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SCOPE OF WORK SUMMARY

This job consists of:
1. **SIGNATURE SHEET**

The following person(s) is/are responsible for preparing and approving this plan:

**Preparer:**

By: ______________________________

Date: ______________________________
2. BACKGROUND INFORMATION

A. Contractor
   • Sletten Construction

B. Project Name
   •

C. Project Description
   •

D. Contractor Accident Record
   •

3. 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.

This Policy Statement will be conspicuously posted in the job site office along with the OSHA Form 300, Log and Summary of Occupational Injuries and Illnesses.
4. RESPONSIBILITIES AND LINES OF AUTHORITY

The following people have responsibilities and authority for corporate safety:

A. RESPONSIBILITIES

1. Corporate Safety Officers:
   - Mike Allison 406.788.3284
   - Tom Morano 702.236.6365
   - Matt Replogle 702.782.5318

2. Site Safety Responsibilities:

3. Project Superintendent:

B. LINES OF AUTHORITY

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

1. ________ 2. ________ 3. ________

A Site Safety and Health Officer will be provided at the work site at all times to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor and subcontractors. The SSHO will be employed by the prime.

The competent person for Health Hazard Control and Respiratory Protection Program will conduct and document a hazard assessment in accordance with Section 06 to identify and evaluate.

Site Safety and Health Officer (SSHO)

- Conduct daily 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. Safety inspection logs shall be attached to the Contractors daily quality control report.
5. SUBCONTRACTORS AND SUPPLIERS

A. IDENTIFICATION OF CURRENT SUBCONTRACTORS

• TBD

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

All subcontractors will be responsible to implement their corporate level 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 and the Veterans Affairs Safety and Health Program requirements. This will be verified through our own site safety inspections and meetings.

In the event that a subcontractor does not have the required safety and health programs, their employees will receive training utilizing Sletten Construction Company safety and health programs. This training will be documented and compliance with the provisions of Sletten Construction Company Safety and Health programs will be mandatory.

6. TRAINING

A. SITE ORIENTATION TRAINING

All site employees will be required to attend a Safety Training Orientation at the start of the project, or before they begin work at the job site. The site supervisor or Safety Person will conduct the training. The topics listed below are mandatory, but not limit to the following:

• Site Emergency reporting number/Emergency procedures
• Safety Program
• Accident Reporting
• Site Sanitation
• Personal Protective Equipment
• Fire Protection/Fire Prevention Plans
• Fire Extinguishers
• MSDS
• SDS
• Housekeeping
• Slips, trips, and falls

B. EMERGENCY RESPONSE TRAINING
Located within this documentation, under Section 12, are detailed responses in various applicable emergencies that could occur on this job site. These areas also contain the training and requirements.

C. EMPLOYEE SAFETY MEETINGS/SAFETY COMMITTEE
The primary site supervisor, who is the competent person, will conduct the initial employee site safety orientation. Mandatory safety meetings will be held on a weekly basis. Safety and health topics will vary from week to week on subject matter, utilizing the 29 CFR 1910 and 29 CFR 1926 standards, along with the PROJECT issues raised during construction.

SAFETY COMMITTEE POLICY

PURPOSE:
To assist in the detection and elimination of unsafe conditions and work procedures. A safety and health committee will be established with representation from employees and management.

OBJECTIVES:

1. Establish procedures for the review of all safety and health inspection reports and make necessary recommendations.

2. Improve the spirit of cooperation between employer and employee.

3. Provide a channel of communication for open discussion of problems that resulted, or could have resulted in an injury or illness.

4. Assist management in the evaluation and improvement of safety and health in the work environment.
PROCEDURES:

1. Employees will select fellow workers to represent them on the committee. Method of selection shall be optional. There will be an equal number of management and employees than managers on the committee.

2. The terms of employee-selected 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.

3. The chairperson will be elected by the safety committee.

4. Committee will meet every six weeks with date, time, and location determined at end of each meeting.

5. Attendance and subjects discussed should be documented and maintained on file for a period of three (3) years. Copies of the minutes will be provided to top management, committee members, and employees by posting on project bulletin boards, in office trailers, or in break areas.

ELEMENTS OF A SUCCESSFUL SAFETY COMMITTEE:

1. Defined purpose

2. Well organized

3. Set objectives

4. Know extent of authority

5. Follow established procedures

6. Good employer attitude and support

SCOPE OF ACTIVITIES:

1. Conduct periodic job-site safety inspections.

2. Establish procedures for assisting in accident investigation and review of accident reports to determine means of elimination.

3. Accept and evaluate employee suggestions.

4. Review job procedures and recommend improvements.

5. Monitor the effectiveness of the safety program.

6. Promote and publicize safety.

7. Recommend safety solutions to management. Follow up on recommendations and corrective actions.
7. SAFETY AND HEALTH INSPECTIONS

A. INSPECTIONS AND QUALIFIED PERSON

The site supervisor, who is the competent person, will conduct the Safety and Health inspections.

Two types of safety inspections will be performed on this job site.

1. A weekly Safety and Health inspection, which will be conducted by the site supervisor.

2. Project safety walks will occur on a daily basis to identify potential safety hazards for all project personnel. Project site supervisors (project managers, superintendents, and foremen) will work together to ensure that the daily safety walk occurs within the first 3 hours of the work day by (i) personally completing the safety walk or (ii) assigning a specific employee or team to complete the task and following up with said employee. As part of the daily safety walk, a Jobsite Safety Checklist will be completed. This documentation will be kept at the project field office, and will aid in the audits of the Accident Prevention Plan.

B. EXTERNAL INSPECTIONS / CERTIFICATIONS

Prior to the activity of cutting and/or welding, the Representative for PROJECT will be contacted to assist in scheduling a site inspection and submission for a burn permit.

8. SAFETY AND HEALTH EXPECTATIONS, INCENTIVE PROGRAMS, AND COMPLIANCE

A. SAFETY PROGRAM GOALS

The goals for this project are as follows:

1. Zero accident rate

2. Zero injury/illness rate

3. Compliance with all applicable OSHA standards

Safety and Health Manual requirements:

As part of employment with Sletten Construction Company are required to comply with all aspects of corporate level Safety and Health Plan.

Supervisors are expected and required to comply with all aspects of the corporate level Safety and Health Plan as well as to enforce all applicable requirements at the jobsite. Supervisors are expected and required to complete all necessary site safety documentation in a complete and timely manner. Supervisors are required to report all safety incidents to the main office as soon as possible. The above items represent the method used to ensure our goals are met.
B.  SAFETY INCENTIVE PROGRAM---See APPENDIX III

Each week that the project goes without an incident, each employee is given a Five dollar token to redeem for a gift card from the main office or Stores that redeem the tokens.

C.  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.

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 as needed after receiving a safety violation notice.

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.
D. WRITTEN COMPANY PROCEDURES FOR MANAGER AND SUPERVISOR ACCOUNTABILITY/DRUG-ALCOHOL POLICY

--- See APPENDIX III

All supervisors and managers are subject to the same corporate level Safety and Health Program requirements as outlined in the Enforcement and Discipline procedures above.

9. ACCIDENT REPORTING

All accidents shall be reported to the Safety Division Officer assigned to the Project.

- Mike Allison 406.788.3284
- Tom Morano 702.236.6365
- Matt Replogle 702.782.5318

The following persons shall be responsible for items as listed:

A. EXPOSURE DATA / MAN HOURS WORKED

This information will be maintained by the site supervisor.

B. ACCIDENT INVESTIGATIONS, REPORTS AND LOGS

The Site Safety Rep and Site Supervisor will conduct all accident and near miss investigations. The site supervisor will maintain the OSHA 300 log. All documentation will be kept on the job site.

C. IMMEDIATE NOTIFICATION OF MAJOR ACCIDENTS

Should a major accident occur, the following notifications will take place as soon as any injured person(s) are cared for:

PROJECT Contact:

Local Emergency Services:

Fire Department: 911

Security: Dial
10. MEDICAL SUPPORT

The following items concern the handling of all medical support requirements:

A. ON SITE

For non-emergency support first aid supplies will be kept at the Sletten Construction Company field office. All subcontractors will be required to supply properly trained personnel as well as their own first aid supplies. All supplies will be subject to our safety inspections. No one will perform first aid or CPR unless properly trained, and verification of certification is on file at the jobsite.

B. OFF SITE: Quick Care

Maps are available for all contractors on site.

11. PERSONAL PROTECTIVE EQUIPMENT

Required PPE for all Projects include: hard hats, safety glasses, safety vests, appropriate leather work boots, full length pants and sleeved shirts.

Procedures for implementing an effective PPE policy in accordance with 29 CFR 1910.132 will be as follows:

- During a pre-construction walk through, Name: _____ will perform a job site hazard assessment.

A. HAZARD ASSESSMENT

The purpose of the survey is to identify sources of hazards to workers and co-workers. The documentation of this hazard assessment is located in field office.

B. POTENTIAL HAZARD SOURCES

- Electrical Hazards
- Surfaces that could be uneven walking and working surfaces
- Welding / Brazing Hazards
- Quality Air Control
- Rolling or pinching objects
- Sharp objects that might pierce feet or cut hands
- Motion that includes tool movement, heavy supplies

Each of the basic hazards has been reviewed and a determination made as to the type, level of risk, and seriousness of potential injury. Consideration has been given to the possibility of exposure to several hazards at once. The general procedure for determining appropriate protective equipment is to:
• Identify the potential hazards and the type of protective equipment that is available, and what protection it provides.

• Compare the capabilities of various types of PPE with the hazards associated with the environment.

• Select the PPE, which provides a level of protection greater than the minimum required to protect employees from the hazards.

• Select PPE that will fit each employee properly and provides protection from the hazard.

12. EMERGENCY PLANS, HAZARDS AND CLEANUP

A. LAYOUT PLANS

Plans for the layout of the locations of the project Gates, compressed gas cylinder/Gas/Diesel storage, employee safe zone are in the Emergency Excavation Plan.

B. RESPONSE PLAN

Sletten Construction Company intends to make certain all emergency incidents are handled in a proper and safe manner giving priority to the following:

• Life Safety
• Property Conservation
• Emergency Situation Investigation
• Return to Normal Operations

This plan covers the actions of all Sletten Construction employees. All subcontractors on site will be required to submit for approval, to Sletten Construction Company, their own site specific Emergency Response Plan. If not adequate, the subcontractor and their employees must be orientated to the Sletten Construction Company site specific emergency response plan, before they can begin work at this site.

1. Procedures

The employer can demonstrate in the JSA/JHA that specific operations does not involve employee exposure or the reasonable possibility for employee exposure to safety or health hazards.

Clean-up operations required by a governmental body, whether Federal, state, local or other involving hazardous substance that are conducted at uncontrolled hazardous waste sites (including, but not limited to, the EPA’s National Priority Site List (NPL), state priority site lists, sites recommended for the EPA, NPL, and initial investigations of government identified sites which area conducted before the presence or absence of hazardous substances has been ascertained.

Corrective actions involving clean-up operations at sites covered by the Resource Conservation and Recovery Act of 1976 (RCRA) as amended (42 W.S.C. 6901 et seq).
Voluntary clean-up operations at sites recognized by Federal, state, local or other governmental bodies as uncontrolled hazardous waste sites; Operations involving hazardous waste that area conducted at treatment, storage, disposal (TSD) facilities regulated by 40 CFR Parts 264 and 265 pursuant to RCRA; or by agencies under agreement with U.S.E.P.A. to implement RCRA regulations; and Emergency response operations for releases of, or substantial threats of releases of, hazardous substances with regard to the location of the hazard.

As part of this program, Sletten Construction Company will inform subcontractors, or their representatives of the site emergency response procedures and any potential fire, explosion, health, safety, or other hazards. The substances listed in Section 12, paragraph c, under MSDS, have the potential to be released or spilled. Section 12.c, Hazard Communication, lists some potential hazards that contractors and/or subcontractors may encounter. Also listed are the response actions to be taken and the proper notification.

The following procedures address emergency response as follows:

- Pre-emergency planning and coordination with outside parties: Sletten will receive notification of date to start work, along with MSDS’s and SDS’s of all substances brought onto the facility.

- Personal roles, lines of authority, training, and communication: The personnel utilizing these chemicals will contain the substances brought onto the facility. Plumbers will contain and handle all compressed gas cylinders, as they are trained in. In the case where a situation occurs that they cannot handle, they will be trained on evacuating the area, notifying the on-site supervisor, and workers in the immediate worksite.

- Emergency recognition and prevention: All workers will, at the safety orientation, be informed of this site-specific emergency response plan and procedures. All workers will be responsible to recognize hazards and their prevention, practice this at all times on the worksite.

- Safe distances and places of refuge: All workers at this site will be informed of the designated location of the safe zone. This will also be posted in the field office for all to be reminded of. In the event of an emergency occurrence, and the Local Fire Department, or any other entity is summoned, all workers will report to this zone to be accounted for.

- Site security and control: In the event of an emergency, workers will notify the site supervisor or project manager of the situation, at that time, workers will report to the safe zone. The site supervisor and/or project manager will notify security and any other applicable authorities. Staying away from the immediate situation and not allowing any unauthorized personnel to enter until proper authorities arrive.

- Evacuation routes and procedures: Posted in GC Trailer

- Decontamination: If Necessary.

- Emergency medical treatment and first aid: Section located in Section 10, Medical Support.

- Emergency alerting and response procedures: It will be the duty of all workers onsite,
including subcontractors, to immediately report to the site supervisor and/or project manager, any and all emergencies.

2. Firefighting Plan

We at Sletten Construction Company limit our employees to portable fire extinguishers. The site supervisor at safety orientation will cover this Plan. The following topics will include:

The general principles of fire extinguisher use and the hazards involved with incipient stage firefighting.

Actions to be taken by authorized person(s):

- Evacuate area.
- Notify site supervisor and/or project manager.
- Determine if incipient fire.
- Utilize fire extinguisher.
- If fire or smoke is too great, report to safe zone.
- Make call to Fire Department if instructed by supervisor and/or project manager.

Actions to be taken by unauthorized person(s):

- Evacuate area.
- Notify supervisor and/or project manager.
- Report to safe zone.
- Make call to Fire Department if instructed by site supervisor and/or project manager.

Only approved fire extinguishers will be onsite and checked on a daily basis by the site supervisor. These will be located in the following areas, but not limited to:

- Inside field office.
- In any area where cutting or welding is taking place.

3. Posting of Emergency Telephone Numbers

As listed in Section 9, the posting of Emergency Telephone Numbers will be in your job field office, where all workers will have access to them. All employees and subcontractors will be made aware of these and the location at the safety orientation. The numbers are as follows:

<table>
<thead>
<tr>
<th>Fire Department:</th>
<th>Dial 911</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security:</td>
<td>Dial TBD</td>
</tr>
</tbody>
</table>
C. HAZARD COMMUNICATION PROGRAM

This site specific Hazard Communication Plan has been implemented in accordance with 29 CFR 1910.1200.

All areas in which hazardous chemicals will be stored shall have the proper label and/or signs. The MSDS for all chemicals on site will be located in a book labeled MSDS, in the project field office.

The training of employees and subcontractors will be as follows:

- Where to find this program
- What is in this program
- All chemicals on this jobsite
- What is an MSDS
- How to find specific information on an MSDS
- Labeling system
- What area these chemicals are stored in, map indicating
- The proper handling procedures for these chemicals
- Spill/release clean up protocol

Should there be an immediate threat to life or property, the emergency response plan for the installation, which is to be on file at the field office.

It is mandatory that all subcontractors submit, before a new chemical is introduced to the worksite, that the proper MSDS is submitted to the site supervisor/project manager. It will be the responsibility of the site supervisor to inform all employees and subcontractors of the new chemical(s), introduce the MSDS, and the potential hazards of that chemical. The site supervisor and/or project manager will have the responsibility to notify the Contracting Officer of any and all new chemicals brought onto the facility.

Chemical storage areas, if needed, to be located per PROJECT designated location.

D. RESPIRATORY PROTECTION PLAN

- See Appendix II
E. HEALTH HAZARD CONTROL PROGRAM

The goal for Sletten Construction Company is to make the workplace foolproof to the fullest extent feasible. It is an ongoing program, never finished.

1. Administrative Controls

Administrative controls include lengthened rest breaks, additional relief workers. Training, training, and more training.

2. Engineering Controls

If feasible, design the facility, equipment, or process to remove the hazard and/or substitute something that is not hazardous or is less hazardous. If removal is not feasible, enclose the hazard to prevent exposure in normal operations.

The most frequent sources for updating hazard information area routine inspections, employee reports of hazards, and accident/incident investigations. A good source for hazard information updates is the ongoing job hazard analyses, which will be performed by the site supervisor, on a monthly basis, or as needed. This documentation will be located at the job field office.

When exposure to hazards cannot be engineered completely out of normal operations or maintenance work, and when safe work practices cannot provide sufficient additional protection, a further method of control is using protective clothing or equipment. These include eye protection, leather work boots that come above the ankle, hard hats, hearing protection, gloves, and fall protection.

F. LEAD ABATEMENT PLAN

Not Applicable to this project.

G. ASBESTOS ABATEMENT PLAN

Not Applicable to this project.

H. ABRASIVE BLASTING

Not applicable to this project.
I. CONFINED SPACE
CONFINED SPACE ENTRY PROGRAM

INTRODUCTION

Every Confined Space is unique, therefore, each must be carefully evaluated and the hazards must be either eliminated or controlled before employees are allowed entry.

This program is established to inform employees of this company’s policy concerning work in confined spaces. Additionally, this program is intended to create an awareness of the hazards associated with work in confined spaces, as well as the procedures that shall be adhered to.

This program is intended to make employees aware of:

2. How to identify a confined space.
3. How to make a safe entry into a confined space.
4. Who can make a confined space entry.
5. Preventing unauthorized entry into confined spaces.

CONFINED SPACES

1. Confined Space (Definition for Construction – 1926.21[b][6]): Any space having a limited means of access and egress, which is subject to the accumulation of toxic or flammable contaminants, or has an oxygen deficient atmosphere.

2. Confined Space (Definition for General Industry – 1910.146): An enclosed space having the following characteristics:
   a. Contains or has been known to contain a hazardous atmosphere.
   b. Has the potential for the engulfment or entrapment of an employee.
   c. Has an internal configuration that could trap or asphyxiate the entrant (employee).
   d. Contains any other recognized serious safety or health hazard.

Confined Spaces may include but are not limited to:

- Manholes
- Culverts
- Tunnels
- Pipelines
- Septic tanks
- Storage tanks and vessels
- Underground utility vaults
- Pits over four feet deep

3. Prevention of Unauthorized Confined Space Entry: If any work place contains Permit Required Confined Spaces, management and supervision shall inform all employees of these hazards by posting signs and/or physical barricades.
Danger signs will read:

**DANGER!**

*Permit-Required Confined Space*

*Do Not Enter Without Permit*

**Any employee entering a confined space without following this procedure will be subject to immediate termination.**

4. Personnel:

   a. Entry Supervisor

      The individual appointed by management, normally the superintendent, will authorize all confined space entry. This person shall be knowledgeable about, and shall have training and education in the operations to be performed in confined spaces and is competent in evaluating hazards and administering confined spaces entry. (This person may also serve as an attendant.)

      The entry space supervisor shall receive training in:

      - The identification of confined spaces
      - The recognition of confined space hazards
      - The proper use of the Permit Entry System
      - The necessary procedures and practices for safe entry
      - The use of personal protective equipment
      - When and how to terminate entry operations
      - The implementation of rescue procedures
      - Dealing with unauthorized personnel
      - The termination of the permit upon completion of work

   b. Attendant

      The employee stationed outside the confined space to monitor the employees working inside the confined space and to restrict unauthorized entry. The attendant will insure that all employees log in and out of the confined space.

      The attendant shall receive training in:

      - The duties and responsibilities of a confined spa attendant
      - The accurate maintenance of entry records
      - Hazard recognition in and around confined spaces
      - The procedure to vacate confined spaces, when necessary
      - The methods of maintaining communication with entrants
• The procedure for summoning rescue and other emergency services when necessary
• The restriction of unauthorized entrants
• The methods of performing assigned emergency and rescue duties

c. Authorized Entrants (Employees)

Employees who have received training in safe entry and who work in confined spaces. All authorized entrants shall receive training in:

• The nature of hazards in confined spaces
• Entry procedures
• Hazard recognition
• Communication
• The use of mechanical ventilation
• The use of personal protective equipment
• The use of emergency equipment
• Self-rescue and emergency procedures

5. Planning for Confined Space Entry:

It shall be the responsibility of the entry supervisor to review all requests for confined space entries to be performed. The following steps shall be reviewed and discussed.

a. The date and time of entry
b. The work to be accomplished
c. The tools and equipment to be used
d. Anticipated hazards
e. Cleaning and ventilation
f. Lock-out procedures
g. Atmospheric testing
h. Rescue equipment
i. Personal protective equipment
j. Personnel to perform work
k. Record keeping

6. Confined Space Entry Permit:

This can only be initiated by an authorized entry supervisor. This supervisor shall insure that all requirements of the permit have been met. When completed, the entry supervisor shall be responsible for posting this permit at the entry location and removing it when the work has been completed. Copies of all entry permits shall be maintained on file in the office trailer with a copy forwarded to the Company Safety Director.

7. The Confined Space Entry Permit (Attachment 1) Shall Include:

a. Where the work will occur
b. Why the work is to be conducted
c. At what time will the work be performed

d. What personnel are authorized entrants

e. The name of the attendant

f. Hazards identified within the space
g. Methods used to isolate, reduce or eliminate these hazards

h. The establishment of acceptable entry conditions

i. Who will respond in an emergency, and how they may be contacted

j. How entrants and attendants will communicate

k. Other permits to be used (Lock out, Hot work, etc)
l. Authorizing signature

The entry permit will be terminated by the entry supervisor when all entrants, tools, and equipment have been removed from the confined space or if conditions change, such as:

- An emergency outside of the permit space exists (fire, chemical release, evacuation of the site, etc.)
- If conditions in the permit space become hazardous

An Entry Log (Attachment 2) will be attached to each permit. All entrants shall be required to sign in and out on each entry. Failure to sign in and out on the entry log will be grounds for immediate removal from the job site.

8. Hot Work Permit (Attachment 3)

If the work to be performed in the confined space will produce heat or an ignition source, the entry supervisor shall require that a Hot Work Permit be initiated (See Hot Work Program).

9. Respirator Protection:

Based on the type of work to be performed and the hazards identified in the confined space, appropriate respiratory protection shall be supplied to each employee performing work in the confined space. (See Respiratory Protection Program)

10. Emergency and Rescue

As a minimum, one employee with the appropriate training shall be at the entry location while entrants are performing work.

Rescue equipment that may be required to be at entry location:

- Hoist
- Lifeline
- Full Body Harness
- Ladder
- Lights
- SCBA
- First Aid Kit
- Stretcher

The procedure for contacting outside emergency help shall be established prior to the performance of any work in the confined space. These procedures should include, but not be limited to:
a. Method of contact:
   • Self-rescue and emergency procedures
   • on-site rescue – horn, radio, word of mouth
   • off-site rescue – telephone, radio dispatch to rescue facility, or radio to field office to telephone rescue assistance
b. The time required to reach the facility or job site
c. The rescue equipment available
d. The familiarity of rescue assistance with the facility or job site will be in charge of rescue efforts

J. CRITICAL LIFT PROCEDURES
   • Project specific

K. CONTINGENCY PLAN FOR SEVERE WEATHER
   • Project specific

L. DEMOLITION
All employees engaged in demolition activities shall be instructed in the demolition plan so that they may conduct their work activities in a safe manner.

M. EMERGENCY RESCUE (Tunneling)
Not applicable to this project.

N. UNDERGROUND CONSTRUCTION FIRE PREVENTION AND PROTECTION PLAN
Not applicable to this project.

O. COMPRESSED AIR PLAN
Air compressors are used for a variety of applications in Sletten Companies. Air compressor storage tanks store excess air that is generated from the compressor, providing a convenient and readily accessible air source. Because of the air pressure within these storage tanks, potential dangers can develop if certain practices and precautions are not followed. This safety policy and program provides guidelines for the safe use of air compressor storage tanks. It lists training requirements, guidelines for locating drains and traps, and requirements for gauges and valves.

RESPONSIBILITIES

   a. Supervisors
      • Ensure that only those employees who have been trained to work with air compressor storage tanks are allowed to operate such equipment.
      • Ensure that equipment needed is available and is in good working condition.
      • Ensure damaged equipment is removed from service until repaired and tested.
• Ensure that air compressor storage tanks are inspected every six months.
• Provide employees with Personal Protective Equipment (PPE) necessary for their job.

b. Employees
• Inspect air compressor storage tanks prior to use and note any damage or defects.
• Inspect all hoses and equipment before connecting to any compressed air system.
• Immediately report any damages or defects to their supervisors.
• Empty manual drains and taps on a regularly scheduled basis.

c. Safety Manager
• Provide prompt assistance to managers, supervisors, or others on any matter concerning this safety policy and procedure and provide training material for employees.

P. FRAMEWORK AND SHORING ERECTION AND REMOVAL PLANS
The demolition on this project will not require any shoring or framework.

Q. SCAFFOLD PLAN
1. The Company Safety Representative will maintain a supply of tags to be used on all scaffolding erected either by our employees or by subcontractor employees.

2. The tags will conform to the following color codes and will contain the wording shown.

   Green Tag – This scaffold was built to meet Federal OSHA scaffold regulations: it is safe to use.

   Yellow Tag – This scaffold does not meet Federal OSHA scaffold regulations; safety harnesses shall be worn.

   Red Tag – Warning – This scaffold is not complete; DO NOT USE.

3. The superintendent or foreman responsible for the scaffold erection shall inspect the scaffold for compliance with the OSHA regulations and shall sign his name to the tag.

4. On scaffolds that cannot be equipped with a standard top rail, midrail, and toeboard shall be marked with the Yellow Tag stating that “Body Harness Must be Used.”

5. Scaffold being constructed, torn down, or that is incomplete shall be marked with a Red Tag.

6. The Company Safety Representative will periodically monitor all scaffolding on the project to ensure proper tagging procedures are being followed.

7. Another contractor’s scaffold will not be used without the responsible contractor authorizing, in writing, the use of his scaffold by other employees. The contractor will inspect and re-tag his scaffold before use.
8. Any employee using a scaffold without a tag or a superintendent or foreman assigning an employee to work on a scaffold that is not tagged, will be subject to disciplinary action as outlined in Section 2, Rules of Conduct, in this Company’s Safety Manual or the Notice to Employee of Safety and Health Violation contained in the project Safety and Health Manual.

TUBULAR WELDED FRAME SCAFFOLD

GENERAL REQUIREMENTS

1. All scaffold shall be diagonally or cross braced or both to insure that it is square, aligned, and secure.

2. Scaffold legs shall be on adjustable bases or plain bases placed on mud sills or other foundations adequate to support the maximum rated load.

3. Frames shall be placed one on top of the other, with coupling or stacking pins to provide vertical alignment of the legs.

4. All panels shall be locked together vertically by pins or other equivalent suitable means.

PLANKING

1. Scaffold planking shall extend at least twelve (12) inches beyond the end of the support, or be cleated at both ends. Unsupported ends of planks shall not extend more than twelve (12) inches beyond support.

2. Scaffold planking shall be certified scaffold grade lumber as recognized by approved rating rules for the species of wood used. The maximum allowable spans for 2 x 10 nominal planking are as follows.

<table>
<thead>
<tr>
<th>SPAN (ft)</th>
<th>LOAD (psf)</th>
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</thead>
<tbody>
<tr>
<td>6</td>
<td>75</td>
</tr>
<tr>
<td>7</td>
<td>50</td>
</tr>
<tr>
<td>10</td>
<td>25</td>
</tr>
</tbody>
</table>

3. Scaffold platforms shall be fully planked between structure and guardrail.

4. Planking shall be secured to the scaffold when necessary to prevent uplift or displacement.

MOBILE SCAFFOLDING

1. The height of mobile scaffolding shall not exceed four (4) times its minimum base dimension.

2. Scaffolds shall be braced by cross and horizontal bracing.

3. Platforms shall be planked to the full width of the scaffold, and a ladder shall be provided for proper access and egress.
4. Proper top rail, mid rail, and toe boards shall be used.

5. Employees shall not ride on mobile scaffolding.

6. Mobile scaffolds shall be designed to support four times the maximum intended load. The casters on scaffolds will be pinned or wired to the frames to prevent uplift and will be equipped with a positive locking device.

7. Casters shall be locked when employees are working from the scaffold.

R. SAFETY AND HEALTH PLAN

All applicable plans, and requested certifications applicable by the PROJECT Safety and Health Program are within this complete Accident Prevention Plan. Sletten Construction Company has fulfilled all required Safety and Health Plans and Programs according to regulation, and will enforce all tasks relating to CFR 1910 and 1926 standards to ensure 100% safety.

S. BLASTING

Not applicable to this job site.

T. SUSPENDED WORK BASKETS/PLATFORMS

1. Work baskets/platforms shall be used only when other means of access have been determined to be more hazardous or impractical.

2. Work baskets/platforms shall not be used as elevators.

3. All work baskets/platforms shall be in compliance with OSHA standard 1926 550, August 1988.

4. A grab rail shall be provided inside the basket to minimize hand exposure.

5. Overhead protection shall be provided when employees are exposed to falling materials.

6. All personnel baskets/platforms shall be identified by highly visible colors or markings.

7. The platform shall have an identification plate specifying the empty weight of the platform and the weight for which the platform is rated.

8. Each platform shall be limited to a maximum capacity of four (4) persons.

RIGGING

1. Suspension of a work basket/platform from other than the main boom of a crane is prohibited.

2. Four-legged bridles shall be used to lift platforms.

3. Lifting bridles shall be used only for the platform for which they were designed and shall not be used for other lifting operations.
4. A wire rope sling shall be affixed from the uppermost part of the lifting bridle to a point above the ball or the dead-end load line of the load block or directly to the load block.

U. 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.

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 or airport property.
- 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.
V. FALL PROTECTION PLAN

This job site, personal fall arrest systems will be mandatory for every person on this job site at a height of 6 ft or more.

Personal fall arrest systems consist of the following type equipment:

- Full body harness
- Lanyard
- Horizontal and/or vertical lifelines
- Self-retracting lifelines
- Anchorages able to support 5,000 lbs.

1. Full body harnesses and double locking, shock absorbing, lanyards shall be worn and utilized whenever work is being done six feet or more above another surface and no other means of fall protection is available. When required by conditions, i.e. support posts for static lines, a second double locking, shock absorbing, will be utilized to insure 100 percent fall protection is provided at all times. (NOTE: FURTHER REFERENCE IN THIS MANUAL TO “HARNESS” AND “LANYARD” IS UNDERSTOOD TO MEAN A FULL BODY HARNESS AND DOUBLE LOCKING, SHOCK ABSORBING LANYARD)

2. Whenever possible, lanyard shall be secured to a sound structural member above the point of operation to prevent a fall of more than six feet. At no time will lanyards be wrapped around a structure.

3. Lifelines (static lines) shall be securely fastened and will consist of ½ inch wire rope to withstand a force of 5400 pounds. The lifeline will be protected from corners, sharp objects, or holes by means of shackles to prevent cutting.

4. Harnesses shall be worn on all

   a. Scaffold with incomplete decking or guardrail.
   b. Bridge or structure members with incomplete decking or guardrail.
   c. Sloping roofs.
   d. Areas within 6 feet to the edge of floors, roofs or other surfaces where there are no guardrails.
   e. When feasible during erection and/or dismantling of scaffolding.

NOTE: These requirements also apply to subcontractors and their personnel.

Prior to each use, a visual inspection of the harness, lanyard(s), and/or lifeline shall be made by the employee. Any defects shall be brought to the immediate attention of the supervisor and the defective item removed from service.
5. A thorough inspection of all harnesses, lanyard, and static lines shall be made by a qualified person at least quarterly. A record of this inspection shall be maintained at the project.

6. Guardrail systems will be installed and used in accordance with 29 CFR 1926 502.

7. Additional requirements for fall protection as contained in Subpart M 29 CFR 1926 500 – 503 will be complied with.

8. Prior to beginning work that requires fall protection, a Fall Protection Plan shall be submitted to the Construction Manager for approval.

[Diagrams Next Page]
Inspection of Fall Arrest Equipment

When to inspect your equipment:
- Each day before use
- More often when working near
  - Chemicals
  - Sharp objects
  - Welding operations
- At least 2 times per year by a competent person
- As required by manufacturer

Inspection Points
Lanyards
- Cuts/Holes/Broken Stitching
- Hard spots from chemicals/paint
- Burns and heat damage
- Measure length

Snaphooks and Hardware
- Damage, broken, non-functioning
- Cracks/corrosion/sharp edges

Think About It!

Harness Inspection
- Burns/cuts/holes
- Broken stitches
- Cracked/deformed hardware
- Intact readable label

Leg Straps
- D-Rings
- Stitch Blocks
- Shoulder Straps

No cuts/burns.
No broken stitching.

Inspect for roundness.
Snaphook works.

Document your results.

Remove if any holes larger than 1/16 inch.

No storage in gang boxes.

Inspect your equipment before EACH use.

Remove if impacted from a fall.

Read manufacturers instructions.
DETERMINING FALL CLEARANCE

Do you have enough Clearance?

- Are there structures you could hit below
- Are there structures you could swing into
- Are you working over dangerous equipment
- Are you working over rebar

Ways to shorten clearance distance

- Higher anchorage point
- Different equipment

<table>
<thead>
<tr>
<th>Clearance from Anchorage point to Ground</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of Lanyard .................... 6 ft</td>
</tr>
<tr>
<td>Length of energy absorber .......... 3.5 ft</td>
</tr>
<tr>
<td>Length from feet to D-Ring ....... 5 ft</td>
</tr>
<tr>
<td>Safety Factor to ground .......... 3 ft</td>
</tr>
</tbody>
</table>
X. REBAR PLACEMENT PLAN

HAZARDS OF REBAR

- WORKERS FALLING ONTO REBAR
- LACERATIONS TO THE SKIN/EYES/FACE
- WORKER TRIPPING OVER REBAR
- WORKER SLIPPING ON REBAR
- SCRAP BAR CAUSING UNSTABLE FOOTING

SEVERE IMPALEMENT HAZARD

METHODS OF PROTECTION

- CAPPING REBAR TO PREVENT IMPALEMENT
- CAPPING REBAR TO PREVENT LACERATION
- BENDING OVER REBAR TO PREVENT IMPALEMENT
- PROPER STORAGE AND CLEAN-UP

Clearance Considerations

- Always read the manufactures instructions for proper installation
- Consider obstructions below the fall area
- Consider swing hazards
- Different equipment may require more clearance
- Horizontal lifelines will sag during a fall and can require increased clearance
- When using rope for restraint, keep your rope short so that you cannot fall
- Rope lifelines stretch as much as 10-15%
2x4 Style Rebar Caps     Mushroom Cap     Reinforce Flat Cap

- All rebar that may be fallen onto or into must be capped
- Mushroom caps should only be used for horizontal rebar
- Flat caps have a steel plate inside and may be used on all rebar
- Flat caps provide impalement protection from falls of 7.5’ or less
- Match the cap size to the rebar
Y. NIGHT OPERATIONS LIGHTING PLAN
This plan is not applicable to this project.

Z. SITE SANITATION PLAN
Due to the nature of construction and the occupied environment, it is vital that proper sanitation requirements be maintained.

- Housekeeping will be a continuous process and will be everyone on the job site’s responsibility.
- Sletten Construction Company will remove the demolished material from the site the same day.

AA. FIRE PREVENTION PLAN
The following sections listed below are all contents of this Accident Prevention Plan. The information in these listed sections below all contains information that helps constitute this Fire Prevention Plan:

  7 Safety and Health Inspections
  12.b.3. Firefighting Plan
  12.b.4 Posting of Emergency Numbers
  12.c. Hazard Communication Program
  Z. Site Sanitation Plan

Through safety and health inspections, housekeeping, proper maintenance, proper storage and handling, ensuring all employees and subcontractors are performing their designated work duties properly, the handling of supplies and equipment as directed, following all guidelines set forth through operating manuals, instructions, and training, the risk of a job site fire can be avoided.

All employees and subcontractors require the proper storage of combustibles. Combustible liquids must be stored and covered in approved containers.

All chemical spills including, of course, combustible liquids, must be cleaned up immediately.

Note: Care must be taken when cleaning up chemical spills. Information on appropriate personal protective equipment, proper disposal, proper cleanup procedures, required ventilation, etc. is found on the products MSDS.

Cleanup materials and damaged containers must be properly disposed.

Combustible liquids and trash must be segregated and stored away from ignition sources.
Approved portable fire extinguishers will be checked on a daily basis, ensuring they are charged and ready for use.

Smoking is not permitted inside the facility.

All chemical and chemical products will be handled and stored in accordance with the procedures noted on their individual MSDS.

Debris will not be allowed to accumulate on the job site and will be maintained daily.

Sletten Construction will request a Hot Work Permit from the PROJECT Rep or Safety Office to perform acetylene oxygen welding, brazing and cutting, the following precautionary measures will be required as part of this permit along with any additional requirements by the PROJECT (Hot Work):

- Inspect all surroundings and equipment to ensure that combustible substances are not present in any area where contact of metal at a temperature above the flashpoint of any compound is possible.

Ensure that no open containers or spills of combustible substances are present.

Ensure that ignition is not possible by conduction, convection, radiation, or dispersion of molten metal.

- Proper protection equipment and practices will be used, i.e., fireproof blankets, removal of combustible materials where practicable, and portable fire extinguishers of proper type on hand.

- When the above operations are in use a continuous Fire Watch will be performed while equipment is being used.

- Training in fire protection will occur at the site safety orientation. This training shall include the following topics, but not limited to:
  - Site Mapping
  - Portable Fire Extinguishers
  - Individual Roles and Responsibilities
  - Fire Watch
  - Response Plans
  - Safe Zone
  - Notification
13. CONTRACTOR INFORMATION
Sletten Construction Company will make every effort possible to perform and enforce all Safety and Health issues. The following topics give insight as to how we plan to implement and handle job tasks, PPE, etc.

A. WALKING/WORKING SURFACES
Slips, trips and falls caused by poorly maintained or cluttered walking surfaces and work areas are a leading cause of workplace injuries. Employees may encounter the following hazards:

- Working near debris removal.
- Working near material receiving areas.
- Uneven work areas.

FLOOR OPENINGS

HAZARDS OF FLOOR OPENINGS
- Workers falling through
- Materials/tools falling through
- Equipment falling through
- Welding sparks falling through

WHAT IS CONSIDERED A FLOOR OPENING
- Any opening 2” or larger
- Skylights
- Openings in decking
- Opening in Concrete

HOW TO PROTECT FLOOR OPENINGS
- Guardrails
- Must support 200lbs
- Install toe-boards
- Cover holes with material that will support 2x the load
- Install cleats or nail down covers
- Label the cover as a “HOLE” or “COVER
- Never partially cover a hole
- Do not use Styrofoam
- Never cover with plastic only
- Never leave an open hole unattended
B. FALL HAZARDS/GUARDRAILS

GUARDRAILS

When to use guardrails
- Around open sided floors
- Floor and roof openings
- Around pits and shafts
- On Scaffold
- On ramps

Building Guardrails
- Use materials able to withstand 200lb force
- Install top rail between 39” to 45”
- Install mid-rail between top-rail and floor
- Install toe-boards to keep debris from falling into opening

Working around Guardrails
- Never climb on guardrails
- Never tie off to guardrails
- Always replace guardrails if removed for material handling
- Inspect guardrails for proper support and function

When using cable handrail
- Must support 200lbs
- Flag every 6’
- Cannot deflect more than 3”
- No sharp edges or wires
C. PORTABLE LADDERS

1. All ladders shall be inspected prior to use and periodically while in use.

2. Side rails of a ladder shall extend at least 36 inches above any landing.

3. Portable metal ladders shall not be used where there is potential for electrical contact.

4. Neither straight nor extension ladders shall be used unless they are properly secured at the top, and bottom if possible, to prevent tipping, falling, or slipping.

5. Ladders shall not be used over machinery with exposed moving parts unless such parts are properly guarded to prevent employee contact in the event of a fall.

6. Portable ladders shall be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is about one-quarter of the working length of the ladder (4 foot up, 1 foot out).

7. Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.

8. Employees shall ascend and descend facing the ladder and shall use both hands for support. A rope shall be used for raising or lowering materials or equipment when a ladder is used for access to upper levels.

9. When stepladders are used in their open position, they shall be opened fully and locked into position. Employees shall not stand on the top rung of any step ladder.

10. Stepladders are not to be used for access to or from upper levels nor are they to be leaned against walls or other structures for work purposes.

11. Wires, cables or ropes being installed or removed shall not be attached to ladder or personnel working on them.

12. Ladders shall not be used if rungs are broken or missing, if steps are broken or split, or if other defects are discovered.

13. Employees climbing a ladder with a fall exposure greater than 24 feet, shall be protected by an approved cage, ladder climbing device, or by the use of a body harness, lanyard & lifeline system.

14. Whenever possible, access to elevations over 15 feet will be accomplished by the use of stair towers.

JOB-MADE LADDERS

1. All material for job-made ladders shall be thoroughly seasoned, straight grained lumber that is free of knots, decay, and other defects.
2. Job-made ladders shall be constructed for a specific intended use.
   a. Double cleated ladders shall be constructed when a ladder must provide the only access to or egress from a work area for 25 or more employees, or where two way traffic is expected.
   b. Double cleated ladders shall not exceed 30 feet in length

3. Single cleat ladders shall not exceed 30 feet in length.

4. The width of a single cleat ladder shall be at least fifteen (15) inches, but not more than twenty (20) inches between rails at the top.

5. Normal 2 x 4 lumber shall be used for side rails of single cleat ladders whose length does not exceed sixteen (16) feet. Normal 2 x 6 lumber shall be used for single cleat ladders whose length is from sixteen (16) feet to thirty (30) feet.

6. Normal 2 x 4 lumber shall be used for the sides and middle of double cleated ladders up to twelve (12) feet long. Normal 2 x 6 lumber shall be used for double cleated ladders from twelve (12) to twenty four (24) feet.

7. Cleats of ladders shall be of full 1 x 4 lumber and shall be inset into the side rails by one-half (1/2) inch, or filler blocks shall be used. Cleats shall be uniformly spaced twelve (12) inches from top to top. Duplex nails shall not be used for securing cleats to rails.

D. EXIT SAFETY DURING EMERGENCIES
During fire or other emergency it is critically important that workers are able to get out of the work area to safety in a quick and orderly fashion. A site emergency response plan has been implemented; all workers on site will be familiar with these procedures. These include:

- Knowing the alarm sound.
- Knowing where to gather to be accounted for
- Knowing ones role during an emergency

E. AERIAL AND MAN LIFTS
Aeration lifts shall be designed and constructed in conformance with the applicable requirements of the American National Standards for “Vehicle Mounted Elevating and Rotating Work Platforms”. ANSI A92.2-1969, including appendix. Aerial lifts include the following types of vehicle-mounted aerial devices used to elevate personnel to job locations above ground level.

1. Extensible Boom Platforms(Require 100% Tieoff)
2. Aerial Ladders
3. Articulating Boom Platforms
4. Vertical Towers

5. A combination of any of the above

Aerial equipment may be made of metal, wood, fiberglass reinforced plastic (FRP), or other material, may be powered or manually operated; and are deemed to be Aerial Lifts whether or not they are capable of rotating about a substantially vertical axis.

Articulating boom and extensible boom platforms, primarily designed as personnel carriers, shall have both platform (upper) and lower controls. Upper controls shall be in or beside the platform within easy reach of the operator. Lower controls shall be able to override the upper controls. Controls shall be plainly marked as to their function.

NOTE: All Aerial lifts or equipment shall be inspected monthly by a competent person. The Company Safety Representative will retain a record of these inspections and will furnish a copy to the Construction Manager. (In addition, this requirement will apply to any crane brought onto the project with forms be obtained from the Construction Manager. Cranes are also required to have an annual inspection with a copy also being furnished to the Construction Manager.

F. COMPRESSED GASES

Compressed gas cylinders may be used at this worksite. These cylinders and gases present an injury hazard in the event that a regulator or cylinder is damaged and/or broken. The particular gases used will be acetylene. These hazards will be reduced by routine inspections and maintenance of compressed gas cylinders and by assuring all the units are secured from tipping.

Compressed gas cylinder will be kept away from excessive heat, will not be stored where they might be damaged or knocked over by passing or falling objects. The storage of oxygen and fuel gas compressed cylinders will be separated by at least 20 ft.

G. FLAMMABLE/COMBUSTIBLE MATERIALS

There will be no need for any storage or fuel tanks on this project.

1. Flammable liquids shall be used only in small amounts. They shall be dispensed in self-closing approved safety cans. For quantities of one gallon or less, only the original container or approved metal safety can shall be used ("JERRY" CANS OR PLASTIC GAS CANS ARE PROHIBITED).

2. “NO SMOKING” signs shall be posted in all areas where flammable liquids are used or stored.
H. PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) includes hard hats, gloves, safety glasses, leather work boots, hearing protection, and personal fall protection.

a. **Eye Protection**

Safety glasses used for any worker performing or observing tasks that may result in flying objects, dust, etc. exposing them to eye injury.

During welding/cutting operations, the required filter lenses will be utilized according to the operation, electrode size and arc current.

b. **Head Protection**

All workers on this site will be required to wear approved hard hats when working in the close proximity of heavy equipment and where structural steel is being hoisted.

c. **Foot Protection**

All workers will be required to wear the appropriate foot protection.

d. **Hand Protection**

Workers may be exposed to hand injuries from sharp objects, abrasive materials, and weather. Gloves designed to protect against the specific hazard encountered are an effective means of reducing such risks and will be used on this project.

e. **Hearing Protection**

Any area with noise levels at or above 85dba will be required to wear hearing protection. When workers are utilizing loud equipment, or being exposed to such levels, hearing protection shall be provided. These levels are not anticipated on this project.

<table>
<thead>
<tr>
<th>DECIBEL - dBA</th>
<th>EQUIPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>112</td>
<td>Pile driver</td>
</tr>
<tr>
<td>110</td>
<td>Air arcing gouging</td>
</tr>
<tr>
<td>108</td>
<td>Impact wrench</td>
</tr>
<tr>
<td>107</td>
<td>Bulldozer - no muffle</td>
</tr>
<tr>
<td>104</td>
<td>Air grinder</td>
</tr>
<tr>
<td>102</td>
<td>Crane - uninsulated cab</td>
</tr>
<tr>
<td>101-103</td>
<td>Bulldozer - no cab</td>
</tr>
<tr>
<td>97</td>
<td>Chipping concrete</td>
</tr>
<tr>
<td>96</td>
<td>Circular saw and hammering</td>
</tr>
<tr>
<td>96</td>
<td>Jack hammer</td>
</tr>
<tr>
<td>95</td>
<td>Quick-cut saw</td>
</tr>
<tr>
<td>94</td>
<td>Masonry saw</td>
</tr>
<tr>
<td>90</td>
<td>Compactor - no cab</td>
</tr>
<tr>
<td>87</td>
<td>Crane - Insulated cab</td>
</tr>
<tr>
<td>86</td>
<td>Loader/backhoe - insulated cab</td>
</tr>
<tr>
<td>85-90</td>
<td>Grinder</td>
</tr>
<tr>
<td>85</td>
<td>Welding machine</td>
</tr>
<tr>
<td>80-70</td>
<td>Bulldozer - insulated cab</td>
</tr>
<tr>
<td>60-70</td>
<td>Speaking voice</td>
</tr>
</tbody>
</table>

*Table 1: Some typical noise levels found on construction sites*
f. Personal Fall Protection

Sletten Construction Company requires all employees working at or above 6’ to wear personal fall protection, unless the personal fall protection creates a safety hazard by utilizing it. In that case, other means of fall protection shall be provided. Workers that may be performing work on ladders are instructed to adhere to the following:

For work that requires scaffolding use for employees and subcontractors, personal fall protection shall be mandatory, unless working less than 6 ft. The following topics listed will be conveyed to workers prior to scaffolding use:

- Review scaffolding supplier pamphlet for proper construction
- Inspect scaffolding structure before initial use/and daily
- Report any defects immediately / do not use / tag out of service
- Placement of structure
- When fall protection is required
- What you can tie off to

I. SAFETY SIGNS

Signs will be posted at this site to aid in warning workers and pedestrians of dangers and/or reminding them of safety work practices.

Signs that will apply to this job site include the following:

- Compressed gas storage
- No Smoking
- Fire extinguisher locations
- Lock out/tag out
- Construction area / authorized personnel only
- First Aid

Employees and subcontractors will be instructed to recognize and understand the above listed signs and tags.

J. MEDICAL AND FIRST AID

Worker’s health and safety is jeopardized if medical care facilities and first aid are not readily available in the event of injury or illness. Rapid and appropriate response to emergency situations will save lives and reduce the severity of injury.
Appropriate emergency response to medical situations has been outlined in Section 03, Medical Support.

Every employee will be made aware at the site safety orientation of the set guidelines for notification, response, where the first aid kit is located, and emergency phone list location. The first aid kit will be checked weekly for needed additional supplies.

**K. FIRE PROTECTION**

As stated in the flammable/combustible section of this document, compressed gas cylinders will be located on site. Designated smoking areas, portable fire extinguishers, cautions during cutting/welding operations, etc., are located throughout this document in under various, but applicable topic areas.

**L. FIRE EXTINGUISHERS**

Portable fire extinguishers will be located no more than 20’ from any flammable/combustible storage and/or use area. Also one will be located in the field office.

1. All portable fire extinguishers will be maintained in good operating condition. This will be accomplished by conducting a monthly inspection and any fire extinguishers found to be inoperable or that have been discharged, will be removed from service and replaced with operable equipment.

2. Access to fire extinguishers will not be obstructed.

3. All employees shall be trained in the use of fire extinguishers and shall be familiar with the location of fire extinguishers on the job site.

4. There shall be a sufficient number of fire extinguishers located throughout the project site for protection of buildings, storage areas, and equipment. In buildings, there shall be one fire extinguisher for every 3,000 square feet. Fire extinguishers will also be located with all welding and cutting operations.

5. Fire extinguishers will be serviced on a yearly basis.

**M. POWERED INDUSTRIAL TRUCKS**

**Forklift Safety**

To further enhance safety at SLETEN COMPANIES, we have instituted programs and policies to ensure the safe operation of forklifts/lift trucks. Only properly trained and certified employees are authorized to operate forklifts. SLETEN COMPANIES recognizes that the operation of forklifts is a hazardous operation, requiring full attention of the operators and the workers in the area. Failure to follow these guidelines may result in disciplinary action up to and including termination.

**Operator Qualifications**

Like any other vehicle, forklifts can cause serious injury or extensive property damage, if improperly used. All SLETEN COMPANIES employees must be trained and evaluated prior to operating any industrial lift device.
Operator Training
Training will consist of knowing the basic characteristics between a forklift and an automobile, also understanding the Stability Triangle and center of gravity. The operator will read and review the owner’s manual with his/her instructor. Walk around inspection of the forklift to be operated will discuss safe operation of each specific device and understanding the controls and gauges. The trainee will be instructed on the correct procedures for identifying load weights, forklift capacity and refueling or recharging. Understanding your work place and identify conditions on a daily basis in which the forklift is to be operated. The trainee will be required to take a test of his/her knowledge on forklift mechanics and operations. The test will require a passing grade of 80%. 29 CFR 1910.178 is fully covered.

General Safety Rules
- Prior to operation all safety equipment must be in good condition and in good working order.
- Forklifts shall not be driven on any surface other than surfaces specified by the manufacturer.
- no person shall be allowed to stand or pass under the elevated forks, whether Loaded or empty.
- Forks shall be fully lowered, controls shall be neutralized, power shut off and the parking brake set when the left is left unattended.
- Smoking is prohibited when fueling, battery charging, and during operations which involve checking these fluid levels.
- Only loads within the rated capacity shall be handled.
- Grades shall be ascended and descended slowly. When the grade is in excess of 10 percent, loaded lifts will be driven with the load upgrade.
- While negotiating turns, speed shall be reduced to a safe speed
- Forklifts shall only have the operator aboard “NO RIDERS.”
- Every forklift will be equipped with a fire extinguisher and operators manual.
- No person on the forks without an approved work platform.

Equipment Operators Evaluation
Each operator shall be evaluated by SLETTRAN COMPANIES Safety Director or Superintendent, and demonstrate their ability to safely operate the lift device before being authorized to operate each specific device. The evaluation will be conducted at least once every three years.

Refresher Training
Operators involved in accidents and/or near miss incidents, or have been referred for unsafe operating procedures, shall be required to complete refresher training as designated by SLETTRAN COMPANIES Safety Director. Refresher training may also be assigned for operators who will operate a different type of forklift and/or during operator evaluation where additional training has been recommended due to performance.

Operators Care of Equipment
Operators shall perform routine inspections to ensure the device is in a safe working condition. At no time shall an operator operate an unsafe device or exceed the capacities of the device. If at anytime an unsafe forklift and/or device is noticed, park the forklift and report the condition with the keys to the superintendent. If available attach a sign, ribbon or tag notifying others that the forklift is inoperable.
Equipment Maintenance
No maintenance or repair functions may be completed on any industrial lift device, except by those personnel who are properly trained and authorized to complete such work.

POLICY STATEMENT
Due to new OSHA regulations covering the utilization of forklifts, SLETten Companies forklifts are to be used solely by properly trained and certified SLETten employees. There is to be no utilization by subcontractors or suppliers. This policy shall be strictly enforced, without exception.

Record Keeping
Training Certificates and operator tests will be maintained in the employee’s personal file at the main office and in a Training log on the jobsite.
Every operator will receive a certificate and a hard hat sticker indicating he/she has been properly forklift trained.

N. CRANES
- See APPENDIX I

O. HAND AND PORTABLE POWERED TOOLS AND OTHER HAND-HELD EQUIPMENT
A wide variety of hand tools may be utilized at this worksite. Sletten Construction Company will ensure the safe condition of all tools and equipment, including those furnished by the workers, through frequent and regular job site inspections. Also ensure that the proper use, inspections, and maintenance procedures take place.

1. Tools shall be inspected by the user daily. When they appear unsafe, or become damaged, their condition will be brought to the immediate attention of the supervisor or foreman. The tool will be tagged with a “Do Not Use” tag, the serial number written on the tag, and signed by the supervisor or foreman. The tool will then be given to the company safety representative so that repairs can be made or a replacement acquired. The tag will be maintained by the company safety representative until repairs are made. Prior to the tool being issued to the field, the superintendent or foreman who turned in the tool, will verify repairs and date and sign the tag authorizing reissue.

2. All portable electric power tools shall be double insulated or effectively grounded by means of a three wire cord and grounding plug.

3. All hand and power tools and similar equipment, whether furnished by the employer or the employee, shall be maintained in a safe condition.
4. Employees whose job requires the utilization of powder-actuated tools, will be required to produce a certificate of training prior to being allowed to use the equipment. If a certificate of training is not available, training will be conducted prior to the individual using the equipment. **Powder-actuated equipment will be inspected on a regular basis. If found defective, it will be tagged and removed from service until it has been repaired or replaced.**

5. Extension cords for general maintenance and construction shall be flexible, heavy duty, reinforced material, sheathed with rubber or equivalent.

6. Ground fault circuit interrupters shall be used with all power tools and cords. These shall be used regardless of the power source, including portable and wheel mounted generators. The ground fault circuit interrupter shall be tested before each use.

**P. ELECTRICAL EQUIPMENT**

The electrical equipment on this project will be minimal, however what is used, will be in good working order with no noted defects. All extension cords etc. will be protected by a GFCI. Again, Sletten Construction Company will ensure, through equipment handling, operating, and storage training, along with inspections, that all equipment brought to this job site is in good condition.

**Q. TOXIC AND HAZARDOUS SUBSTANCES**

Employees and subcontractors will be made aware of all substances brought onto the facility, as well as potential substances they could possibly encounter while working here on this site. The information will be included in the site safety orientation. This part is covered in the Hazard Communication Program located within this document.

**R. HAZARD COMMUNICATION**

Employees and subcontractors will be provided information identifying the hazardous substances in the workplace and describing safe handling procedures.

Sletten Construction Company will inform employees and subcontractors about the hazardous chemical to which they have the potential to be exposed to, by means of a Hazard Communication Program. Included in this HazCom Program are MSDS, labels, sign recognition and meaning, and other applicable training. The site supervisor at the site safety orientation will provide this.

**S. LOCK OUT/ TAG OUT**

The Owner/Sub Contractor will hang tags on valves or breakers as requested by the Sletten project manager. After the Owner/Sub Contractor places their lock on the device, then Sletten Construction Company will be allowed to place their lock on the device. When clearing the Lock Out Tag Out, Sletten Construction Company will remove our locks and notify the Owner/Sub Contractor. The Owner/Sub Contractor will then remove their locks and reposition the valve or breaker at the request of Sletten Construction Company.
T. WELDING/CUTTING OR OTHER HOT WORK

GENERAL REQUIREMENTS

1. All torches, hoses, regulators, welding cable, electrodes, etc. shall be inspected daily. Defective or damaged equipment shall be turned in to the supervisor for repair or replacement.

2. When irritating fumes occur while burning-cutting, heating, or welding, inform the supervisor immediately.

3. Prevent hot slag and sparks from falling onto personnel or equipment.

4. Keep cylinders far enough away from the actual welding or cutting so that sparks, hot slag or flame will not reach them. When this is not practical, fire resistant shields will be used.

5. A fire extinguisher will be maintained with the oxygen/acetelyne cart or welding machine. If there is a danger of fire, an individual shall be used for fire watch.

BURNING-CUTTING & HEATING

1. Keep oil, grease, and all other lubricants off burning-cutting and heating equipment.

2. Use hot water to thaw out regulator in cold weather. DO NOT use an open flame on regulators.

3. Flash-back arrestors shall be installed on all burning-cutting and heating equipment. This equipment shall not be used if this arrestor is not installed.

4. Always insure that the oxygen pressure is higher than the fuel gas pressure in the cylinders and hoses.

5. For quick closing in case of an emergency, valves on fuel gas cylinders shall not be opened more than one and one-half (1 ½) turns.

6. Hoses shall be kept clear of passageways, ladders, and stairs.

7. Use standard friction spark light for lighting torches. Matches and cigarette lighters are not approved.

8. Keep all heated metal off concrete and prevent the build-up of hot slag on concrete. Excessive heat build-up can cause concrete to explode.

9. Close cylinder valves and bleed off hose pressure when work is stopped for over one hour.
WELDING

1. A screen or barrier shall be used when welding operations are to be conducted within twelve (12) feet of other personnel.

2. Employees SHALL NOT loop welding leads around their shoulders or other parts of their body.

3. Spent welding rods shall be picked up and disposed of daily.

4. The frames of all welding machines shall be grounded.

5. Remove the welding rod from the holder when leaving the work area.

6. Welding machines shall be turned off when the welder leaves the work area when the work is completed or at the end of the work shift.

7. Insure the ground clamp is securely fastened.

8. To prevent shock:
   a. Touch only one electrode holder at a time.
   b. Do not touch the end of an electrode when inserting or removing it from the holder.
   c. Do not place hot electrode holders in water.

NOTE: FOR FURTHER INFORMATION ON “HOT WORK” AND REQUIREMENTS FOR OBTAINING A WELDING/CUTTING HOT WORK PERMIT, REFER TO SECTION 10.

STORAGE AND HANDLING OF COMPRESSED GAS CYLINDERS

1. Protective caps shall be kept on all cylinders that are not in use, being moved, or stored.

2. All compressed gas cylinders shall be stored and secured in an upright position at all times except, when necessary, when being moved or hoisted.

3. Oxygen shall be separated from all other fuel gases in storage by either a separation of twenty (20) feet or a one half (1/2) hour fire barrier except when in use and secured on an approved cart.

4. Compressed gas cylinders shall not be taken into confined spaces.

5. Compressed gas cylinders shall not be stored with petroleum products (DO NOT STORE CYLINDERS AND GASOLINE/DIESEL FUEL IN SAME AREA)

6. LPS cylinders will not be stored inside buildings or tool vans.
U. TRENCHES AND EXCAVATIONS

PURPOSE

1. To establish guidelines for safe work practices for employees working in excavations.

SCOPE

1. This program applies to all employees and employees of subcontractors working on our job sites.

EXCAVATION

1. A competent person shall be on the job site where employees are required to enter and work in excavations.

2. The competent person shall have training and experience in the hazards associated with excavation operations, the requirements of OSHA 29 CFR 1926.650, 651, ad 652, and have management authority to take the necessary actions to abate hazards.

3. Prior to the start of work, an inspection of the excavation shall be made and documented, for evidence of situations that could result in a cave-in or the failure of shoring equipment. Inspections shall also be conducted periodically as work progresses, after rain storms, or other hazard-increasing occurrences. If evidence of a potential cave-in or failure of a protective system is discovered, employees shall be immediately removed from the excavation until the hazard has been corrected.

4. Excavations four (4) feet or more in depth shall have a ladder, ramp or stairs located so that employees do not have to travel more than twenty-five (25) feet laterally to gain access to exit the excavation.

5. Ladders shall extend a minimum of thirty-six (36) inches above grade and will be secured to prevent displacement.

6. Trees, boulders, structures, or other obstacles that could fall into the excavation shall be identified prior to the opening of an excavation and supported or removed while the excavation is open.

7. Prior to the opening of an excavation, One Call shall be notified and asked to identify all underground utility installations in the area where the excavation operation will take place.

8. If after 72 hours One Call has either not responded or cannot identify the exact location of underground utility installations, the excavation can be started. Caution shall be exercised to insure that utility installations are not damaged or employees exposed to the hazards of the installation.

9. While excavations are open, underground utility installations shall be protected, supported, or removed to safeguard employees.
10. Excavations of less than four (4) feet in depth may be dug with vertical sides as long as an examination by a competent person provides no indication of a potential cave-in.

11. All excavations of four (4) feet or more in depth shall be benched, sloped, stored, or shielded to protect employees.

12. Spoil piles shall be stored no closer than two (2) feet from the edge of the excavation.

13. All employees exposed to public vehicular traffic shall be issued, and required to wear, high-visibility warning vests.

14. Where a hazardous atmosphere exists, or could reasonably be expected to exist or develop, the atmosphere in excavations three (3) feet or more in depth will be tested prior to allowing employees to enter the excavation.

15. No employee shall be allowed to enter excavations where the atmosphere contains less than 19.5 percent oxygen and where there are flammable gases present in quantities greater than 20 percent of the lower flammability limit for gas.

16. Where hazardous atmospheres exit or could reasonably be expected to develop, emergency rescue equipment shall be available at the work site and ready for use. (Refer to Respiratory Protection Program and Confined Space Entry Program.)

17. Protective systems for excavations five (5) feet or greater in depth shall be designed by a Registered Professional Engineer licensed in the State of Nevada. This information will be submitted to the Construction Manager as an attachment to a completed Trenching and Excavation Notice. Work will not commence on an excavation, regardless of the depth, until an approved Trenching and Excavation Notice is returned by the Construction Manager.

18. No employee shall be exposed to overhead loads handled by lifting or digging equipment.

19. All employees who are required to work in excavations shall receive training in the hazards associated with excavation work. This training shall be documented and maintained on file at the job site.

20. This program along with Subpart P, 29 CFR 1926.650, 651, and 652 and OSHA Instruction CPL 2 87, Inspection Procedures for Enforcing the Excavation Standards – 29 CFR 1926, Subpart P, shall be maintained in the various company offices and at all job sites. It shall be sued by the project superintendent to insure compliance.
THE FOLLOWING HAS BEEN EXTRACTED FROM THE FACILITY IMPROVEMENTS PROJECT SAFETY AND HEALTH MANUAL, DATED MARCH 1995. BECOME FAMILIAR WITH THE CONTENT IN ORDER TO COMPLY WITH THE REQUIREMENT OF THE POLICY.

BARRIER TAPE IDENTIFICATION SYSTEM

In order to uniformly identify particular hazards on the construction site, a barrier tape identification system has been developed for use by all of the contractors working on the construction of the SNWS Facilities Improvements Project.

It has been developed so that any employee working on the site, regardless of employer, can recognize and avoid a hazard when properly marked.

The following barrier tape identification system shall be used:

1. General purpose—Multicolor triangular flagging. Used for open manholes, trenches, excavation, etc., “Use Caution When Crossing”.

2. General – Red tape (may have black in it) “Do Not Cross”.

3. Electrical – Yellow (May have black in it). Open wiring, switchgear, etc., “Do Not Cross”.

4. Radiation – Yellow and magenta (Purple) tape. Possible radiation hazard, X-ray, etc., “Do Not Cross”.

The contractor erecting the barrier tape shall hang a tag on the tape that indicates the hazard, name of contractor and name of person erecting tape.

The barriers shall be erected far enough back from the hazard to allow for adequate warning and protection from the hazard. The barrier shall be constructed so that it will stand against adverse weather conditions and construction traffic.

If the hazard is of a magnitude which requires additional protection, it shall be the contractor’s responsibility to provide additional protection as well as the barrier tape. It will be the responsibility of the contractor erecting the barrier tape to maintain it as long as the hazard is present.

- Determine the approximate location of utility installations, sewer, telephone, fuel, electric, and water lines: or any other underground installations.

- Contact the utility companies or owners involved to inform them of the proposed work within established or customary local response times.

- Ask the utility companies or owners to find the exact location of underground installations. If they cannot respond within 24 hours (unless the period required by state or local law is longer) or cannot find the exact location of the utility installations, you may proceed with caution.
If your excavation work exposes underground installations, OSHA regulations require you to protect, properly support, or remove them.

**What should you tell workers before they start the project?**

When you share the details or your safety and health program with employees, it is important to emphasize the critical role you expect them to play in keeping the jobsite safe. You may want to emphasize specific rules to help reduce the risk of on-the-job injuries. These rules may include requirements that workers:

- Remove or minimize all surface obstacles at the worksite that may create a hazard.
- Wear warning vests or other reflective or high-visibility garments that you provide when they are exposed to vehicular traffic.
- Wear or use prescribed protective gear and equipment correctly.
- Operate equipment only if they have been trained properly in its use and alerted to its potential hazards.
- Follow safe work practices.

It also is important to establish and maintain a safety and health management system for the worksite that provides adequate systematic policies, procedures, and practices to protect employees from, and allow them to recognize, job related safety and health hazards.
PROTECTIVE SYSTEMS

How can you prevent cave-ins?

OSHA requires that all excavations in which employees could potentially be exposed to cave-ins be protected by one of the following methods.

- Sloping or benching the sides of the excavation.
- Supporting the sides of the excavation, or
- Placing a shield between the side of the excavation and the work area.
Figure 20-1: Sloping in lieu of shoring

Case 1 (trench or bulk excavation) - maximum slope of excavated face, shown as line AB, in hard and solid soil is 3 horizontal to 4 vertical.

Case 2 (trench or bulk excavation), maximum height of vertical portion, shown as line AB is 1.2 metres (4 feet).

For Case 2 (trench or bulk excavation), the maximum permissible slope of the excavated face BC for the corresponding height of the lower vertical cut AB is as follows:

<table>
<thead>
<tr>
<th>Height of line AB</th>
<th>Maximum slope of line BC (in hard and solid soil)</th>
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</thead>
<tbody>
<tr>
<td><strong>centimetres</strong></td>
<td><strong>feet</strong></td>
</tr>
<tr>
<td><strong>up to 30</strong></td>
<td>up to 1</td>
</tr>
<tr>
<td><strong>30 to 60</strong></td>
<td>1 to 2</td>
</tr>
<tr>
<td><strong>60 to 90</strong></td>
<td>2 to 3</td>
</tr>
<tr>
<td><strong>90 to 120</strong></td>
<td>3 to 4</td>
</tr>
<tr>
<td><strong>1 horizontal (H) to 1 vertical (V)</strong></td>
<td><strong>3H to 2V</strong></td>
</tr>
<tr>
<td><strong>3H to 1V</strong></td>
<td><strong>2H to 1V</strong></td>
</tr>
<tr>
<td><strong>3H to 1V</strong></td>
<td></td>
</tr>
</tbody>
</table>
Figure 20-2: Benching in lieu of shoring

Case 1: Workers may be on any bench or at the bottom of the excavation.

Case 2: Workers may be on the bench or at the bottom of the excavation.

Case 3: Workers may only be at the bottom of the excavation.

For each case:
- Point A is the bottom or the deepest part of the excavation.
- Point B is original or unexcavated ground level.
- Maximum difference in elevation between A and B (Max. depth of excavation) is 6 metres (20 feet).
- Maximum height of each bench (h1, h2, h3, h4) is 1.2 metres (4 feet).
- In all cases, if maximum depth of excavation is greater than 6 metres (20 feet), instructions from a professional engineer must be followed.
14. SITE-SPECIFIC HAZARDS AND CONTROLS
While working at the PROJECT, the Sletten Construction Company will comply with OSHA regulations.

The hazards that have the potential to occur at this job site, along with the controls to prevent incidents or accidents are listed below. Throughout this document, are the listed hazards in the tasks that are required to perform this project. Also throughout this document, are the many controls in which we, Sletten Construction Company, will do the best job possible to enforce.

15. SECURITY
Badging

If Security is Required at this Project and if it is required at all times it will be everyone’s responsibility. It is imperative that orders and/or directives from a PROJECT rep are respected and followed by all involved on the property.
PROJECT Issued Identification (ID) Badge Requirements

Badging Office Location/Hours

Who Must Obtain a PROJECT ID Badge?

Each Contractor employee working at a construction site in secure areas must obtain a PROJECT ID badge. This badge must always be displayed on the outermost garment above the waist while inside the secure area. Failure to do so may result in criminal and civil penalties, revocation of the badge, and the individual being barred from the secure area.

Contractor Registration Requirements

Designation of Authorized Signer: TBD

The Contractor shall designate a representative(s) who is/are responsible for signing all PROJECT ID badge applications, including those for subcontractor employees. These individuals are also the contact point for badging and security-related information.

An application must be completed for each individual requesting a PROJECT ID badge.

All applications must contain an original signature. The application must be signed by an authorized Sletten Construction representative.

No one will be badged for secure access if the results of a drug test come back positive.

Each applicant must provide identification documents that show proof of identity and eligibility to work in United States.

16. Gate Guard

N/A
APPENDIX I

SLETTHEN CONSTRUCTION CRANE/HOIST PLAN

Purpose

Many types of cranes, hoists and rigging devices are used at Sletthen Construction, Inc for lifting and moving materials. Sletthen’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 Sletthen that involve the use of cranes and hoists installed in or attached to buildings and to all Sletthen employees, supplemental labor and subcontractor personnel who use such equipment and devices.

Throughout this document, Sletthen Construction Inc will be referred to as “Employer”.

Responsibilities

Supervisors are responsible for:

- Ensuring that employees under their supervision receive the required training and 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.

FALL 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

Anchorages 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.

**Anchorages 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.

**Anchorages 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;
- 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:

1. Site and ground-bearing conditions
2. Blocking material
3. Proper location of blocking
4. Verifying assist crane loads
5. Suitability of boom and jib pick points for preventing structural damage and facilitating safe handling
6. 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
7. Stability of the boom system and components upon pin removal
8. Prevention of snagging of suspension ropes and pendants on the boom or jib connections
9. Potential for unintended movement from poorly supported counterweights
10. Boom hoist brake failure
11. Loss of backward stability
12. 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

<table>
<thead>
<tr>
<th>Voltage (nominal kV)</th>
<th>Min. clearance (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 50</td>
<td>10</td>
</tr>
<tr>
<td>over 50 up to 200</td>
<td>15</td>
</tr>
<tr>
<td>over 200 up to 350</td>
<td>20</td>
</tr>
<tr>
<td>over 350 up to 500</td>
<td>25</td>
</tr>
<tr>
<td>over 500 up to 750</td>
<td>35</td>
</tr>
<tr>
<td>over 750 up to 1,000</td>
<td>45</td>
</tr>
<tr>
<td>over 1,000</td>
<td>establish with the utility owner/operator or RPE</td>
</tr>
</tbody>
</table>

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

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 Engineers (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.

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

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

2. 2\textsuperscript{nd} 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 ______
                   __________________________ Tubular Chord ______ Tapered Tip
                   __________________________ Hammerhead


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 ___________

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

III. RIGGING

15. Sling Construction: DIA Inches _______ ___ # of Parts _____________
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.
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.
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).


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).

# APPENDIX II - RESPIRATOR PROGRAM

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- A-3: Respiratory Hazard Assessment and Certification Form

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## ATTACHMENT I: VOLUNTARY DUSK MASK/RESPIRATOR USE
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.

Appendix II - Respirator Program
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 off the inlet openings of the cartridge with the palm of your 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.
Sample Hazard Assessment Log

<table>
<thead>
<tr>
<th>Department</th>
<th>Contaminants</th>
<th>Exposure Level (8 hr TWA*)</th>
<th>PEL**</th>
<th>Controls</th>
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* 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: ____________________
Respiratory Hazard Assessment and Certification Form

<table>
<thead>
<tr>
<th>Job Description</th>
<th>MSDS Product/Trade Name</th>
<th>Contaminant</th>
<th>Concentration ppm</th>
<th>mg/m³</th>
<th>Recommended Respiratory Protection</th>
<th>Service Life</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

I have performed an evaluation of the work areas indicated above, assessed the hazards and selected the appropriate respiratory protection.

<table>
<thead>
<tr>
<th>Signature</th>
<th>Name and Title (print)</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Appendix II - Respirator Program – Attachment A-3
## Required and Voluntary Respirator Use at *(Sletten Construction)*

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

* until ventilation is installed.
## ATTACHMENT C

Sample Hazard Evaluation

<table>
<thead>
<tr>
<th>Process Hazard Evaluation for <strong>SLETSEN CONSTRUCTION</strong></th>
<th><strong>DATE</strong></th>
<th>Noted Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prep-sanding</td>
<td></td>
<td>Ventilation controls on some sanders are in place, but employees continue to be exposed to respirable wood dust at 2.5 - 7.0 mg/m³ (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.</td>
</tr>
<tr>
<td>Prep-cleaning</td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>Assembly</td>
<td></td>
<td>Ventilation controls on sanders are in place, but employees continue to be exposed to respirable wood dust at 2.5 - 6.0 mg/m³ (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.</td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
<td>Because of potential IDLH conditions, employees cleaning dip coat tanks must wear a pressure demand SAR during the performance of this task.</td>
</tr>
<tr>
<td>Cleaning Spray Booth Walls</td>
<td></td>
<td>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, <strong>Sletten Construction</strong> will provide respirators to workers who are concerned about potential exposures</td>
</tr>
</tbody>
</table>
| Loading Coating Agents into Supply Systems             |          | Employees may voluntarily wear half-face piece APRs with organic vapor cartridges. Although exposure monitoring has shown that exposures are kept within PELs during this procedure,
**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, *Sletten Construction* 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 facepiece by wearers with facial hair, scars, or spectacles. PAPRs are available with chemical cartridges or with High Efficiency Particulate Air-Purifying (HEPA) filters.

• **Full-Facepiece 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-facepiece 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.
## Sletten Construction
Personnel in Respiratory Protection Program

### Date

Respiratory protection is required for and has been issued to the following personnel:

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Job Description/ Work Procedure</th>
<th>Type of Respirator</th>
<th>Date Issued</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator</td>
<td></td>
<td>Half mask APR P100 filter when sanding/ AR continuous flow hood for cleaning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dip tank cleaning</td>
<td></td>
<td>SAR, pressure demand with auxiliary SCBA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spray Booth</td>
<td></td>
<td>SAR, continuous</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Respirator Inspection Checklist

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

<table>
<thead>
<tr>
<th>Inspected by:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action Taken:</td>
<td></td>
</tr>
</tbody>
</table>
SCBA Inspection Checklist

<table>
<thead>
<tr>
<th>1. <strong>Is the Face piece in good condition?</strong> <em>Look for these Items:</em></th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Excessive dirt</td>
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<td></td>
<td></td>
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<tr>
<td>• Cracks, tears, holes or distortions from improper storage</td>
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<tr>
<td>• Inflexibility</td>
<td></td>
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<tr>
<td>• Cracked or badly scratched lenses in full face pieces</td>
<td></td>
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<tr>
<td>• Incorrectly mounted full face piece lens or broken or missing mounting clips</td>
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</tbody>
</table>

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<thead>
<tr>
<th>2. <strong>Are the headstraps or head harness in good condition?</strong> <em>Look for these items:</em></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>• Breaks in the straps</td>
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<tr>
<td>• Loss of elasticity</td>
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<tr>
<td>• Broken or malfunctioning buckles and attachments</td>
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<tr>
<td>• Excessively worn serrations on the head harness which might permit slippage</td>
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</table>

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<thead>
<tr>
<th>3. <strong>Is the exhalation valve in good condition?</strong> <em>Look for these items:</em></th>
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<tbody>
<tr>
<td>• Foreign material under the valve seat</td>
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<tr>
<td>• Cracks, tears or distortion in the valve material</td>
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<tr>
<td>• Improper insertion of the valve body in the face piece</td>
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<tr>
<td>• Cracks, breaks or chips in the valve body, particularly in the sealing surface</td>
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<tr>
<td>• Missing or defective valve cover</td>
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<tr>
<td>• Improper installation of the valve in the valve body</td>
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</table>

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<thead>
<tr>
<th>4. <strong>Is the breathing tube in good condition?</strong> <em>Look for these items:</em></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>• Damaged, worn or missing end connectors</td>
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<tr>
<td>• Missing or loose hose clamps</td>
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<tr>
<td>• Deterioration or the hose material</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>5. <strong>Is the high pressure air supply in good condition?</strong> <em>Look for these items:</em></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>• Air supply lines, hoses, attachments and end fittings worn</td>
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<td></td>
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<tr>
<td>• Valves and air flow regulators inoperable</td>
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<tr>
<td>• Low pressure alarm inoperable</td>
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<tr>
<td>• Air cylinder less than full</td>
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<tr>
<td>• Gauges inoperable</td>
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<tr>
<td>• Air cylinder damaged</td>
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<td></td>
<td></td>
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<tr>
<td>• Air cylinder hydrostatic test out of date</td>
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</tbody>
</table>

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<thead>
<tr>
<th>6. <strong>Is the cylinder harness in good condition?</strong> <em>Look for these items:</em></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>• Straps or frame showing wear or damage</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>• Broken or malfunctioning buckles and attachments</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>• Air cylinder attachment devices inoperable</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
If you answered ‘no’ to any question above, list corrective action taken here:

<table>
<thead>
<tr>
<th>Inspected by:</th>
<th>Date:</th>
</tr>
</thead>
</table>

Appendix II - Respirator Program – Attachment F-2
ATTACHMENT G

Sample Emergency Potential Log

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

<table>
<thead>
<tr>
<th>Area</th>
<th>Type of Emergency</th>
<th>Location of Emergency Respirator(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

__________________________________  ____________________
Safety Director     Date
ATTACHMENT H

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:

<table>
<thead>
<tr>
<th>Process</th>
<th>IDLH Condition</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>Workers will follow the permit required confined space entry procedures specified in the <em>(Sletten Construction)</em> 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 <em>(Sletten Construction)</em> Confined Space Program.</td>
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___________________________________  __________________________
Safety Director                                                       Date
ATTACHMENT I

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 then 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-tine 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 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 determines 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.

<table>
<thead>
<tr>
<th>Category</th>
<th>Incentive Amount</th>
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<tr>
<td>A. Category 20,000 + man-hours</td>
<td>$2,500.00</td>
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<tr>
<td>B. Category 10,000 to 20,000 man-hours worked</td>
<td>$2,000.00</td>
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<tr>
<td>C. Category 5,000 to 10,000 man-hours worked</td>
<td>$1,500.00</td>
</tr>
<tr>
<td>D. Category 5,000 or less man-hours worked</td>
<td>$1,000.00</td>
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</tbody>
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APPENDIX IV

SLETTERN 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, an individual may be required to provide a drug screen prior to beginning work.

2. **Random Testing:** The Division Manager, Risk Manager, or 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.
APPENDIX A

EVACUATION ROUTE MAP

See Map: