particular steel member • Check the condition of the rigging. If damage or excessive wear is found, remove rigging from service and destroy it to prevent others from using it. • Find center of gravity and of steel member(s), and place chokers with the “bite” in proper position • Signal the crane operator to slowly take some weight. If center of gravity is good, then give the operator the OK to lift the load and swing it to the lay down area. • Give a warning to others that are in the path of the overhead load, so they can remove themselves from the swing path. • Signal operator to the spot you intend to set the steel down, keep hands and feet clear while you position it over the dunnage, and signal the operator to slowly come down on the load. • When the load is securely on the dunnage, check stability. When stable, cut the crane loose from the load and remove the rigging. • Place rigging back on the hook and signal crane operator to swing back to the truck for more
<p>Shake out steel for erection</p>	<ul style="list-style-type: none"> • Caught between • Pinch points • Struck by 	<ul style="list-style-type: none"> • Rig steel properly for shake out • Keeping hands, fingers and feet clear, signal operator to come up on the load and place the member in the upright position. • Leave adequate room on either side for safe passage • Ensure members are stable and on solid dunnage before you continue. • Release the weight from the crane and repeat, using the same method.
<p>****Installation of Catenary Line****</p>	<p>**SEE JHA FOR CATENARY LINE INSTALLATION FOR THIS STEP**</p>	

JOB HAZARD ANALYSIS FORM

<p>Install (connect) and bolt steel into position Bolting Cutting Load loose</p>	<ul style="list-style-type: none"> • Falls to lower levels • Struck by • Caught between • Smashing • Pinch points 	<ul style="list-style-type: none"> • All raising gang members (Including Connectors) shall be protected by guard rails systems, safety net systems, personal fall arrest systems, positioning device systems, or fall restraint systems when exposed to a fall hazard greater than 6 feet. • Harnesses, lanyards and hooks shall be compatible with provided anchorage points of personal fall arrest, position device or fall restrain systems. • Signal operator to swing the piece of steel into position. • Establish hands on control of the piece. • Place steel into location and place two bolts into each end. • Draw bolts up wrench tight to make the piece stable and secure. • Ensure your partner has his end secure. • Inform the operator of your intent to cut the piece loose. • Move choker while staying continuously tied off and remove it from the piece. • Place rigging back on the hook • Let the crane operator you are loose from the piece of steel and signal them to return the hook for another piece.
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JOB HAZARD ANALYSIS FORM

JOB TASK: <p style="text-align: center;">STEEL ERECTION – CATENARY LINE INSTALLATION</p>		DATE:
TITLE OF PERSON WHO DOES JOB: <p style="text-align: center;">IRON WORKER (Connectors and Raising Gang)</p>	SUPERVISOR:	ANALYSIS BY:
COMPANY NAME: <p style="text-align: center;">SLETTEN CONSTRUCTION COMPANIES</p>	TOOLS AND EQUIPMENT: <p style="text-align: center;">Aerial lift, Forklift, Crane, Hand Tools</p>	REVIEWED BY:
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT: <p style="text-align: center;">PPE – Safety glasses, Hard hat, leather gloves, proper clothing, boots with proper sole, PFAS</p>		REQUIREMENTS: Inspect all PPE, tools & equipment daily; review JHA with personnel, Subpart R, Certified Operators for all equipment, general instruction on PPE and hand tools.
SEQUENCE OF BASIC JOB STEPS <i>Beware of being too detailed, record only the information needed to describe each job action. Rule of thumb, no more than 10 steps/task being evaluated</i>	POTENTIAL ACCIDENTS OR HAZARDS <i>HAZARD CLASSIFICATION CATEGORIES: Stuck By/Against, Caught In/Between, Slip, Trip, or Fall, Overexertion, Ergonomic (Awkward Postures, Excessive Force, Vibration, Repetitive Motion)</i>	RECOMMENDED SAFE JOB PROCEDURE <i>HAZARD CONTROL CATEGORIES: Engineer Out (New Way to Do, Change Physical Conditions or Work Procedures, Adjust/Modify/Replace Work Station Components/Tools, Decrease Performance Frequency), Personal Protective Equipment (PPE), Training, Improve Housekeeping</i>
Verify that structural members in laydown area are ready for catenary line installation.	<ul style="list-style-type: none"> • Installation on wrong members in sequence • Unstable footing • Unstable structural members • Nested structural members • Structural members not shook out 	<ul style="list-style-type: none"> • Contact raising gang foreman to verify which members are to have catenary lines installed • Verify that structural members have been “shaken out” on stable ground with sufficient clearance for safe access. • If any unsafe condition exists, bring it to the attention of the foreman in charge for correction prior to starting work.

JOB HAZARD ANALYSIS FORM

<p>Install Catenary Line on beam</p>	<ul style="list-style-type: none"> • Improper installation may result in injury during subsequent use 	<ul style="list-style-type: none"> • Determine method of installation using shackle or thru the hole method • Refer to Beam Catenary Line System Installation drawings and details. • Provide training for installation personnel on system requirements • Measure cable length and allow sufficient additional length for proper cable sag and connections. • Pass cable through shackle/hole and install three cable clams with saddle on the long section of cable, not the tail. • Place clamps three inches apart with the first clamp no more than six (6) inches from the shackle/hole. • Leave at least a six (6) inch tail past the last clamp. • Tension the three (3) clamps on one end of the catenary line with the portable impact gun to 30-32 foot pounds of tension. • At the other end of the structural member, pass cable through the shackle/hole and install three cable clamps with the saddle on the long section of cable, not the tail. • Place clamps three inches apart with the first clamp no more than six (6) inches from the shackle/hole. • Leave at least a six (6) inch tail past the last clamp. • Pull the cable to set the proper sag in the cable, six inches + 3 inches. • Tension clamps on one end of the catenary line with the portable impact gun to 30-32 foot pounds of tension.
<p>Inspect completed catenary line prior to erection</p>	<ul style="list-style-type: none"> • Improper Installation • Post installation damage 	<ul style="list-style-type: none"> • Verify proper installation and that no damage has occurred. • Replace catenary line if damaged.

JOB HAZARD ANALYSIS FORM

JOB TASK: <p style="text-align: center;">Working From Elevated Surfaces</p>		DATE: <p style="text-align: center;">September 6, 2014</p>
TITLE OF PERSON WHO DOES JOB:	SUPERVISOR:	ANALYSIS BY: <p style="text-align: center;">Lenore DiStefano</p>
DEPARTMENT:	SECTION:	REVIEWED BY:
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT: <p>Hard Hats, Safety Glasses, Work Boots, High Visibility Vest/Shirt, and other safety equipment as required, Harness, Lanyard</p>		APPROVED BY:
SEQUENCE OF BASIC JOB STEPS <i>Beware of being too detailed, record only the information needed to describe each job action. Rule of thumb, no more than 10 steps/task being evaluated</i>	POTENTIAL ACCIDENTS OR HAZARDS <i>HAZARD CLASSIFICATION CATEGORIES: Stuck By/Against, Caught In/Between, Slip, Trip, or Fall, Overexertion, Ergonomic (Awkward Postures, Excessive Force, Vibration, Repetitive Motion)</i>	RECOMMENDED SAFE JOB PROCEDURE <i>HAZARD CONTROL CATEGORIES: Engineer Out (New Way to Do, Change Physical Conditions or Work Procedures, Adjust/Modify/Replace Work Station Components/Tools, Decrease Performance Frequency), Personal Protective Equipment (PPE), Training, Improve Housekeeping</i>
Working from elevated surfaces/Personal Fall Arrest Equipment	Fall protection equipment failure Slips, Trips, Falls	Utilize appropriate fall protection at all times while personnel are working at unprotected elevations greater than (6) feet above the ground or an adjacent platform/working surface. <ol style="list-style-type: none"> 1. Fall protection equipment must be inspected for excessive wear or damage according to the manufacturer's recommendation prior to each use. 2. Anchorage points must be able to withstand a force of 5000 pounds for a non-engineered system and 3600 pounds for an engineered system. 3. Insure the harness fits snugly and comfortably according to the manufacturer's recommendations. 4. Do not modify fall protection equipment 5. Any fall protection equipment that is worn or damaged must be removed from service immediately. 6. Any fall protection equipment that have been used to stop a fall must be destroyed and removed from service. 7. Store all fall protection equipment in accordance to the manufacturer's recommendations.

Sletten Companies

Safety Related Programs, Plans and Documentation

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