LeCHASE
Safety Manual

ZERO INCIDENTS

LeCHASE

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LeChase Construction Services, LLC
Jobsite Safety Manual

Section 1 - Introduction

Introduction

This manual establishes procedures that provide a safe and healthful working environment for all employees. These procedures apply to all work or services performed on any construction project or operating facility that is managed, constructed, or operated by LeChase Construction Services.

The objectives are as follows:

- To provide guidelines for implementing a safety plan that will direct safety and health programs on construction projects, or operating facilities, in order to maintain compliance with LeChase or Client/Owner's procedures and federal, state, and/or local statutory requirements or regulations.
- To minimize occupational injuries and illnesses, reduce equipment and property damage, and eliminate reoccurrences.
- To establish responsibility and accountability for the safety program on each construction project and operating facility.

LeChase Construction Services, LLC
Jobsite Safety Manual

Section 2 - Management Policy Statement

Safety Policy Statement

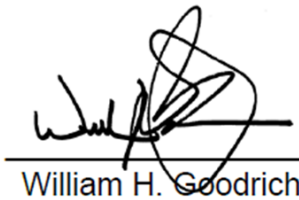
At LeChase, achieving world-class safety is our goal. We will strive to ensure every employee, subcontractor and site visitor returns home safely each day as we drive incidents to zero.

We believe that every employee is entitled to a safe and healthy work environment, that all injuries are preventable, and that we can achieve zero incidents by delivering excellence – continuously improving our safety programs, processes and culture through collaboration with our employees, subcontractors and clients.

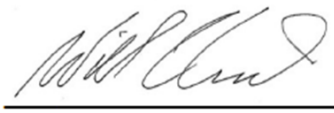
The LeChase management team has the responsibility to ensure that every employee has the appropriate skills, training and tools to safely and effectively perform their jobs.

In turn, every employee assumes personal responsibility to "Do the Right Thing" to ensure their own safety and the safety of those around them. We pride ourselves on a "You See It, You Own It" mentality and a culture of empowerment. Employees are empowered to ask questions in the interest of safety and to *validate and verify* conditions are safe prior to starting work. Anyone who enters our jobsites or offices has the authority to stop unsafe work immediately without fear of retribution.

Together, we are committed to protecting people, property, the environment and the communities in which we work.



William H. Goodrich
CEO and Managing Partner



William L. Mack
President

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Section 3 - Function and Responsibilities

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Safety Department

The Safety Department acts as liaison/consultant in the field of safety, health, environmental, fire prevention, and medical/first aid.

It also reviews and interprets the Occupational Safety and Health Act of 1970, (OSHA), and state, local, or other governmental agency safety and health regulations. To do so it maintains a working relationship with government representatives. Procedures to comply with the appropriate safety and health laws and regulations are developed by the Safety Department and disseminated to the field and project management.

The Safety Department develops, implements, and administers job safety and health training programs, and provides input for jobsite safety meetings. It conducts safety surveys, participates in pre-job planning for project safety activities, coordinates the safety program with client requirements, and acts as liaison with outside medical and insurance personnel.

Chief Executive Officer

Primary safety responsibilities for the LeChase Chief Executive Officer are as follows:

- Provide leadership and management of entire risk and financial management program. Bottom line responsibility.
- Develop and modify organizational structure of Safety Department.

President & COO

Primary safety responsibilities for LeChase President are as follows:

- Participate in setting Safety direction, performance.
- Review and approve budget and resources.
- Aid in developing, reviewing, and approving Safety Incentive Programs.
- Utilize performance management to measure results.

Executive Vice President / Vice President / Project Executive

Primary safety responsibilities for the LeChase Executive Vice President / Vice President / Project Executive: Provide Top-level Management relative to safety at the Jobsite Level:

- Communicate safety objectives/job description to project management personnel.
- Incorporate safety goals in performance management.
- Ensure safety is included in goals of employees reporting directly to them.
- Promote pre-project and pre-task safety planning is done (i.e., participate in planning meetings…)
- Develop, review and approve site Safety Programs.

Safety Director

Primary safety responsibilities for the LeChase Safety Director are as follows:

- Share responsibility/accountability for safety results.
- Assign Safety Engineers/Interns tasks and responsibilities.
- Identify and implement training of all employees.
- Coach and monitor field supervision.
- Assist in pre-planning and developing site specific programs.
- Participate in accident investigations (Workers Compensation – LeChase and Subs).
- Assist in claims management.
- Keep Company current on all applicable OSHA, State or other governmental safety, health, and environmental requirements.
- Conduct unannounced visits at all sites.
- Ensure designated LCS competent person has been identified and have the proper training.

Project Manager

Primary safety responsibilities for the LeChase Project Manager are as follows:

- Understand and implement the Safety Program:
  - Develop and implement pre-job and pre-task safety plans with the Project Superintendent and Safety Director.
- Provide Support for Safety Program:
  - Periodically attend and monitor Tool Box Talks.
  - Ensure proper response is given to Safety Audits.
  - Assist in accident investigations.
  - Help manage Workers Compensation cases:
    - Communicate with employee.
  - Monitor Safety documentation.
- Ensure Safety Compliance from Subcontractors:
  - Monitor Subcontractors from a risk management standpoint.

Superintendent

Primary safety responsibilities for the LeChase Superintendent are as follows:

- Establish a Safe Work Culture:
  - Continuously monitor the jobsite.
  - Ensure new Employee Orientation has been completed:
    - Take part in individual orientations if applicable.
    - Provide periodic safety “Walk-Arounds” for employees new to the project, and point out areas of concern on your site. Review site specific plan, if any.
  - Set the example, work toward a goal of “zero” accidents.
  - Enforce safety rules under established disciplinary procedures.

- Plan Job for Safety:
  - Attend pre-job planning meeting.
  - Be involved with pre-task meetings with LeChase employees and Subcontractors prior to beginning a new activity.
  - Ensure Supervision can do their job relative to safety.
  - Ensure that proper training is done before attempting tasks.
- Oversee Subcontractor Safety

Project Engineer

- Understand the Safety Program.
- Assist the Project Manager and Superintendent in Implementing the Safety Program as directed.

Foreman

Primary safety responsibilities for the LeChase Foreman are as follows:

- Crew Safety Responsibility:
  - Lead by example.
  - Ensure that employees on your crew have proper training to do their job safely.
- Planning:
  - Be involved in pre-task planning with the Superintendent and Project Manager.
- Immediately Correct Safety Violations:
  - Correct unsafe acts by employees. Evaluate employees work ethics.
  - Correct unsafe site conditions.
  - Inspect tools and equipment. Remove from use if they present a safety hazard.
  - Report safety infractions to Project Management for discipline.
- Enforce the Use of Personal Protective Equipment.
- Assist the Superintendent in Doing His Safety Job:
  - Understand what the Superintendent's job is and assist in getting job done.

Project Safety Engineer/Safety Intern

Reports directly to the Safety Director. Primary safety responsibilities for the LeChase Project Safety Engineer/Safety Intern when required are as follows:

- Help coordinate safety, fire prevention/protection, and first aid programs on the project.
- Conduct frequent and unannounced audits of assigned projects.
- Review safety surveys of LeChase and Subcontractor operations to ensure compliance with the Project Safety Program, OSHA, and state safety violations, and initiate corrective action by responsible supervision.

- Recommend cessation of work in unsafe areas to job supervision. In imminent danger situations, will stop work on own volition, stipulating necessary compliance to permit resumption of such work. Report safety infractions to Project Management for discipline.
- Maintain working relationship with Project Management, Supervisors, Contractors/Subcontractors, insurance carrier representatives; local emergency services, OSHA, and state safety agencies.
- Assist with accident investigations. Analyze causes and formulate recommendations for corrective and preventative action.
- Assist in maintaining required record keeping system.
- Periodically participate in weekly planning and safety meetings.
- Assist in preparing Job Safety Bulletins and subject material for “Tool Box” Safety Meetings; Review and audit such meetings to ensure effectiveness.
- Assist in safety orientation of new hires.
- Advise Safety Director and/or managerial personnel in a timely manner on Project Safety Program progress or unresolved safety problems.

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Section 4 - Safety Disciplinary Actions and Imminent Dangers

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Purpose
This procedure outlines the guidelines and use of disciplinary action for safety violations and imminent danger situations on all LeChase projects and offices.

Scope
This policy applies to all LeChase Construction, QSI, and Conifer-LeChase employees, affiliate companies, subcontractors, vendors, and visitors.

Discipline and Enforcement
This procedure provides a process for the discipline of employees who violate established safety rules. Safety rules are written and enforced to protect employees from injury.

All employees must receive proper safety training and a site-specific orientation prior to starting work. This procedure should be reviewed during the orientation process to ensure all employees understand these requirements.

When completing documentation, be certain to include any Employee Warning Reports (Appendix A). All disciplinary actions must be communicated and distributed to the Regional Safety Manager and the SBU Lead for review and documentation.

NOTE: Owners may enforce different safety rules. LeChase will communicate to all employees and require compliance by all personnel and subcontractors.

Progressive Discipline Warning Process
- 1st Violation: Verbal Warning
- 2nd Violation: Written Warning
- 3rd Violation: Termination and/or Removal from Project

1st Violation: Verbal Warning
In instances of non-serious safety infractions, employees, including subcontractors, will receive a verbal warning/reprimand and must immediately adhere to the safety requirements. Should the employee refuse to comply with the requirements, the employee will be removed from the site.

Minor infractions include items such as not wearing gloves or safety glasses.

Each verbal warning must be documented in the Supervisor's daily log and included in separate written documentation (Appendix A).

2nd Violation: Written Warning
On the 2nd violation, employees, including subcontractors, will receive a second violation written warning. A copy of the written warning will be made available to the employee. Written warnings shall include the nature of the violation and the corrective safe practice or process.

3rd Violation: Termination and/or Removal from Project
A 3rd safety warning or violation of any type or severity, at the discretion of the project team, shall result in immediate removal and/or termination from all LeChase or LeChase affiliate company projects for at least 12 months.

Disciplinary Program Imminent Danger

LeChase recognizes that exposure to imminent danger situations pose the most serious threat to employee safety. At the discretion of LeChase management, anyone found to be in violation of any of the below items will be immediately terminated or removed from the project. Any supervisor who knowingly allows employee exposure to imminent danger situations is subject to immediate removal and/or termination.

(See next page for comprehensive list of Imminent Danger Violations)

Imminent Danger Violations

Imminent danger situations include, but are not limited to, the following:

Violation of the LeChase Fall Protection Program, including standing on the top or first rung of a step ladder and not being appropriately tied off when working at heights greater than 6 feet.

Violation of the Stored Energy and Lockout/Tagout Procedure, including removing another employee's lockout sign or tag without authorization and working on equipment or circuits that could be accidentally energized at the disconnect point without proper lockout.

Violation of the Cranes and Rigging Procedure, including operating a crane (lifting, swinging or loading) adjacent to an energized power line less than 20 feet away and using rigging equipment in excess of the recommended safe workload capacity.

Violation of the Confined Space Procedure, including unauthorized entry to a confined space.

Violation of the Excavations Procedure, including working in or authorizing work in unsloped, unshored or unprotected trenches or excavations.

Violation of procedures related to mobile equipment, including operating mobile equipment without appropriate certification, authorization or inspection.

Violation of procedures related to caught-in/struck-by hazards, including entering the line of fire (i.e. walking under a suspended load).

Violation of the LeChase Drug and Alcohol Policy, including working under the influence of mind-altering substances.

Accessing exclusion zones/red barricaded areas without proper authorization.

Intentionally removing a guard or safety mechanism designed for employee protection.

Conscious disregard of a "DO NOT OPERATE", "DANGER", or "WARNING" sign.

Additional items that shall warrant immediate removal or termination include:

- Fighting, Verbal Abuse, Non-Verbal Abuse, and Harassment
- Exhibiting open disregard, defiance or disrespect for contractor safety or the project safety program
- Theft and Sabotage
- Firearms
- Smoking in non-designated areas
- Falsifying a company document (i.e., accident investigation, testimony, equipment inspections, certifications, etc.)

Appendix A: Employee Warning Report

LeChase Construction Services, LLC.

WARNING

Employee Name _____ *Date of Disciplinary Action* _____/_____/_____

Date of Employee's Safety Orientation _____/_____/_____ *Position / Craft:* _____

Employed by LCS QSI CLC Cummings Subcontractor: _____

if Subcontractor: Prime to Owner Sub to LCS Sub to Sub _____

Job Number: _____ *Jobsite Superintendent:* _____

Jobsite or Location: _____

Violation Date: ____/_____/_____ **Violation Time:**____: _____ ☐ AM ☐ PM

Was this violation imminent danger? ☐ Yes ☐ No

Reason for Disciplinary Action & Disciplinary Decision:

_____

_____

_____

_____

_____

_____

_____

List any previous disciplinary information below.

Were any previous disciplinary actions imminent danger violations? ***Yes*** ***No***

1st Verbal Warning (Date)	2nd Written Warning (Date)	3rd Removal/Termination (Date)
_____ /_____/ _____	_____ /_____/ _____	_____ /_____/ _____

Employee Comments

_____

_____

_____

I have read this "Disciplinary Decision" and understand it.

_____ _____

Employee Signature *Superintendent Signature/Signature of person issuing warning*

Employee Refused to Sign

_____ /_____/ _____ _____ /_____/ _____ _____ /_____/ _____

Date *Date* *Date*

DISTRIBUTION: Superintendent/PM SBU Lead ES&H Human Resources Employee

1/26/2015

LeChase Construction Services, LLC
Jobsite Safety Manual

Section 5 - Workplace Drug and Alcohol Policy

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Purpose

LeChase Construction, Conifer-LeChase, NCF, and all affiliate companies are drug and alcohol–free work environments. All employees are expected to maintain high standards of safety, quality, and personal conduct in the workplace. In keeping with those standards, it is essential that the workplace is free of illegal drugs and alcohol.

The objective of this policy is to help ensure a safe, healthy and productive work environment for the employees of LeChase and others on company property, to protect company property and to assure efficient operations.

This policy restricts certain items and substances from being on company premises. It further prohibits company employees, subcontractors and others working on company premises from reporting for work or from working with any detectable level of any illegal drug, alcohol or other substance, which could impair, affect, or alter the employee's ability to perform work safely.

Scope

This policy applies to all employees of the Company when they are on Company business, at a Company place of work, or on Company premises, including but not limited to: all construction projects, offices, warehouses, facilities, buildings, installations, automobiles, trucks, and other vehicles whether owned, leased, or used by the Company or for Company purposes. This policy also covers the use of drugs or alcohol while off Company premises if the employee is "under the influence," as defined in this policy, when representing the Company. All employees will be tested in line with this policy, unless client drug and alcohol testing provisions are more stringent, in which case the client's drug and alcohol policy will be followed. Additionally, regardless of the event or situation, employees are always responsible for their actions and behavior at Company-sponsored events or activities.

Covered Employees

LeChase's drug and alcohol-free workplace policy applies to all full-time, part-time, and temporary craft, salaried, and office-based employees.

Applicants

All applicants are covered by this policy in so much as the Company has extended a conditional offer of employment and a pre-employment drug test is required.

Applicants are not entitled to employee assistance benefits, company-paid retests, or any other services made available to employees in this policy unless stipulated by applicable state or federal law.

Note: All current employees are grandfathered in to this policy. Current employees are given 60 days' notice of the implementation of this policy and will fall under the policy at the end of these 60 days and can be tested from that point forward. This policy is effective immediately for LeChase applicants.

Prohibited Conduct

The Company prohibits the use, possession, sale, manufacture, distribution, and transportation in our offices, on our property, on our job sites, while at work, or in any company vehicle, of any of the following:

- Unauthorized alcoholic beverages
- Illegal or illicit drugs
- Drug related paraphernalia
- Prescription medication not authorized by his/her physician.

Additionally, if an employee is taking a drug or medication, whether or not prescribed by a physician, which may adversely affect the employee's ability to perform his/her duties in a safe or productive manner, the employee must report such use of medication to their Supervisor. This includes drugs that are known or advertised as possibly affecting judgment or causing drowsiness or dizziness. The employee has the responsibility to report any drug, alcohol, or controlled substance situation that may affect the safety and performance of the workplace.

Violation of the above policy will result in disciplinary action up to and including removal from company premises or termination.

Responsibilities

The senior management representative on site is responsible and accountable for the administration of this policy on all projects. The SBU Lead or his designee is responsible and accountable for policy administration in company office locations. All matters concerning the administration and interpretation of this policy shall be referred to the Regional Safety Manager, human resources, or the LeChase Substance Abuse Administrators.

It is the responsibility of all employees covered under this policy to comply with the policy by maintaining a safe, drug-free workplace environment and by reporting dangerous behaviors to supervisors.

Confidentiality

All paperwork, forms, reports or correspondence involving an applicant or employee's drug test and/or pre-employment physical will be handled in a confidential manner.

Search of Personal Property and/or Vehicle

Any personal property and/or vehicle whether owned by LeChase, their employee or subcontractor, and being operated on company premises, is subject to search by LeChase for the presence of any item which is in direct conflict with LeChase's Drug and Alcohol Policy. The company's search policy extends to persons, lunch boxes, lockers, desks, vehicles, and all onsite/in-office personal belongings.

Definitions

Accident: Any event resulting in injury to a person or property to which an employee contributed as a direct or indirect cause.

Alcohol – Ethyl (Ethanol): References to use or possession of alcohol include the use of any beverage, mixture, or preparation containing alcohol.

Applicant: Any individual who is referred or makes application for employment with the Company.

Contraband: Substances including but not limited to the following: drugs, alcohol, and drug paraphernalia.

Drug: Any substance (other than alcohol) including prescription drugs which may impair mental or motor function including, but not limited to, any psychoactive substance, controlled substance, marijuana, or designer or synthetic drugs. This definition does not apply to prescription drugs that have been disclosed to the Company by the employee and are approved for use within prescription limits.

Drug Paraphernalia: Any article intended for the use, storage, or sale of illegal drugs. Employee: Any individual salaried, hourly, or temporary, who actually performs work for the Company.

Incident: Any event that the employer determines has the attributes of an accident. Medical Review Office (MRO): A person who is a licensed physician and who is responsible for receiving and reviewing laboratory results generated by an employer's drug and alcohol testing program, and for evaluating medical explanations for certain drug test results.

Testing Facilities: A laboratory where a specimen can be tested for drugs and alcohol within threshold limits according to established standards.

Required Drug and/or Alcohol Testing Procedures

The Company will conduct **pre-employment, reasonable suspicion, post-accident, and random drug and/or alcohol testing of all employees.**

Pre-employment

Pre-employment drug and/or alcohol testing will be conducted on all new hires company wide.

Pre-Hire Testing Procedures

After receipt and review of a fully completed job application and a preliminary evaluation of an applicant's eligibility for employment, applicants will be required to complete a drug and/or alcohol test.

A conditional job offer, contingent on the successful completion of a drug and/or alcohol test, is made at this time. The applicant cannot begin work until LeChase is properly notified that the applicant has passed the drug and/or alcohol test. A confirmed positive test will disqualify the applicant from employment for a minimum of 90 days.

Re-hires

- All employees who receive a separation of employment from LeChase are required to go through another drug and/or alcohol test if being re-hired, no matter how long their employment has been separated.
- If an employee does not receive a separation notice of employment from LeChase and has not worked for more than ninety (90) calendar days, another drug and/or alcohol test must be done before allowing that employee to work again.

Random

LeChase uses a third-party company whom, by the use of a computer program, makes the random selections of individuals to be drug/alcohol screened. All employees covered in this policy will be subject to unannounced random drug and/or alcohol testing to be performed:

- On at least 10% of the work force annually
- At times spread reasonably throughout the year

Random Testing Procedures

Upon notification of a drug and/or alcohol test, employees must submit to testing by the end of the same work day. Employees will be compensated for time away from work for testing.

Refusal to submit to testing, failure to report to the collection site, or any adulteration or modification of a specimen to be used for drug and/or alcohol testing will result in immediate termination.

Reasonable Suspicion

All employees are subject to drug and/or alcohol testing if management has “reasonable suspicion” that any employee is under the influence of drugs and/or alcohol. Refusal to submit to reasonable suspicion testing will be grounds for immediate termination.

Reasonable suspicion shall exist when a manager/supervisor/foreman that is trained in detection of drug and/or alcohol use, substantiates specific employee indicators conducive of being under the influence of drugs and/or alcohol.

The following or a combination thereof may constitute reasonable suspicion:

- Incoherent, slurred speech;
- Odor of alcohol on the breath;
- Staggering, disorientation, or loss of balance;
- Paranoid or bizarre behavior; or,
- Unexplained drowsiness.

Note*:* The above may not constitute a comprehensive list of indicators. This provision will be administered in a fair, confidential and nondiscriminatory manner.

Note*:* Be aware that a medical emergency may be the reason for the suspicious behavior (i.e., diabetic shock may look like intoxication).

Reasonable Suspicion Testing Procedures

- The supervisor shall note all pertinent behaviors, physical signs, or symptoms that led to a reasonable belief that the employee has recently used or is under the influence of illegal drugs, alcohol, or other prohibited substances. A LeChase Construction "Reasonable Suspicion" form will be completed (attached).
- When possible, a second witness in a management capacity will verify the supervisor's suspicions.
- Once it is determined that an employee will be tested, he/she will be transported to the testing facility by the superintendent/designee or a responsible LeChase employee.

Note: If it is determined that the employee is not in a condition to continue working or is unsafe, the employee must be transported home (after the proper testing has been conducted). THE EMPLOYEE SHOULD NEVER BE ALLOWED TO DRIVE IF IT IS DETERMINED HE / SHE IS IMPAIRED.

Post-Accident Testing

Post-Accident drug and/or alcohol testing will be conducted on any employee who has contributed or is directly involved in an on-the-job incident that:

- Required on-site or off-site medical treatment
- Resulted in property damage
- Carried the potential for serious personal injury or significant property damage

Post-Accident Testing Procedures

1. Treat the injured and provide damage control – Consult with ESH
2. Determine who will be tested, based on contributory factors including anyone
3. whose actions, in the opinion of the supervisor, could be reasonably deemed to have contributed to the occurrence of the accident or incident
4. Inform those to be tested of their options.
5. Submit to the test or be terminated for cause.

Note: The person to be tested MUST be taken to the testing facility by the responsible LeChase manager/supervisor or designee, or a responsible LeChase employee who is well versed in LeChase's policy and procedures for doctor visits.

Note: Failure to report an accident or work-related injury immediately may be an attempt to evade testing and is a violation of this policy that is subject to disciplinary action.

Substances Tested

The Company will test individuals for drugs utilizing lab-based urine technologies and for alcohol utilizing breath or saliva testing. Under normal circumstances, samples will be tested for the following substances at the corresponding detection limits listed below. (LeChase reserves the right to adjust the detection limits and/or add any constituents that are considered controlled substances to the list for analysis if considered necessary.)

Drugs

Drug	Screening Threshold (NG/ML)	Confirmation Threshold (NG/ML)
6am	10	10
Amphetamines	500	250
Barbiturates	300	200
Cocaine	150	100
Benzodiazepine	300	300
MDMA	500	250
Methadone	300	200
OPIEX	300	300
PCP	25	25
Propoxyphene	300	200
THC	50	15

An individual who tests positive for any of the substances cited will be subject to adverse employment action.

Positive Test Results

A positive drug test result will automatically be sent to an independent Medical Review Officer (MRO). The MRO will evaluate the test result, often in consultation with the applicant or employee.

A positive alcohol test will be confirmed via an Evidential Breath Test (EBT). Any employee with a confirmed alcohol test with a blood alcohol content (BAC) between 0.02-.039 will be immediately removed from safety sensitive positions until the employee can successfully complete a negative alcohol test. A negative breath alcohol test (less than 0.02) must be successfully completed at least 24 hours after the initial confirmed positive test before the employee may be allowed to return to work. Employees with a confirmed BAC of .04 or greater will be immediately terminated.

Disciplinary or Corrective Actions

Employees with a confirmed positive drug and/or alcohol test will be immediately terminated and may not reapply for employment with LeChase for a period of ninety (90) days.

Employees who were not functioning in a safety sensitive capacity at the time of the incident may, at the discretion of management, be offered the opportunity to complete an Employee Assistance Program (EAP) and recommended rehabilitation. After completing the EAP and rehabilitation program, a negative drug and/or alcohol screen is required for the employee to return to duty after a period of at least ninety (90) days unpaid leave, at the discretion of executive management. The employee will be subject to periodic and/or random drug and/or alcohol tests for a period of one year or more.

Supporting Documentation

- Reasonable Suspicion Checklist
- Reasonable Suspicion Consent for Drug and/or Alcohol Testing Form
- Refusal to Consent to Testing Form
- Employee Acknowledgement Form

"For good cause, any member of LeChase's Board of Directors may grant an exception to this policy at his/her sole discretion."

Appendix A: Reasonable Suspicion Checklist

LeChase Construction Services, LLC
Reasonable Suspicion Checklist

Employee Name	Department/Project	Contractor
Date/Time of Observation		Location of Observation

Observations (Check all that apply. Add additional comments as needed.):

Speech:
___Normal ___Slurred ___Loud
___Confused ___Yelling ___Whispering
___Silent ___Mumbling

Comments (be specific): _____

Body Movements:
___Normal ___Staggering ___Swaying
___Weaving ___Stumbling ___Falling
___Trembling ___Unable to Stand

Comments (be specific): _____

Behavior:
___Belligerent ___Sullen ___Uncooperative
___Dazed ___Withdrawn ___Elated

Comments (be specific): _____

Appearance:
___Normal ___Red eyes
___Unkempt hair/clothing ___Wearing sunglasses indoors
___Alcoholic beverage on break ___Dilated (large) pupils
___Constricted (pinpoint) pupils

Comments (be specific): _____

Complexion:
___Pale ___Flushed ___Sweaty

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Comments (be specific): _____

_____

_____

Today's Job: ____Frequent unexplained disappearances
___Long breaks or lunches
___Late to work
___Job accidents that result in: equipment or material damage, a human fatality, if the employee receives a moving violation ticket from the accident, or any bodily injury requiring immediate medical treatment away from the scene
___Frequent trips to the bathroom or water fountain
___Mistakes due to poor judgment
___Low productivity/taking longer than usual to complete tasks
___Needing more supervision than usual
___Complaints from others about behavior/attitude/driving

Other Job Performance Observations (be specific): _____

_____

Interpersonal Behavior: ___Avoids supervisor, especially after lunch or breaks
___Argumentative with supervisor or co-workers
___Overly sensitive to real or imagined criticism
___Wide mood swings
___Withdrawn, isolating self from other people
___Major change in personality

Other Job Performance Observations (be specific): _____

_____

_____

Test Requested: ___Drug ___Alcohol ___Drug and Alcohol

The above was observed by:

Supervisor Name (print)	Signature	Date
Witness Name (print)	Signature	Date

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Appendix B: Reasonable Suspicion Consent for Drug and/Alcohol Testing Form

LeChase Construction Services, LLC

Reasonable Suspicion Consent for Drug and/or Alcohol Testing Form

I understand that the Company has a Drug and Alcohol Policy that provides drug and/or alcohol testing for "Reasonable Suspicion". I have been requested to submit to testing for the presence of company restricted substances as well as any other substances the Company deems necessary.

I have read, understand and agree to the above.

Employee Name: _____ Date: _____

Employee Number: _____
(if applicable)

Employee Signature: _____

Company Name: _____

Appendix C: Refusal to Consent to Testing Form

LeChase Construction Services, LLC

Refusal to Consent to Testing Form

I have been informed by my supervisor of behaviors that constitute a "Reasonable Suspicion" that I may be currently under the influence of drugs or alcohol. I have been further informed that Company policy requires me to submit to a substance abuse test.

I understand that my refusal to submit to substance abuse testing may be grounds for corrective action, up to and including termination of my employment.

I hereby refuse to authorize or submit to any substance abuse testing for alcohol and/or drugs.

Employee Name: _____ Date: _____

Employee Number: _____
(if applicable)

Employee Signature: _____

Company Name: _____

Appendix D: Employee Acknowledgement Form

LeChase Construction Services, LLC

Employee Acknowledgement Form

This is to acknowledge that I have received a copy of the LeChase Construction, Inc. Drug & Alcohol Policy and I understand that it sets forth the terms and conditions of employee drug testing. I understand and agree that it is my responsibility to read the Employee Drug Testing Policy and to abide by the requirements and standards therein.

I also understand that the company reserves the right to revise, delete, and add to the provisions of the LeChase Drug & Alcohol Policy. All such revisions, deletions, or additions must be in writing. I also acknowledge that the employee drug testing terms may be modified at the sole discretion of the company, with or without notice, at any time.

I further recognize that this agreement supersedes all prior agreements, understandings, and representations concerning employee drug and alcohol testing.

If I have questions regarding the content or interpretation of the LeChase Drug & Alcohol Policy, I will bring them to the attention of LeChase Management.

Acknowledged:

Employee Name	Signature	Date

LeChase Construction Services, LLC
Jobsite Safety Manual

Section 6 - Investigation and Reporting of Serious Accidents, Fatalities, and Major Incidents

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General

The severity of an accident has no bearing on the need for it being investigated. Each accident shall be promptly reported to the Project Supervision, and a timely investigation of all circumstances shall be conducted. These investigations are for the purpose of studies and the direction of corrective actions.

Elements of an Effective Investigation

The purpose of collecting accident data is not to fix blame, but to find accident causes and prevent their reoccurrence. Investigators must emphasize that their investigation is a fact finding, not a fault finding, mission. Otherwise, the workers and supervisors who have the information may conceal the information to protect themselves and their fellow workers. Investigators must be particularly careful where signed statements are needed for possible courtroom evidence. Many persons associate signed statement with blame and are reluctant to sign anything.

The investigation shall reveal what operations were being carried on at the time of the accident, whether an individual or a group was performing the work, and whether accepted methods of physical protection and protective clothing were being used. Investigation shall determine:

- The basic cause of the accident.
- The steps which can be taken to prevent a reoccurrence of the same type of accident.
- The preventative measures which have actually been put into effect.

Thoroughness in an investigation and attention to underlying causes are all-important. The tendency to blame an accident on an employee's "carelessness" shall be avoided because the term is vague and usually hides problems which could be corrected if identified.

If an employee reached around a safety guard while operating a machine, for example, it may have been done completely carelessly or thoughtlessly. However, he probably did it for a reason. If he did not know why the guard was there, he may need safety training. If he was unaware that he was doing something he felt was either more dangerous, impeding production, or making his job difficult – in these cases, the real problem could be improper guarding, poor production design, poor work methods or lack of competence or intelligence on the worker's part. To call his action merely "careless" in such a case would be to hide the problems which could lead to similar accidents in the future.

Report of Accident Investigation

This report is to be completed immediately after the accident. It is important to relate all facts concerning the accident as clearly as possible.

These investigation forms are prepared so future accidents can be reduced and for use in defending claims against the Company.

When to Investigate

When an accident occurs, the first concern is for the injured person. They shall have immediate access to first aid and medical facilities. Unless the injured person is well enough to be questioned at the scene, they shall not be further upset with questions. Once their welfare is provided for, the investigation shall begin.

Project Supervision is in the best position of all to make an accident investigation and prepare a sound analysis of the basic causes. Their presence on the scene, and opportunity to question the injured

person and fellow employees makes it possible for them to discover the details surrounding the accident. Unless this is done immediately, the actual facts may become obscure or distorted.

Procedures

All accidents must be reported to the President Executive Secretary immediately.

Accidents involving serious injury (or death) of personnel and/or major damage of equipment shall be immediately reported to the Safety Director and Risk Manager.

An investigation at the accident site in conjunction with project personnel and any outside experts considered necessary will begin promptly.

All accident investigations shall include written information noted immediately after the accident and preferably made at the accident site. Fairness and objectiveness must be the prime consideration with a practical search for the causes of the accident. The investigation is for finding responsible causes for the accident, and not for determining accountabilities.

An accident has as many causes as can be found, and the reported facts must include: who, when, where, why, and how. Here are five items which shall be identified in making out a complete accident report:

- The “source” of the accident is the object or substance which inflicted the injury or illness. Hand and power tools, cranes, floor openings and chemicals are examples of the possible sources of accidents.
- The source part is the particular part of the object or substance which created the hazardous condition causing the accident.

  Obviously, and accident report would be incomplete if, for example, it mentioned a crane as the source of an accident, but did not mention that its hook was the only part which contributed to the accident. Among the other source parts which could contribute to an accident are: brakes on a truck, a nail in a piece of lumber and ethylene chlorohydrins in cleaning chemicals.

- The hazardous condition is what was wrong with the source or source part which contributed to the accident. The hazardous condition is the direct cause of the accident. Example include: lack of brake fluid in a truck’s brakes, a protruding nail capable of puncturing a worker’s foot and presence of ethylene chlorohydrins on a workroom table. The hazardous condition might also be the result of weather or previous inaction to correct conditions.
- The unsafe act is what the employee did wrong. It may have been something one should have done or failed to do, or the right thing in the wrong way may have occurred. Unsafe acts include such things as: driving without looking in the rear-view mirror, working at an unsafe speed or spilling ethylene chlorohydrins on a workroom table.
- The unsafe personal cause is the physical or mental reason why an employee committed an unsafe act. Lack of knowledge or skill, physical or mental defects and improper attitudes are personal causes or unsafe acts. This is essential information because it is the clue to correcting an unsafe act. If it was known that an employee was working at an unsafe speed at the time of an accident, little more could be done to correct the situation than to advise the employee to slow down. However, if the reason for haste was known (for example, new on the job, inadequate training or

anxious to finish work early), a specific remedy could be suggested. Reasons for an unsafe act must be known in order to correct it.

Statements from witnesses to an accident shall be taken from each individual in a private meeting, with each witness having amply opportunity to describe the accident in their own written words. The recording of notes by such statements must segregate the statement of fact and conjectures or opinions.

Reports of accident damage to equipment and/or property of others are to be made on applicable forms and to the Risk Manager.

- DEATH AND INJURY REPORTS. The death, serious injury, or serious illness of personnel is of vital interest to management and of grave concern to the family of the employee.

  Personal assistance by LeChase representatives shall be extended in those instances where circumstances so demand.

  - Accidental Death: Job-related. Immediately following the event of a job-related accident resulting in the death of any person, the Project Manager must notify the President and Safety Director. The Safety Director will notify the insurance carrier and will determine who shall notify next-of-kin if this has not already occurred. Reports are required immediately and include:
    - "LCS Injury Report", the form furnished by Worker's Compensation Commission, and Insurance Carrier.
    - Record on OSHA log.
    - Copies of all confirming letters shall be sent to the Risk Manager.
    - The OSHA area office nearest your location will be contacted by the Safety Director.
  - Serious Injury: Job-related. Immediately following an accident which results in serious injury, notify the Safety Director and/or Risk Manager.
  - Vehicular Accidents. All vehicular accident investigations shall include written information and photos noted immediately following the accident. Contact the Risk Manager immediately for any special instructions.
  - All Injuries. Treatment shall be administered by Project Certified Personnel first aid and/or by the project's designated physician or clinic, as the case may require.

    Injuries requiring treatment by physician must be timely reported with proper (LCS Injury Report) forms to either the State Worker's Compensation Commission, the Insurance Carrier, or both depending on the previous arrangements for compensation coverage for the project.

Appendix A: Accident / Incident Investigation Report

LeCHASECONSTRUCTION

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ACCIDENT / INCIDENT INVESTIGATION

Send completed form to Florence Indovina
Fax: (585) 662-4468 or Email: indof@lechase.com

ACCIDENT / INCIDENT INFORMATION

Date of Accident/Incident: _____ ***Time of Accident/Incident:*** _____ ☐ AM ☐ PM

Employer: ☐ LCS ☐ QSI ☐ Contractor *(Employer)* _____ ☐ Other

If Contractor: ☐ Prime to Owner ☐ Sub to LCS ☐ 2nd Tier Sub to LCS Sub _____

Job Number: _____ ***Superintendent:*** _____ ***PM:*** _____

Jobsite or Location: _____ ***Day:*** ☐ S ☐ M ☐ T ☐ W ☐ T ☐ F ☐ S

Is this accident / incident the result of rework? ☐ Yes ☐ No

Weather: ☐ Inside ☐ Outside ***Temperature:*** _____

INJURED PERSON

Name: _____ ***Date Hired:*** _____

☐ Male ☐ Female ***Age:*** _____ ***Date of Birth:*** _____ ***Ht:*** _____ ***Wt:*** _____

Safety Orientation: ☐ Yes ☐ No ***Date:*** _____ ***SS#*** (last four): _____

Employee Began Work: _____ ☐ AM ☐ PM ***Home Phone:*** (_____) _____

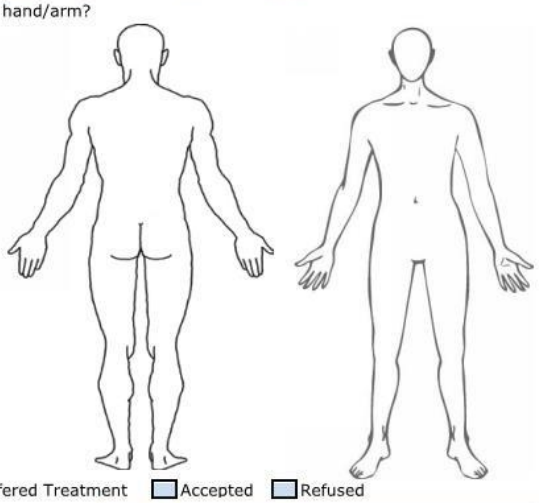
Home Address: _____

Job Position / Craft: _____ ***Years Experience:*** _____

Nature of Injury: Body Part: _____ ☐ Left ☐ Right ☐ Lower ☐ Upper

If upper extremity, is it the: ☐ Dominant or ☐ Nondominant hand/arm?

☐ Bruising ☐ Dislocation ☐ Strain/Sprain
☐ Amputation ☐ Foreign Body ☐ Burn/Scald
☐ Internal ☐ Laceration/Cut ☐ Fracture
☐ Chemical Reaction ☐ Scratch/Abrasion
☐ Other (specify) _____



Remarks: _____

Treatment:

Was Medical Treatment Offered?	☐ Yes	☐ No	Offered Treatment	☐ Accepted ☐ Refused
First Aid Administered On Site?	☐ Yes	☐ No	If yes, describe	_____
Treated at PMP *(Preferred Med Provider)*?	☐ Yes	☐ No	Name/Address	_____
Treated by own Physician?	☐ Yes	☐ No	Name/Address	_____
Treated in Emergency Room?	☐ Yes	☐ No	Name/Address	_____
ANY LOSS OF WORK TIME?	☐ Yes	☐ No	Return to Work Date	_____

Accident/Incident Investigation

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PROPERTY DAMAGE

Property, Material or Equipment damaged (include serial number, if applicable):

Object or Substance Inflicting Damage:

Describe Damage:

Client / Owner Contact Information:

Name: Title:

Phone: ( ) Email:

ACCIDENT / INCIDENT DESCRIPTION

Give a detailed description of ***WHAT HAPPENED AND WHY*** including what was going on just before the incident, any tools and/or machinery being used, etc. (use separate paper, if needed) (ATTACH PHOTOS AND/OR DIAGRAMS)

T.H.A. for this? ☐ Yes ***(Include with information sent)*** ☐ No

PPE Worn? ☐ Yes ☐ No ☐ N/A

PREVENTIVE ACTIONS / CORRECTIVE MEASURES

Describe what action(s) will be taken to prevent recurrence. Deadline? By Whom? Date Complete?

What are the chances of the accident happening again? ☐ Frequent ☐ Occasional ☐ Rare

Date of report :

Report Submitted by: Signature:

Phone: ( ) Email:

ANY PERSON WHO KNOWINGLY AND WITH INTENT TO DEFRAUD ANY INSURANCE COMPANY, FILES A STATEMENT OF CLAIM CONTAINING ANY MATERIAL, FALSE INFORMATION OR CONCEALS FOR THE PURPOSE OF MISLEADING, INFORMATION CONCERNING ANY FACT MATERIAL, THERETO, COMMITS A FRAUDULENT ACT, WHICH IS A CRIME, PUNISHABLE BY LAW.

I have read this report and all its content is correct.

Injured Person Signature Date

If there's a witness present, submit completed/signed Witness Statement with this form

Accident/Incident Investigation

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WITNESS STATEMENT

(Witness to fill in completely)

ACCIDENT / INCIDENT INFORMATION

Date of Accident/Incident: _____ ***Time of Accident/Incident:*** _____ ☐ AM ☐ PM

Job Number: _____ ***Superintendent:*** _____ ***PM:*** _____

Jobsite or Location: _____

INJURED PERSON

Name: _____

WITNESS INFORMATION

Name: _____ Company: _____

Address: _____

Home Phone: ( ) _____ Work Phone: ( ) _____

Cell Phone: ( ) _____ Email: _____

ACCIDENT / INCIDENT DESCRIPTION

Give a detailed description of your recollection of what happened including what was going on just before the incident, any tools and/or machinery being used, etc.

Which of the following would be the best way to contact you in regards to questions? (Mark with an X)

____ Home Phone ____ Work Phone ____ Cell Phone ____ Email ____ Regular Mail

_____ Signature

_____ Date

Submit Separate Statement for EACH Witness

Accident/Incident Investigation

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Appendix B: Root Cause Analysis Form

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ROOT CAUSE ANALYSIS

Send Completed and Signed Form to Florence Indovina -- Fax: (585) 662-4468 Email: indof@lechase.com

☐ **Accident (Injury) Root Cause** ☐ **Incident (Non-Injury) Root Cause**

Injured Person Name: _____ ***Date of Accident/Incident:*** _____

Employer: ☐ LCS ☐ QSI ☐ Contractor _____ ☐ Other

If Contractor: ☐ Prime to Owner ☐ Sub to LCS ☐ Sub to LCS Sub _____

Job Number: _____ ***Jobsite or Location:*** _____

Policies/Procedures		
☐	Wrong Revision	- Using a written policy/procedure that is not the most up-to-date revision
☐	Typo	- Typing error in written policy/procedure
☐	No Policy/Procedure	- There SHOULD have been a written policy/procedure
☐	Not Available	- There is a written policy/procedure that was not available for review
☐	Steps Wrong	- Steps found in the written policy/procedure were listed out of order
☐	Instruction Wrong	- Errors in the policy/procedure instructions
☐	Ambiguous Instruction	- "Gray" areas in written policy/procedure leading to misunderstanding
☐	Not Required But Should Be	- Written policy/procedure used as "guide" instead of "requirement"
☐	Followed Incorrectly	- Written policy/procedure instructions followed incorrectly
Training		
☐	Not Provided	- Training program developed but not presented
☐	Did Not Attend	- Training program available but person did not attend
☐	Lack of Teaching	- Training program available but not presented effectively
☐	No Testing	- Training program material not understood
☐	Continuing Training	- Training program needs to be repeated for retention/refresher
Onsite Management		
☐	Lack of Enforcement	- Onsite Management did not enforce rules/regulations
☐	Lack of Accountability	- Onsite Management did not assign specific person/team for task
☐	Employee Relations	- Poor Relations between onsite management and employees
☐	Policy Not Strict	- Written policy/procedure wording misinterpretation - (i.e. "should" vs. "you must")
☐	Controls	- No physical security for project, office, specific work area
Preparation/Supervision		
☐	No Preparation	- No pre-task planning/assessment for proper/safe execution
☐	Pre-Job Brief	- No pre-task discussion to determine proper/safe execution
☐	Walk-Through	- No pre-task walk-through
☐	Lock-out/Tag-out	- No pre-task control of hazardous energy
☐	Employee(s) Assigned	- Lack of knowledge/experience of person/team performing task
☐	No Supervision	- Supervisor not at work location or unavailable to answer questions when needed
☐	Teamwork	- Lack of agreement on how task will be performed
☐	Schedule	- When task needs to begin/end does not match actual scope/amount of work
☐	Fatigue	- Inability of person/team to concentrate
Instruction		
☐	No Communication	- Lack of individual verbalizing instructions vs. active listening of participants
☐	Turnover	- Lack of information shared between work shifts or crafts regarding specific task
☐	Complex Instruction	- Lack of clear/concise instruction
☐	Terminology	- Words/phrases in communication not understood (i.e. slang, language barrier)
☐	Timely Instruction	- Specific information not given prior to task
Interface with Equipment/Work Area		
☐	Hot Environment	- High temperatures that negatively affect health
☐	Cold Environment	- Low temperatures that negatively affect health
☐	Display Poor	- Displays/gauges on equipment are deteriorated
☐	Slippery Surface	- Surfaces affected by grease, ice, water, mud, etc.
☐	Cramped Position	- Working in a cramped position/space
☐	Body Position	- Long period of time in same body position
☐	Condition of Tool	- Condition of tool is poor or damaged
☐	Lighting	- Lighting not sufficient
☐	Equipment Status	- Tool/equipment not properly inspected prior to use
☐	Poor Housekeeping	- Work area not kept clear of debris
☐	Proper PPE not used	- Not wearing hard hat, safety goggles, face shield, proper gloves, etc.
☐	Unaware	- Unaware of Surroundings
Other		
☐	Pre-Existing Condition	- Aggravated by work conditions and/or work performed
☐	Not Work Related	- Not related to work conditions and/or work performed
☐	No Other Category applies	- Describe: _____

Submitted by: _____ ***Title:*** _____ ***Date:*** _____

Root Cause Discussion with:

Name	***Company***	***Title***

Root Cause Analysis

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Appendix C: Company Owned Vehicle or Equipment Accident Report

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COMPANY OWNED VEHICLE OR EQUIPMENT ACCIDENT REPORT

Send Completed form to Florence Indovina -- Fax: (585) 662-4468 or Email: indof@lechase.com

FIRST STEPS	DO NOT SAY	AT THE ACCIDENT SCENE
▪ Remain Calm ▪ Anyone injured? ▪ Call 911 (Police/EMT) ▪ Set up flares-get off the road	▪ Don't say -- It's all my fault, even if it is ▪ Don't say - My insurance company will pay for everything	▪ Fill out as much information as possible on this report ▪ **TAKE PICTURES** ▪ If the police are called, cooperate and tell them what you know

When another vehicle is involved, collect information. Don't be afraid to point out to law enforcement anything unusual about how the accident occurred. Some accidents are caused intentionally. ***DON'T CONFRONT THE INDIVIDUAL(S) OF THE OTHER VEHICLE(S).*** Later, fill out side 2 of this form and write down everything you can remember while it's still fresh in your mind.

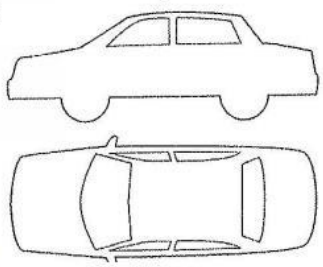
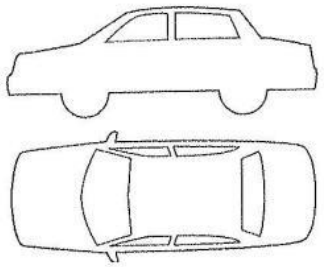
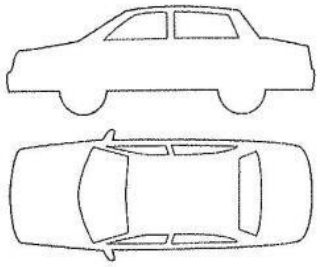
SEND COMPLETED AND SIGNED FORM TO FLORENCE WITHIN 24 HOURS OF ACCIDENT

ACCIDENT DETAILS - *use additional paper if needed* — **FILL OUT AT ACCIDENT SCENE**

▶ Day _____ Time _____ ☐ AM ☐ PM

▶ Location State _____ County _____ City/Town _____ Road/Route _____

▶ **DAMAGE DESCRIPTION**

LeChase Owned Vehicle - A	***Other Vehicle - 1***	***Other Vehicle -2***
Where is the damage? Mark with an **X**	Where is the damage? Mark with an **X**	Where is the damage? Mark with an **X**
A	1	2
		

▶ **VEHICLE TOWED TO** _____ Phone: ( ) _____

VEHICLE TOWED TO _____ Phone: ( ) _____

VEHICLE TOWED TO _____ Phone: ( ) _____

▶ **OTHER DRIVER/VEHICLE INFORMATION - FROM INSURANCE CARD**

Other Vehicle (1)	Other Vehicle (2)
Driver's Name	Driver's Name
Driver's Address	Driver's Address
Driver's Phone ( )	Driver's Phone ( )
Vehicle Make	Vehicle Make
Vehicle Model & Year	Vehicle Model & Year
Vehicle Color	Vehicle Color
Vehicle Plate Number	Vehicle Plate Number
VIN #	VIN #
Insurance Company	Insurance Company
Agent Name & Phone	Agent Name & Phone
Does Driver Own Vehicle? ☐ ☐ No	Does Driver Own Vehicle? ☐ Yes ☐ No
Owner's Name	Owner's Name
Owner's Address	Owner's Address
Owner's Phone ( )	Owner's Phone ( )

Accident Report - LCS Vehicle Equipment
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ALL PERSONS INVOLVED - ***use additional paper if needed***

Name/Address	A,1 ,2	Seat Belt?	Driver or Passenger	Age	Sex	Describe Injuries

POLICE INFORMATION

Officer Name _____ Badge # _____ Phone ( ) _____

Department _____ Police Report ☐ No ☐ Yes Report # _____

Ticket Issued? ☐ No ☐ Yes If yes, to ☐ LCS Driver or ☐ Other Driver

WITNESS INFORMATION - ***use additional paper if necessary***

Name	Name	Name
Home Address	Home Address	Home Address
Home Telephone Number ( )	Home Telephone Number ( )	Home Telephone Number ( )
In Which Vehicle? ☐ Your Vehicle (A) ☐ Other (1) ☐ Other (2) ☐ Other	In Which Vehicle? ☐ Your Vehicle (A) ☐ Other (1) ☐ Other (2) ☐ Other	In Which Vehicle? ☐ Your Vehicle (A) ☐ Other (1) ☐ Other (2) ☐ Other

ACCIDENT SCENE INFORMATION - ***Check ALL that apply*** - **FILL IN BEFORE SENDING FORM**

PRE-ACCIDENT VEHICLE ACTION:

Vehicle A	Vehicle 1	Vehicle 2	
☐	☐	☐	Going Straight Ahead
☐	☐	☐	Making Right Turn
☐	☐	☐	Making Left Turn
☐	☐	☐	Making U Turn
☐	☐	☐	Starting from Parking
☐	☐	☐	Starting from Traffic
☐	☐	☐	Slowing or Stopping
☐	☐	☐	Stopped in Traffic
☐	☐	☐	Entering Parked Position

Vehicle A	Vehicle 1	Vehicle 2	
☐	☐	☐	Parked
☐	☐	☐	Avoiding Object in Road
☐	☐	☐	Changing Lanes
☐	☐	☐	Overtaking
☐	☐	☐	Merging
☐	☐	☐	Backing
☐	☐	☐	Making Right Turn on Red
☐	☐	☐	Making Left Turn on Red
☐	☐	☐	Other

DIRECTION OF TRAVEL:

Vehicle A	Vehicle 1	Vehicle 2	
☐	☐	☐	North
☐	☐	☐	Northeast
☐	☐	☐	East
☐	☐	☐	Southeast
☐	☐	☐	Southeast
☐	☐	☐	Southwest
☐	☐	☐	West
☐	☐	☐	Northwest

TYPE OF ACCIDENT:

Collision With..

- ☐ Other Motor Vehicle
- ☐ Animal
- ☐ Railroad Train
- ☐ **Pedestrian**
- ☐ **Bicyclist**
- ☐ **In-line Skater**
- ☐ Other _____

No Collision..

- ☐ Overturned
- ☐ Fire/Explosion
- ☐ Submersion
- ☐ Ran Off Roadway Only
- ☐ Other _____

Collision with fixed object..

- ☐ Light Support/Utility Pole
- ☐ Guide Rail-Not at End
- ☐ Guide Rail-End
- ☐ Sign Post
- ☐ Tree
- ☐ Building/Wall
- ☐ Fence
- ☐ Crash Cushion
- ☐ Culvert/Head Wall
- ☐ Median-Not at End
- ☐ Median-End
- ☐ Snow Embankment
- ☐ Bridge Structure
- ☐ Barrier
- ☐ Curbing
- ☐ Earth Embankment/Ditch
- ☐ Other _____

TRAFFIC CONTROL:

- ☐ None
- ☐ Traffic Signal
- ☐ Stop Sign
- ☐ Flashing Light
- ☐ Yield Sign
- ☐ RR Crossing Sign
- ☐ RR Crossing Flashing Light
- ☐ RR Crossing Gates
- ☐ Stopped School Bus-Red Lights Flashing
- ☐ Other _____
- ☐ Maintenance Work Area
- ☐ Construction Work Area
- ☐ Utility Work Area
- ☐ Officer/Guard
- ☐ No Passing Zone

ROADWAY & ROADWAY SURFACE

- ☐ Straight and Level
- ☐ Straight and Grade
- ☐ Straight at Hillcrest
- ☐ Curve and Level
- ☐ Curve and Grade
- ☐ Curve at Hillcrest
- ☐ Dry
- ☐ Wet
- ☐ Muddy
- ☐ Snow/Ice
- ☐ Slush
- ☐ Other _____

Accident Report - LCS Vehicle Equipment

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ACCIDENT SCENE INFORMATION CONTINUED...

WEATHER

- ☐ Clear
- ☐ Rain
- ☐ Cloudy
- ☐ Other
- ☐ Snow
- ☐ Fog/Smog/Smoke
- ☐ Sleet/Hail/Freezing Rain

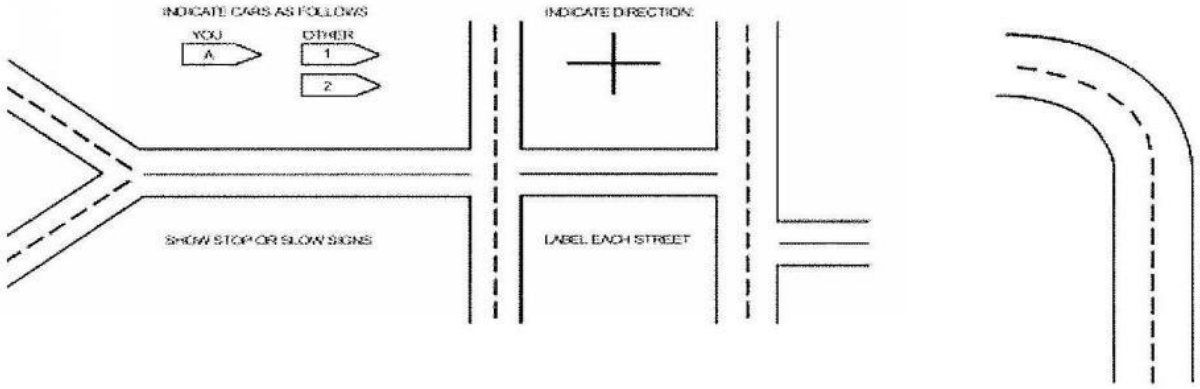
PEDESTRIAN/BICYCLIST/IN-LINE SKATER LOCATION AND ACTION

- ☐ Pedestrian/Bicyclist/In-line Skater at Intersection
- ☐ Pediestrian/Bicyclist/in-line Skater NOT at Intersection

- ☐ Crossing with Signal
- ☐ Crissing Against Signal
- ☐ Crossing-No Signal, Marked Crosswalk
- ☐ Crossing-No Signal or Crosswalk
- ☐ Pushing/Working on Car
- ☐ Working in Roadway
- ☐ Other Actions in Roadway
- ☐ Riding/Walking/Skating Along Highway with Traffic
- ☐ Riding/Walking/Skating Along Highway against Traffic
- ☐ Emerging from in Front of or Behind Parked Vehicle
- ☐ Going to/from Stopped School Bus
- ☐ Getting on/off Vehicle other than School Bus
- ☐ Playing in Roadway
- ☐ Not in Roadway (Indicate) _____

DIAGRAM OF ACCIDENT SCENE

ILLUSTRATE POSITION OF CARS AT TIME OF COLLISION. SHOW SKID MARKS.
(IF ANY STREET IS MORE THAN TWO LANES OR IS ONE WAY ONLY, PLEASE INDICATE.)



DESCRIBE THE ACCIDENT IN YOUR OWN WORDS *(use separate sheet, if necessary)*

COMPANY OWNED VEHICLE / EQUIPMENT INFORMATION

Employee/Driver Name _____ Phone Number: ( ) _____

Company Vehicle / Equipment Number _____ License Plate Number _____

Year ____ Make _____ Model _____ VIN # _____

distinguish between numbers and letters

Employee/Driver Signature _____ Date _____

Accident Report - LCS Vehicle Equipment

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LeChase Construction Services, LLC
Jobsite Safety Manual

Section 6.1 - Serious Incident Protocol

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Purpose

The following procedure establishes the appropriate response and management of Serious Incidents (SI) and Potentially Serious Incidents (PSI) on all LeChase projects.

Scope

This policy applies to all LeChase Construction, QSI, Conifer-LeChase, and Platinum- LeChase employees, affiliate companies, subcontractors, vendors, and visitors.

Serious Incidents and Potentially Serious Incidents

Serious Incidents (SI) are defined as incidents that resulted in:

- **Life-threatening injury** that, if not immediately addressed, is likely to lead to the death of the affected individual. Examples include, but are not limited to:
  - Laceration or crushing injuries that result in significant blood loss;
  - Damage to the brain or spinal cord;
  - Event requiring resuscitation;
  - Chest/abdominal trauma affecting vital organs;
  - Severe burns
- **Life-altering injury** that results in permanent or long-term impairment or loss of use of an internal organ, body function, or body part. Examples include, but are not limited to:
  - Significant head injuries;
  - Spinal cord injuries;
  - Paralysis;
  - Amputation

Potentially Serious Incidents (PSI) are defined as incidents which:

- given a slight shift in time or space, could have resulted in serious injury or death; or
- if duplicated, could be reasonably expected to result in life-threatening or life- altering injury

SBU leads and Regional Safety Managers will review each incident using the above criteria to make initial determinations on whether incidents are deemed Serious or Potentially Serious.

Requirements

Serious and Potentially Serious Incidents require special focus and additional response. When a SI or PSI occurs, the following steps will be taken:

1. **Immediate Investigation:** An immediate investigation will be conducted by the project team, Regional Safety Manager, and subcontractor (if applicable).

2. **Incident Report:** The project team will provide a written preliminary incident report to the SBU Lead, Corporate EH&S, Regional Safety Manager, and Risk Management **on the day of the event**.

3. **Corporate Incident Review Meeting:** The SBU Lead, project team and subcontractor (if applicable) will attend a non-optional meeting to discuss the incident with the Board of Directors and

Corporate EH&S. Topics of discussion will include incident details and logistics, corrective measures and any other pertinent information related to the incident. This meeting will be conducted **within ten business days** of the incident.

4. **Finalize Investigation**: The project team and Regional Safety Manager will finalize the written incident report. The finalized report will be submitted to the SBU Lead, Corporate EH&S and other pertinent parties

LeChase Construction Services, LLC
Jobsite Safety Manual

Section 7 - Definition of Terms/Guidelines

These definitions/guidelines are not all inclusive. They are not complete and do not contain all definitions/guidelines for construction. It is only a guide to get started! *Certain sections of this manual also include pertinent definitions/guidelines.*

Abrasive Grinding	Abrasive wheel bench or stand grinders must have safety guards strong enough to withstand bursting wheels. Adjust work rests on grinders to a clearance not to exceed 1/8 inch between rest of wheel surface. Inspect and ring test abrasive wheels before mounting. Always leave wheel in working condition for next user. Properly dress wheel before using and/or when finished. The RPM rating of the abrasive wheel must be in accordance with the RPM rating of the motor.
Access	Only safe means of access to and from work areas will be used. Jumping from or to work areas is not allowed nor is sliding down cable ropes and guys.
Air Tools	Secure pneumatic tools to hose in positive manner to prevent accidental disconnection. Install and maintain safety clips or retainers on pneumatic impact tools to prevent attachments from being accidentally expelled. All hose exceeding ½ inch inside diameter require safety devices at source of supply to reduce pressure in case of hose failure.
ANSI	American National Standards Institute.
Approved	Sanctioned, endorsed, accredited, certifies or accepted as satisfactory by a duly constituted and nationally recognized authority or agency.
Authorized Person	A person approved or assigned by the employer to perform a specific type of duty or to be at a specific location or locations at the jobsite.
Attitude	Before starting any task, employees must consider the possible effects of their actions on themselves and others and take appropriate protective measures.
Belt Sanding Machine	Belt sanders will not be used without guards in place. The directional travel indicated on the belt must match the travel of the sander.
Competent Person	One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which

	are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
Compressed Air (Use Of)	Compressed air used for cleaning purposes may not exceed 30 psi and then only in conjunction with effective chip guarding and personnel protective equipment. Exceptions to 30 psi are allowed only for concrete form, mill scale and similar cleaning operations. The use of compressed air to clean off yourself or other workers is not allowed.
Compressed Gas Cylinders	Put valve protection caps in place before compressed gas cylinders are transported, moved, or stored. Cylinder valves will be closed when work is finished and when cylinders are empty or being moved. Compressed gas cylinders will be secured in an upright position, with chain, steel angle, etc., at all times. Keep cylinders at safe distance or shield from welding or cutting operations and placed where they cannot become part of an electrical circuit. Oxygen, acetylene, and propane must not be stored together. They must be 20 feet apart. Oxygen and fuel gas regulators must be in proper working order while in use.
Concrete, Concrete Forms, and Shoring and Lift Slab Operations	All protruding reinforcing steel onto which employees could fall must be guarded to eliminate the hazard of impalement. Wire mesh needs to be secure from recoiling. Formwork and shoring will be designed and constructed to safely support all loads imposed during concrete placement. All components will be inspected prior to erection. Drawings or plans of jack layout, formwork, shoring, working decks and scaffolding systems will be available at job site. Forms and shores may not be removed until it has been determined that the concrete has gained sufficient strength to support its weight and superimposed loads.
Confined Spaces	Confined or enclosed spaces include: storage tanks, process vessels, bins, boilers, ventilators or exhaust ducts, sewers, underground utility vaults, tunnels, pipe

	lines and open top spaces more than 4 feet in depth, such as pits, tubs, vaults and vessels.
Cranes or Derricks	Rated load capacities, recommended generating speeds and special hazard warnings or instructions must be conspicuously posted on all equipment. Instructions and warnings must be visible from the operator's station. Copies of inspection records must be present in the operator's cab. Accessible areas within swing radius of crane must be barricaded to prevent employees from being struck or crushed by the crane. Except where electrical distribution and transmission lines have been de-energized and visibly grounded, or where insulation barriers not a part of or an attachment to the equipment or machinery have been erected to prevent physically contact with the lines, no part of the crane or its load shall be operated within 10 feet of a line rated to 50kV or below; 10 feet + 4 inches for each 1kV over 50kV for lines rated over 50kV, or twice the length of the line insulator, but never less than 10 feet. Cranes will be inspected before each use by the operator. Any defects must be corrected before use. Logs of crane inspection must be kept with the crane.
Crane and Derrick Suspended Personnel Platforms	Crane or derrick suspended personnel platforms may not be used unless the erection, use and dismantling of conventional means of reaching the work site would be more hazardous or not possible. Equipment used for this purpose must be tested and equipped in strict accordance with federal and state laws.
Construction Work	Work for construction, alteration, and/or repair, including painting and decorating.
Designated Person	"Authorized Person" as defined in this section.
Disposal Chutes	Use an enclosed chute whenever materials are dropped more than 20 feet to any exterior point of a building. When debris is dropped through floor holes without a chute, the area where the material is dropped must be enclosed with barricades at least 42 inches and not less than 6 feet back

from projected edges of opening. Overhead, post warning signs at each level.

Electrical – General

All extension cords must be 3-wire type, protected from damage and not fastened with staples, hung from nails or suspended from wires. No cord or tool with a damaged ground plug may be used.

Bulbs on temporary lights will be equipped with guards. Temporary lights may not be suspended by their electric cords unless so designed. Open conductors are not permitted.

Receptacles for attachment plugs will be of approved, concealed contact type. Where different voltages, frequencies or types of current are applied, receptacles must be such that attachment plugs are not interchangeable.

Each disconnecting means from motors and appliances and each service feeder or branch circuit at point of origin must be legibly marked to indicate its purpose, unless located and arranged so purpose is evident. Cable passing through work areas will be covered or elevated to protect from damage or sleeved when going through permanent or temporary walls. Boxes with covers for disconnecting means must be securely and rigidly fastened to mounting surface. Equipment or circuits that are de-energized shall be rendered inoperative and have tags attached at all points where such equipment or circuits can be energized. Tags shall be placed to identify plainly that equipment or circuits being worked on.

No employee may work in proximity to any electric power circuit that may be contacted during course of work unless protection has been taken against electric shock by de-energizing circuit and grounding, or guarding with effective insulation. In work areas where exact location of underground electric power lines is known, workers using jackhammers, bars or other hand tools which may contact lines, must wear insulated, protective gloves.

Electrical – Grounding

All 15- and 20-ampere receptacle outlets on single-phase, 120-volt circuits for construction sites which are not a part

of permanent wiring of the building or structure, must be protected by ground- fault circuit interrupters.

Electrical – Illumination

Construction areas should be lighted to not less than minimum illumination intensities listed while work is in progress.

Foot Candles – Area of Operations:

Five (5) General construction area lighting. General construction areas, concrete placement, active storage areas, loading platforms, refueling and field maintenance areas and stairways.

Five (5) Indoor. Warehouse, corridors, hallways and exit ways.

Five (5) Tunnels, shafts and general underground work areas. Exception: minimum of 10 foot candles is required at tunnel and shaft heading during drilling, mucking and scaling. Bureau of Mines approved cap lights shall be acceptable for us in the tunnel heading.

Ten (10) General construction plant and shops. For example: Batch plants, screening plants, mechanical and electrical equipment rooms, carpenter's shops, rigging lofts, active storerooms, mess halls, indoor toilets and workrooms.

Equipment – Operation of Hand Tools

No employee will operate electric, gas or hand powered tools or equipment unless familiar with use of the item and safety precautions required. Supervision will provide necessary safety information for all tasks and equipment. Faulty equipment shall be taken out of service immediately.

Employees will not use unsafe hand tools. Wrenches may not be used when jaws are sprung to the point slippage occurs. Keep impact tools free of mushroomed heads. Keep wooden tool handles free of splinters or cracks and tight in the tool.

	Electric power operated tools with either be approved double insulated, be properly grounded or used with ground fault circuit interrupters.
Explosives & Blasting	Only authorized and qualified persons will be permitted to handle and use explosives. Smoking and open flames are not permitted within 50 feet of explosives and detonator storage magazines. When blasting near or around buildings you should have an engineering firm to monitor for cracks, etc.
Eye and Face Protection	Eye Protection (safety glasses) must be worn by LeChase Construction Services personnel at all times. Face protection will be provided and must be worn when machines or operations present potential face injury. Employees involved in welding operations must wear filter lenses or plates of the proper shade number. Employees exposed to laser beams must use suitable laser safety goggles which will protect for the specific wavelength of the laser and be optical density (OD) adequate for the energy involved. Safety Glasses/Goggles will be worn over any employees' own prescription glasses that do not meet ANSI safety standards. Prescription safety glasses must meet ANSI Standard Z87.1.
Fencing	Security fencing protects employees, the Company and the general public. All fencing must be maintained by all employees to the extent of their job description. Repeat defects beyond your ability to repair to your supervisor.
Fire Protection	Firefighting equipment must be conspicuously located and readily accessible at all times and periodically inspected and maintained in operating condition. Report any inoperative or missing equipment to supervision. If the project includes automatic sprinkler protection, installation will closely follow construction and be placed in service as soon as applicable laws permit, following completion of each story. Fire extinguishers, rated not less than 2A, will be provided for each 3,000 square feet of building area (or major fraction). Travel distance from any point to the nearest fire extinguisher may not exceed 100 feet with at least one

	extinguisher per floor. In multi- story buildings, at least one fire extinguisher must be located adjacent to the stairways.
Flag Person	When signs, signals and barricades do not provide necessary protection on or adjacent to a highway or street, flag person or other appropriate traffic controls may be used. Flag person will wear red or orange warning garments. Warning garments worn at night will be of reflective material. Flag persons shall at all times while directing traffic, be equipped with suitable flags, placards, signs, etc.
Flammable and Combustible Liquids	Only approved containers and portable tanks will be used for storage and handling of flammable combustible liquids. All containers must have flame arrestors to be an approved safety container. No more than 25 gallons of flammable or combustible liquids may be stored in a room outside of an approved storage cabinet. No more than 60 gallons of flammable or 120 gallons of combustible liquids may be stored in any one storage cabinet. No more than three storage cabinets may be located in a single storage area. Inside storage rooms for flammable and combustible liquids must be of fire-resistive construction, self-closing fire doors, 4-inch sills or depressed floors, a ventilation system of at least six air changes per hour and electrical wiring and equipment approved for Class I, Division I locations. Storage in containers outside buildings may not exceed 1,100 gallons in any one pile or areas. Grade storage areas to divert possible spills away from building or other exposures, or surround with a curb or dike. Locate storage areas at least 20 feet from any building and keep free from weeds, debris and other combustible materials. Keep flammable liquids in closed containers when not in use. Post conspicuous and legible signs prohibiting smoking in service and refueling areas.
Floor Openings, Open Sides, Hatchways, etc.	Guard openings with a standard guard rail and toe board or cover. Provide railing on all exposed sides, except at entrances to stairways. Every open-sided floor or platform 6 feet or more about adjacent floor or ground level, must be guarded by a

	standard railing, or equivalent, on all open sides except where there is entrance to a ramp, stairway or fixed ladder. Runways 4 feet high or more need standard railings on all open sides. Guard ladder way floor openings or platforms with standard guard rails and standard toe boards on all exposed sides, except at entrance to opening, with passage through the railings provided by a swinging gate or offset so a person cannot walk directly into opening. Temporary floor openings will have standard railings or effective covers. Floor holes into which persons can accidentally walk will be guarded (marked) by either a standard railing with standard toe board on all exposed sides, or a standard floor hole cover. While the cover is not in place, the floor hold will be protected by a standard railing.
Gases, Vapors, Fumes, Dusts, and Mists	Exposure to toxic gases, vapors, fumes, dusts and mists at a concentration above those specified in the “Threshold Limit Values of Airborne Contaminants” of the American Conference of Governmental Industrial Hygienists should be avoided. When engineering and administrative controls are not feasible to achieve full compliance, protective equipment or other protective measures will be used to keep the exposure of employees to air contaminants within the limits prescribed. Any equipment and technical measures used for this purpose must be reviewed for each particular use by a technically qualified person. Employees will wear all furnished equipment at all times.
Hard Hats	Hard hats will be worn at all times by LeChase personnel.
Hazardous Substance	A substance which, by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, or otherwise harmful, is likely to cause death or injury.
Hoists, Material, and Personnel	Rated load capacities, recommended operating speeds and special hazard warnings or instructions posted on cars and platforms may not be exceeded. Material hoistway entrance hoists will be protected by substantial

	full width gates or bars. Hoistway door or gates of personnel hoists will be not less than 6 feet 6 inches high and be protected with mechanical locks which cannot be operated from landing side and are accessible only to person on the car. Provide ¾" plywood overhead protective covering on the top of the hoist cage or platform. No riders are allowed on material hoist except for inspection or maintenance.
Horseplay	All disruptive activities usually referred to as horseplay are forbidden. No practical jokes or fights will be tolerated.
Housekeeping	Form and scrap lumber with protruding nails and all other debris will be kept clear from work area. Remove combustible scrap and debris at regular intervals. Containers will be provided for collection and separation of all refuse. Covers are required on containers allowed on job sites. At the end of each portion of work, return all tools and excess material to proper storage. Clean up all debris before moving onto next phase. Each employee is responsible for keeping their own work areas clean.
Injuries	All injuries, even those that seem slight, must be reported immediately to project supervision.
Jointers	Each hand-fed planer and jointer with a horizontal head must be equipped with a cylindrical cutting head. Keep opening in the table as small as possible. Each hand-fed jointer with a horizontal cutting head must have an automatic guard to cover the section of the head on working side of fence or cage. A proper jointer guard will automatically adjust itself to cover unused portion of the head and will remain in contact with material at all times. Each hand- fed jointer with horizontal cutting head must have a guard which will cover he section of the head back of the cage or fence.
Ladders	The use of ladders with broken or missing rungs or steps, broken or split side rails, or with other faulty or defective construction, is prohibited. When ladders with such defects are discovered, withdraw them from service immediately. Place portable ladders on a substantial base at a 4-1 pitch, have clear access at top and bottom, extend a minimum of 36 inches above landing, or when practical, provide grab rails. Secure against movement while in use.

Removal defective ladders from site, repair or destroy faulty. Portable metal ladders may not be used for electrical work or where they may contact electrical conductors.

Job-made ladders will be constructed for their intended use. Cleats will be inset into side rails ½ inches, or filler blocks used. Cleats will be uniformly spaces 12 inches, top-to-top.

All LCS ladders are to be individually identified (documented) and inspected, and the documentation turned in to the Safety Department weekly.

Lasers

Only trained employees with proof of qualification card will be allowed to operate lasers. Employees will wear proper eye protection where there is a potential exposure to laser light greater than 0.005 watts (5 milliwatts).

Areas in which lasers are being used shall be posted with standard laser placards.

Beam shutters or caps will be utilized, or laser turned off when laser transmission is not actually required. When lasers are left unattended for a substantial period of time, turn them off. (See safety check list specifications).

Masonry Access Zone

Limited access zones are to be established on the un-scaffold side of un-braced masonry walls. The zones are to be equal to the finished height of the wall plus 4 feet.

Medical Services and First Aid

When a medical facility is not reasonably accessible, a person trained to render first aid will be available at the work site. All communicable diseases, infectious diseases or bloodborne pathogens should be combated by adding vinyl gloves, one-way facemask and 2-4 oz. of Clorox bleach to all first aid kits.

First aid supplies must be readily available, and the telephone number of physicians, hospitals, or ambulances must be conspicuously posted.

Periodically, LeChase Construction Services may provide First Aid, P.D.T., and CPR Training. Outside agencies will be utilized for this training when need requires.

Motor Vehicles and Mechanized Equipment

Check all vehicles in use at the beginning of each shift to ensure that all parts, equipment, and accessories affecting safe operation are in proper operating condition and free from defects. All defects shall be corrected before placing vehicle in service.

No employee shall use any motor vehicle or earthmoving and compacting equipment having an obstructed view to the rear, unless the vehicle has a reverse signal alarm distinguishable from surrounding noise levels, or the vehicle is backed up only when an observer signals it is safe to do so.

Heavy machinery, equipment, or parts thereof which are suspended or held aloft will be substantially blocked to prevent falling or shifting work under or between them.

Personal Protective Equipment

The employee is responsible for wearing appropriate personal protective equipment in operations where there is exposure to hazardous conditions or where need is indicated to reduce hazard. Hard hats and eye protection are required at all times.

Powder Actuated Tools

Generally, three types are available for use on our projects. They are high velocity, standard velocity, and low velocity types. Fasteners driven by these types have approximately equal holding power. The greatest number of serious injuries and fatalities have been from misuse of high/standard velocity tools.

Therefore, to reduce the possibility of injuries, only low velocity powder actuated fastenings tools should be used on LeChase projects. The stud, pin, or fastener of these tools shall be caused to have a velocity not to exceed 300 feet per second when measured 6-1/2 feet from the muzzle by accepted ballistic test methods.

Project Supervision must enforce compliance with state and local regulations governing the use of the tools with the contents of this policy.

The use of powder actuated fastening tools shall be governed by the following rules:

- Tools must meet requirements of ANSI A10.3.

- Only employees qualified by instructions of the manufacturers qualified representative and/or licensed by the state and local authorities shall be assigned to use a powder actuated fastening tool.
- Users of powder actuated fastening tools must wear eye protection.
- Where practical, tools and fasteners of only one manufacturer shall be used on a project.
- Only cartridges and fasteners supplied by the manufacturer of the tool shall be used.
- Powder actuated fastening tools shall be handled with the same care as firearms.
- All safety devices incorporated in the tool by the manufacturer shall be used at all times. A sign, minimum 8" by 10" with 1" letters stating, "Powder Actuated Tool in Use" or equivalent shall be posted in area of use. (ANSI A10.3)
- Horseplay by any LeChase Construction or Subcontractor employee (i.e., pointing an armed tool at anything other than work, target practice, making safety devices inoperative, or other unsafe acts, etc.) is subject to immediate dismissal.
- Powder actuated fastening tools must be approved for use by LeChase Construction Services project management. Recommended types are:
  - Piston Tool – A low velocity type utilizing a piston activated by the power of a blank cartridge furnished by the tools manufacturer to drive a stud, pin, or fastener into a work surface.
  - Powder assisted hammer drive tool – A low velocity type utilizing a captive piston activated by a blow from a 4-lb. hammer supplemented by the power of a blank cartridge furnished by the tool manufacturer to drive a stud, pin, or fastener into a work surface.
- Any tool found not in proper working order, one that develops problems during use, shall be immediately removed from service and not used until properly repaired. Loaded tools shall not be left unattended.
- Do not use tools in areas that have potentially explosive or flammable atmospheres.

Power Transmission, Mechanical

Belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains or other reciprocating, rotating or moving parts of equipment must be guarded if such parts are exposed to contact by employees or otherwise constitute a hazard. No equipment may be used without guides in place.

Protection of the Public	Installation and maintenance of signs, signals, lights, fences, guard rails, ramps, temporary sidewalks, barricades and overhead protection as may be necessary to protect the public.
Qualified	One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems relating to the subject matter, the work, or the project.
Radiation, Ionizing	Pertinent provisions of the Atomic Energy Commission's Standards for Protection Against Radiation relating to protection against occupational radiation exposure, will apply. Persons using radioactive materials or X-rays will be specially trained or licensed, if required.
Railings	A standard railing will consist of top rail, intermediate rail, toe board and posts, and have a vertical height of 42 inches (plus or minus 3 inches) from upper surface of top rail to floor, platform, etc. The top rail of the railing will be smooth surfaces, with a strength to withstand at least 200 pounds. The intermediate rail will be approximately halfway between top rail and floor. A stair railing will be of a construction similar to a standard railing, but not less than 36 inches from upper surface of top rail to surface of tread in line with face of riser at forward edge tread.
Respiratory Protection	In emergencies or when feasible engineering or administrative controls are not effective in controlling toxic substances, approved respiratory protective equipment will be used. Respiratory protective devices will be approved for the hazardous material involved and extended nature of work requirements and conditions. Employees required to use respiratory protective devices will have a medical examination, be fit tested, and be thoroughly trained in the use of these devices. Respiratory protective equipment will be inspected regularly and maintained in good condition.
Rollover Protective Structures (ROPS)	The following types of materials handling equipment are required to have ROPS Protection: all rubber-tired, self-propelled scrapers, rubber-tired front-end loaders, rubber-tired dozers, wheel-type agricultural and industrial tractors,

crawler tractors, crawler-type loaders, and motor graders with or without attachments. The requirement does not apply to side-boom pipe laying tractors.

Safety Nets

Safety nets are required when work places are more than 25 feet above the surface and the use of ladders, scaffolds, catch platforms, temporary floors, safety lines or safety harnesses is impractical.

Saws

All portions of band saw blades will be enclosed or guarded, except for working portion of blades between bottom of guide rolls and table.

Portable, power-driven circular saws will be equipped with guards above and below the base plate or shoe.

The lower guard will cover the saw to depth of teeth, except for minimum arc required to allow proper retraction and contact with the work and will automatically return to covering position if blade is removed from the work. Radial saws will have an upper guard which completely encloses upper half of the saw blade. The sides of lower exposed portion of blade will be guarded by a device that will automatically adjust the thickness of and remain in contact with material being cut. Radial saws used for ripping must have non-kickback fingers or dogs. Radial saws will be installed so the cutting head will return to starting position when released by operator.

Al swing or sliding cut-off saws will be provided with a hood that will completely enclose upper half of saw.

Limit stops will be provided to prevent swing or sliding-type cut- off saws from extending beyond front or back edges of the cable.

Each swing or sliding cut-off saw will be provided with a hood that will cover the part of the saw that protrudes above top of the table or material being cut.

Inverted sliding cut-off saws will be provided with a hood that will cover that part of the saw that protrudes above top of table or material being cut.

Circular table saws will have a hood over portion of saw above the table, so mounted that the hood will

automatically adjust itself to thickness of and remain in contact with material being cut.

Circular table saws will have a spreader aligned with the blade, spaces no more than ½ inch behind largest blade mounted in saw. Circular table saws used for ripping will have non-kickback fingers or dogs. Feed rolls and blades of self-feed circular saws will be protected by a hood or guard to prevent hands of operator from coming in contact with in-running rolls at any time.

Scaffolds

Scaffolds will be capable of supporting 4 times maximum intended load and erected on sound, rigid footing, capable of carrying the maximum intended load without settling or displacement.

Guard rails and toe boards will be installed on all open sides and ends of platforms more than 6 feet above ground or floor, except needle beam scaffolds and floats which require the use of safety harnesses.

There will be a screen with maximum ½ inch openings between toe board and guard rail where persons are required to work or pass under scaffolds. Planking will be scaffold grade or equivalent as recognized by approved grading rules for species of wood used. Overlap scaffold planking in minimum of 12 inches or secure from movement. Scaffold planks will extend over end supports not less than 6 inches or more than 12 inches. Scaffolding and accessories with defective parts will be immediately replaced or repaired.

- MOBILE SCAFFOLDS. Platforms will be tightly planked for full width of scaffold except for necessary entrance opening. Platforms will be secured in place.

  Guard rails made of lumber, not less than 2 x 4 inches (or equivalent) approximately 42 inches high, with a midrail of 1 x 6 inches of lumber (or equivalent) and toe boards, will be installed at all open sides and ends on scaffolds more than 10 feet above ground or floor. Toe boards will be minimum 4 inches in height. Where persons are required to work or pass under scaffolds, install wire mesh between toe board and guardrail.

- SWINGING SCAFFOLDS. On suspension scaffolds Designed for a working load of 500 pounds, no more than two workers will be permitted to work at one time. On suspension scaffolds with a working load of 750 pounds, no more than three men may work at one time. Each employee will wear approved safety life belt attached to a lifeline. The lifeline will be securely attached to substantial numbers of the structure (no scaffold), or to securely rigged lines, which will safely suspend employee in case of a fall.

  Lifelines, safety harnesses and lanyards will be used only for employee safeguarding. Employees working over or near water, where danger of drowning exists will wear US Coast Guard approved life jackets or buoyant work vests.

- TUBULAR WELDED FRAME SCAFFOLDS. Scaffolds will be properly braced by cross bracing or diagonal braces, or both, for securing vertical members together laterally. Cross braces will be of such length as will automatically square and align vertical members or erected scaffold is plumb, square and rigid. All brace connections will be made secure.

Security and Vandalism

There is no perfect program because all job sites are different and have different requirements. The layout and security planning that goes into a job site is often the difference between no losses and expensive thefts. A job site without guards, fencing, adequate lighting or controlled exits makes an easy target for even the most inexperienced thief.

Prior to moving onto a site, you should meet with the local police, state highway patrol or county sheriff and the local emergency services. Give them details of your project, type of construction, work schedules, starting times and dates of completion. Give them names of key personnel, telephone numbers and where to reach them during non-working hours. Keep the authorities informed at all times, and have them do a crime prevention survey of your site and include them in all pre-job security planning.

Signs

Bulletin Board Requirements are as follows:

- Equal Employment Opportunity
- Occupational Safety & Health Poster (federal)

- Toxic Substance Poster (state), when applicable
- Emergency Telephone Numbers
- Crane Hand Signals (when cranes are used on project)
- Reporting of Injury Sign
- Minimum Wage Poster
- Federal Funds (federal poster required)
- Hazard Communication
- Worker's Compensation Poster/Certificate
- Family Medical Leave
- Notice (Company EEO Statement)

For the protection of all employees, warning signs such as the following will be posted:

- NO SMOKING
- KEEP OUT
- EYE PROTECTION REQUIRED
- OUT OF ORDER – DO NOT USE
- AUTHORIZED PERSONNEL

All employees will obey these directions and aid in maintaining the signs.

Stairs

Flights of stairs having four or more risers or rising more than 30 inches will be equipped with at least one handrail and one stair rail system along each unprotected side.

On all structures 20 feet or over in height, stairways, ladders or ramps will be provided. Rise height and tread width will be uniform throughout any flight of stairs. Job site trailer stairs have guard rails. Where doors or gates open directly on a stairway, a platform shall be provided and the swing of the door shall not reduce the effective width to less than 20 inches.

Storage

All materials stored in tiers will be secured to prevent sliding, falling or collapse. Aisles and passageways will be kept clear and in good repair. Stored materials will not obstruct exits. Materials will be stored with due regard to fire characteristics.

Toilets

EEO required separate women facilities. Toilets will be provided according to the following:

- 20 or more persons – one toilet and one urinal per 40 persons.
- 200 or more persons – one toilet seat and one urinal per 50 persons.

Wall Openings and Elevator Shaft Openings

Wall openings, from which there is a drop of more than 4 feet, and the bottom of opening is less than 39 inches above working surface, will be guarded. When the height and placement of the opening in relation to the working surface is such that a standard rail or intermediate rail will effectively reduce the chances of falling, one or both will be provided. The bottom of a wall opening, which is less than 4 inches above the working surface, will be protected by a standard toe board or an enclosing screen.

Welding, Cutting, and Heating

Proper precautions (isolating welding and cutting, removing fire hazards from the vicinity, providing a fire watch, etc.) for fire prevention will be taken in areas where welding or other “hot work” is being done. No welding, cutting or heating will be done where the application of flammable paints or presence of other flammable compounds or heavy dust concentrations creates a fire hazard. Equip torches with anti-flashback devices. Only qualified people should be used for welding, cutting and heating.

Arc welding and cutting operations will be shielded by non-combustible or flameproof shields to protect employees from direct arc rays.

When electrode holders are left unattended, electrodes will be removed and holder will be placed or protected so they cannot make electrical contact. All arc welding and cutting cables will be completely insulated. There will be no repair or splices within 10 feet of electrode holder, except where splices are insulated equal to the insulation of the cable.

Defective cable will be repaired or replaced.

Fuel gas and oxygen hose must be easily distinguishable and not interchangeable. Inspect hoses at beginning of each shift and repair or replace if defective. Torch and hose shall be removed from confined spaces when not in use.

General mechanical or local exhaust ventilation or airline respirators will be provided as required when welding, cutting or heating hazardous materials or in confined

	spaces. Always wear approved tinted eye protection when welding or in areas where welding is being done.
Wire Ropes, Chains, Ropes, Etc.	Wire ropes, chains, ropes and other rigging equipment will be inspected prior to use and as necessary during use to assure their safety. Remove defective rigging equipment from service immediately. Job or shop hooks and links, or makeshift fasteners formed from bolts, rods, etc., or other such attachments, will not be used. When U-bolts are used for eye splices, the U-bolt will be applied so the “U” section is in contact with dead end of rope. All rigging equipment is to be individually identified and inspected (documented), and the documentation must be turned in weekly to the Safety Department.
Woodworking Machinery	All fixed power-driven woodworking tools will be provided with a disconnect switch that can be either locked or tagged in “off” position.

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Section 8 - Personal Protection Equipment

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General Requirements

Personal Protection Equipment (PPE) will be issued to employees based upon the degree of exposure to the hazard. The hazard assessment and Site-Specific Safety Plan will identify hazards with the required PPE to protect against the hazards.

The following PPE will be provided by LeChase:

- Hard Hat or Safety Helmet
- Safety Glasses
- Hi-Viz Vest
- Task Specific Gloves
- Task specific PPE based on task (i.e., face shield, respirator, cut resistant sleeves).

Employees will be trained on the proper usage and limitation of the PPE. The PPE will be maintained in a clean, serviceable condition by the employee. Any unserviceable PPE will be replaced.

Head Protection

- Hard hats or safety helmets must be worn at all times.
- There will be no metal hard hats allowed.
- There will be no modification of the suspension of the hard hat.

Employee-Owned Equipment

Where employees provide their own protective equipment, LeChase Construction Services, LLC shall be responsible to assure its adequacy, including proper maintenance, and sanitation of such equipment.

Eye and Face Protection

- ANSI Z87 approved safety glasses shall be required at all times. Side shields must be worn with all eye wear that does not have them integrated into the design and such eyewear must be ANSI Z87 rated.
- When grinding or buffing, or otherwise performing any task that may produce fragment (chipping, jack hammering, etc.), or a splash of liquids, a face shield AND safety glasses will be required.
- When cutting or burning, burning goggles are required. Standard dark lenses, such as those in safety glasses DO NOT protect your eyes from harmful ultraviolet (UV) rays.
- When working inside a vessel or confined space, the use of mono-goggles shall be required when line breaking of pipe (flanges, valves, etc.) until such time that there is visual verification that the line is clear and no stored energy can be further released.

Hearing Protection

See LeChase Safety Manual - Section 10, Occupational Hearing Conservation program. Hearing Protection is a part of an employee's Personal Protection Equipment and is managed as part of the larger hearing conservation program.

Foot Protection

All LeChase employees, subcontractors and their employees, visitors, and vendors, are required to wear boots, minimum 6” in height, with leather uppers to protect the ankle. Boots must meet minimum ASTM F2892-24 requirements.

When required, safety toed boots must meet ASTM F2413-24 (formerly ANSI Z41).

Any personal medical conditions will be assessed on a case-by-case basis.

Sneakers, sandals, clogs, or other similarly inappropriate footwear is strictly prohibited.

Respiratory Protection

See LeChase Safety Manual - Section 30, Respiratory Protection program of this Manual. Respiratory Protection is a part of an employee’s Personal Protection Equipment and is managed as part of the larger respiratory protection program.

Hand Protection

All employees performing construction work must wear safety gloves 100% of the time to aid in the prevention of hand and finger injuries.

- Gloves shall have cut resistance level 4 protection in its entirety, meaning all parts of the glove must provide level 4 protection.
- Gloves must be worn at all times, except when working with rotating equipment.
- Gloves must be properly matched to the potential hazards of a particular task to avoid an increased risk of injury.
- When working with chemicals, consult the Safety Data Sheet (SDS) to see what type of hand protection is required.
- Jobsites will supply gloves to our employees. If a new pair of gloves is needed – the employee must return their current worn out pair. If an employee habitually loses or misplaces their gloves, the employee must purchase a new pair from the jobsite or an external supplier.

The list above identifies the required use of hand protection but is not meant to be all inclusive. Other situations not identified here shall be reviewed during the pre-task planning phase.

Gloves should be of the proper size that they do not cramp fingers and are not too large to create an entanglement hazard.

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Section 9 - Hazardous Communication Program

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Introduction

The LeChase Hazard Communication Program (HAZCOM) has been modified to align with the provisions of OSHA 1910.1200, Hazardous Communications standard, and the Global Harmonized System (GHS) of classification and labeling of chemicals. OSHA's Hazard Communication Standard (HCS) requires that all workers are trained to facilitate recognition and understanding of the new labels and Safety Data Sheets (SDS).

Major parts of the Hazard Communication Standard are the following:

- **Hazard Classification**: Provides specific criteria for classification of health and physical standards, as well as classifications of mixtures.
- **Labels**: Chemical manufacturers and importers are required to provide a label that includes a harmonized signal word, pictogram, and a hazard statement for each hazard class and category. Precautionary statements must also be provided.
- **Safety Data Sheets**: Safety Data Sheets (SDS) have a specified 16-section format.
- **Training**: HCS requires that workers are trained, upon initial assignment and whenever new chemicals are introduced; to facilitate the recognition and understanding of chemical hazards, measures employees can take to protect themselves, and the written Hazcom program.

Chemical Inventory

- LCS maintains an inventory of all known chemicals in use on the worksite. A chemical inventory list is available from the Project Supervision.
- Hazardous chemicals brought onto the worksite by LCS will be included on the hazardous chemical inventory list.

Container Labeling

- All chemicals on site will be stored in their original or approved containers with a proper label attached, except small quantities for immediate use. Any container not properly labeled shall be given to the Project Supervision for labeling or proper disposal.
- Workers may dispense chemicals from original containers only in small quantities intended for immediate use. Material may be kept in a temporary container (unlabeled) as long as the worker who placed the material in the container retains control over the container. Any chemical left after work is completed must be returned to the original container or Project Supervision for proper handling.
- No unmarked containers of any size are to be left in the work area unattended.
- LCS will rely on manufacturer applied labels whenever possible, and will ensure that these labels are maintained. Containers that are not labeled or on which the manufacturer's label has been removed will be relabeled.
- LCS will ensure that each container is labeled with the identity of the hazardous chemical container and any appropriate hazard warning.

Safety Data Sheets (SDS)

- Suppliers by law must provide SDS on all hazardous materials.
- Employees working with or exposed to hazardous materials may request a copy of the SDS. Requests for SDS' should be made to project supervision.
- SDS should be available and standard chemical reference may also be available on the site to provide immediate reference to chemical safety information.
- An emergency procedure to gain access to SDS' information will be established at each project site, if required.

Employee Training

Employees will be trained to work safely with hazardous materials. Employee training will include:

- Train employees on the new label elements and safety data sheet (SDS) format so they can identify and understand the HCS Pictograms and Hazards (signal word), Precautionary Statements, the Product Identifier, and Supplier Identification.
- Methods that may be used to detect a release of hazardous chemical(s) in the workplace.
- Protective measures to be taken.
- Safe work practices, emergency responses and proper use and care of personal protective equipment.
- Information on the Hazard Communication Standard including Labeling and Warning systems.
- Documented training is to be provided prior to working with any hazardous material and whenever a new chemcial hazard is introduced. All new employees will be provided with a copy of the Hazard Communication Program.

Personal Protective Equipment (PPE)

Required PPE is available from LCS. Any employee found in violation of PPE requirements may be subject to disciplinary actions up to and including discharge.

Emergency Response

- Any incident of over exposure or spill of a hazardous chemical/substance must be reported to LCS at once.
- Project Supervision will be responsible for ensuring that proper emergency response actions are taken in leak/spill situations, including actions to notify first responder (Note: Because of specific training needed LCS personnel shall not act as first responder unless site specific training has been provided).

Hazards of Non-Routine Tasks

- Supervisors will inform/train employees of any special tasks that may arise which would involve possible exposure to hazardous chemical and/or hazardous materials.
- Review of safe work procedures and use of required PPE will be conducted prior to the start of such tasks. Where necessary, areas will be posted to indicated the nature of the hazard involved.

- Whenever a new hazardous material is introduced on a jobsite all LCS employees who may be expose to that material will receive appropriate training.

Informing Subcontractors/Other Employees

- Other on-site employees are required to adhere to the provisions of the Hazard Communication Standard.
- Information on hazardous chemical and hazardous materials known to be present will be exchanged with other employers. Employers will be responsible for providing necessary information to their employees.
- Other on-site employers will be provided with a copy of the LCS Hazard Communication Program. Subcontractors will also provide LCS with a copy of their Hazard Communication Program.

Solvent, Flammable and Combustible Liquids

General

This procedure shall establish the requirements for storage, handling, and use of solvents and other flammable liquids. Solvents involve the following major hazard considerations:

- TOXICITY: Solvents as a group are toxic to varying degrees and in varying ways. Toxic effects may come through breathing of vapors, skin contact (dermatitis, allergy, etc.), skin absorption into system, and oral ingestion.
- FLAMMABILTY: Virtually all solvents are flammable. The degree of flammability varies with individual solvents. Vapors released by these solvents will be explosive if concentrated in sufficient volume in closed or restricted areas without adequate ventilation.

Precautionary Measures

- FLAMMABILITY
  - Provide adequate ventilation. Adequate ventilation is such that would prevent the accumulation of explosive vapors above 10% of the lower explosive limits of the solvent used.
  - Provide explosive meter sampling to assure adequacy of ventilation at beginning of use and as needed during use.
  - Control spark-producing devices.
  - Handle solvents in approved safety cans.
  - Ground against static electricity.
- TOXICITY – INHALATION PROTECTION
  - Provide adequate ventilation to maintain a concentration of vapors below the threshold limit value (TLV).
  - Where flammability is not of concern, breathing air equipment can afford protection against inhalation of toxic fumes.
- TOXICITY – SKIN CONTACT, SKIN ABSORPTION, ORAL INGESTION PROTECTION

- Long-sleeved shirts, rubber gloves, skin cream, and washing of hands and face before eating or smoking will generally afford adequate protection for solvents. Refer to appropriate SDS sheet for specific requirements.

Control of Flammable and Combustible Liquids (Under 200-Degree Flashpoint)

- BULK STORAGE
  - All tanks for bulk storage of flammables are to be installed in accordance with federal standards. Special attention is directed to the installation of proper flame arresters on both fill and vent piping.
  - Smoking is prohibited within a distance of 50 feet from an installation as described above or within 50 feet of pumps, fill, or vent piping.
  - Large containers (55-gallon drums) of lubricating oil, linseed oil, turpentine, paints, kerosene, and similar types of oils or solvents, must be stored outside of buildings.
- SMALL QUANITY HANDLING
  - An approved safety can must be used to transport, handle, or dispense small quantities of flammable and combustible liquids (gasoline, kerosene, turpentine, solvents, etc.).
  - Contents of all safety cans must be identified, using labels or stencil.
  - Lubricating, linseed, and motor oils need not be stored in safety cans. However, these oils should never be stored in open containers, such as pans or buckets, and the cans should be labeled or stenciled as to its content.

Re-Fueling Vehicles and Equipment

- All motor vehicles or equipment operating on the project which are powered by or operating in connection with an internal combustion engine using gasoline, diesel fuel, LP gas, or similar fuels, shall not be re-fueled with the engine running or operating.
- All ignition switches shall be in the “off” position during re-fueling operations.

Dispensing

Never dispense flammable liquids where any employees are smoking, or open flames are present.

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Section 10 – Hearing Protection Program

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Purpose

LeChase Construction Services LLC is committed to protecting employees from hazardous noise exposure that may cause hearing loss. This Hearing Protection Policy establishes requirements for noise control, hearing protection, and employee training to ensure compliance with OSHA 29 CFR 1926.52 and 1910.95.

Scope

This policy applies to all employees, subcontractors, and visitors working in environments where noise levels exceed 85 decibels (dB) over an 8-hour time-weighted average (TWA).

Noise Exposure Assessment

- LeChase will conduct noise level assessments using sound level meters or dosimeters in areas where employees may be exposed to hazardous noise.
- If noise levels exceed 85 dB(A) over an 8-hour time weighted average (TWA), a formal **Hearing Conservation Program (HCP)** will be implemented, including monitoring, training, and audiometric testing.
- Employees and supervisors can request noise level evaluations if they suspect hazardous noise exposure.

Engineering and Administrative Controls

Where feasible, engineering and administrative controls will be implemented to reduce noise exposure, including:

- Preventive maintenance of machinery to minimize noise emissions.
- Use of noise-dampening materials, barriers, and enclosures.
- Purchasing low-noise equipment and utilizing baffles, mufflers, or silencers.
- Scheduling work to limit prolonged exposure to high-noise environments.

Hearing Protection Requirements

- Employees must wear hearing protection in designated high-noise areas where noise levels exceed 85 dB(A).
- Hearing protection devices (HPDs) must meet **Noise Reduction Rating (NRR)** standards established by the EPA.
- Acceptable HPDs include:
    - **Disposable foam earplugs** (most effective in construction settings).
    - **Reusable earplugs** (rubber or silicone).
    - **Earmuffs** (more effective for low-frequency noise).
- The selection of HPDs will be based on noise intensity, frequency, and individual fit.

Training and Education

All affected employees will receive annual training on:

- The effects of excessive noise on hearing.
- Proper selection, use, and maintenance of HPDs.
- How to properly insert, store, and clean hearing protection.
- Understanding noise exposure levels and when protection is required.

Supervisor Responsibilities

- Ensure employees wear hearing protection when required.
- Monitor noise levels and report excessive noise concerns to the Safety Team.
- Enforce compliance with hearing protection requirements.

Employee Responsibilities

- Wear hearing protection as required.
- Maintain and store HPDs properly.
- Report noise hazards or issues with hearing protection to supervision.

Program Compliance and Enforcement

Failure to comply with this policy may result in disciplinary action, up to and including removal from the worksite. The Safety Team will conduct periodic audits to ensure adherence to the Hearing Protection Policy.

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Section 11 - Asbestos Policy

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Asbestos Policy

Asbestos is a widely used, mineral-based material that is resistant to heat and corrosive chemicals. Depending upon the chemical composition, fibers may range in texture from coarse to silky. The properties that make asbestos fibers so valuable to industry are its high-tensile strength, flexibility, heat and chemical resistance, and good frictional properties.

Asbestos fibers enter the body by inhalation of airborne particles or by ingestion and can become embedded in the tissues of the respiratory or digestive systems. Years of exposure to asbestos can cause numerous disabling or fatal diseases. Among these diseases are Asbestosis, an emphysema-like condition; lung cancer; Mesothelioma, a cancerous tumor that spreads rapidly in the cells of membranes covering the lungs and body organs; and, Gastrointestinal Cancer.

- Construction businesses use 50 percent of the US supply of Asbestos in Asbestos – cement pipes, sheets, siding shingles, floor tile, coating and sealants.

  In September 1988, OSHA issued a final Asbestos Standard for construction, CFR1926.1101

- Permissible exposure limit (PEL)
  - Time weighted average limit (TWA) of 0.1 f/cc averaged over an eight hour day.
  - Excursion limit of 1.0 f/cc averaged over a 30 minute sampling period.

  Initial monitoring must be done to determine the airborne concentrations of Asbestos to which workers may be exposed. If we can demonstrate that employee exposures are below that action level and/or excursion limit by means of objective data, or historical data, the initial monitoring is not required. If initial monitoring indicates that employee exposures are below that action level and/or excursion limit, then periodic monitoring is not required.

  Within regulated areas, the employer must conduct daily monitoring unless all workers are equipped with supplied-air respirators operated in the positive pressure mode. If daily monitoring within the regulated areas indicates by statistically reliable measurements that employee exposures are below the action level and/or excursion limit, then no further monitoring is required for those employees whose exposures are represented by such monitoring.

  Employees will be given the chance to observe monitoring and affected workers must be notifies as soon as possible following our receipt of the results.

- Superintendents must realize from the above statements that our employees and/or sub-contractors employees are at great risk when potentially exposed to Asbestos.

We must recognize the potential for such exposure and contract with an approved reliable Asbestos Abatement Contractor to abate the hazard prior to any exposure.

The complete Asbestos Standard and applicable information can be received from the Safety Director. CONTACT THE SAFETY DIRECTOR BEFORE YOU WORK!

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Section 12 - Crystalline Silica

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Introduction

The program outlines company and regulatory requirements for safe work execution in accordance with OSHA's Silica standard for construction. 29 CFR 1926.1153.

Purpose

This policy applies to all LeChase Construction and all affiliate companies, subcontractors, vendors, and visitors. LeChase Construction is committed to providing a safe and healthy workplace to our employees, recognizing the right of workers to work in a safe and healthy work environment and ensuring that LeChase Construction activities do not adversely affect the health and safety of any other persons.

This commitment includes ensuring every reasonable precaution is taken to protect our employees, and others from the adverse health effects associated with exposure to silica.

Responsibilities

Due to the risk posed by respirable silica, it is critical that all personnel involved in activities that could potentially create silica dust take specific actions to ensure that, as much as practicable, a hazard is not created. In recognition of this, the following (Silica related) responsibilities have been established and must be adhered to:

LeChase Construction Senior Management (PM, PX, SBU Lead) is responsible for:

- Regularly evaluating new equipment and technologies that become available, as able/appropriate, purchasing the "best available" equipment/technologies (within LeChase Construction's capabilities). Equipment/technologies with (silica) dust suppression and/or capture technologies will generally be given preference over equipment/technologies that lack such.
- Implementing a suitable respirable silica exposure monitoring program, or otherwise ensuring representative exposure monitoring results are available. The purpose of the program will ensure that (over time) LeChase Construction has quantifiable silica exposure data available for all regularly occurring, as well as reasonably foreseeable, work activities.
- Ensuring project and/or task specific Exposure Control Plans (ECPs) are developed communicated and effectively implemented as appropriate. When appropriate ECPs will be written and combined with the LeChase High Hazard Analysis (HHA) and Task Hazard Analysis (THA) on the project level.
- Ensuring that all employees (i.e. Managers, Supervisors and Workers) receive the necessary education and training related to this policy, as well as project/task specific ECPs.
- Maintaining applicable records (i.e. exposure sampling, inspections, respirator fit tests, training records, etc.) in accordance with LeChase Construction's record retention procedures/practices.
- Conduct a review of this Policy, as well as: (1) project/task specific ECPs/THAs (2) available exposure monitoring data, (3) Industry/Regulatory information, and (4) new/emerging equipment/technologies on a regular basis.

LeChase Construction Supervisors (i.e. Superintendents/Foreman) are responsible for:

- Obtaining a copy of the project/task specific ECPs/HHAs/THAs, and ensuring they are made available at each work site.
- Ensuring that all the tools, equipment, PPE, and materials (including water) necessary to implement the ECP are available (and in good working order) prior to allowing work activities to commence.
- Ensuring that all workers (under the supervisor's direction and control) have received the necessary training. As appropriate, each supervisor must ensure that workers are available to "demonstrate competency" for identified tasks.
- Ensuring that workers adhere to the project/task specific ECP/HHA/THA, including PPE and personal hygiene requirements (i.e. including being clean shaven where the respirator seals to the user's face).
- Coordinating work activities with the Owner and/or Subcontractors as required, and/or otherwise implementing the controls necessary to protect others (i.e. erecting of barricades and signage) who could be adversely effected by LeChase Construction's acts (or omissions).

LeChase Employees (and subcontractor employees) are responsible for:

- Knowing the hazards of silica dust exposure.
- Using assigned protective equipment in an effective and safe manner.
- Working in accordance with the project/task specific ECP/HHA/THA.
- Immediately reporting to their supervisor, any hazards (i.e. unsafe conditions, unsafe acts, improperly operating equipment, etc.).

Exposure Limits

Action level. (Point in which employers must continue monitoring) concentration of airborne respirable crystalline silica of 25 µg/m3, calculated as an 8-hour TWA.

Permissible exposure limit (PEL). The employer shall ensure that no employee is exposed to an airborne concentration of respirable crystalline silica in excess of 50 µg/m3, calculated as an 8-hour TWA.

Risk Identification

Silica is contained on many of the products used/encountered on LeChase Construction's Projects, and silica dust can be readily released through the various tasks performed by LeChase Construction.

The health hazards of silica come from breathing in the dust. In addition to identifying the specific activities/areas where personnel could be exposed to silica dust, the "amount" of exposure and "duration" of exposure must also be considered. With consideration to these three factors, activities performed by LeChase Construction (or that are otherwise occurring in proximity to LeChase Construction's activities) that expose our employees (as well as members of the public and other workers) to the dust include, but are not necessarily limited to:

- Surface preparation activities such as: (1) the use of Leaf blowers, (2) the use of Bobcats with "sweeper" attachments, (3) the use of Sweeper trucks and (4) hand sweeping.
- Jack-hammering (of both asphalt and concrete).
- Saw-cutting (of both asphalt and concrete).
- Drilling (of concrete).

- Granular Surface Preparation activities (i.e. grading and rolling).
- Operation and use of milling equipment/machinery (i.e. milling and conveyance/discharge of milled materials on conveyor).
- Fibrous cement board.
- Drywall removal, cutting, sanding and sweeping.
- Cleaning and maintenance of tools and equipment by the LeChase warehouse staff.

Risk Assessment

LeChase Construction, its affiliates and subcontractors will use a variety of methods to assist with the "assessment" of (possible and actual) silica exposures. These methods will include, but may not necessarily be limited to:

- Reviewing data/reports available in the public domain (i.e. Information available through regulatory agencies such as OSHA) and industry associations (i.e. ACI-American Concrete Institute)
- Regularly benchmarking with firms who perform similar work (i.e. through ACIG-American Contractors Insurance Group).
- Implementing a suitable respirable silica exposure monitoring program. This program will ensure that (over time) quantifiable silica exposure data is available and representative on regularly occurring, as well as reasonably foreseeable work activities. Exposure monitoring will be conducted "in-house" and through outside consultants/hygienists (i.e. actual monitoring and/or interpretation of results).

Risk Control

When determining measures to reduce or eliminate worker exposure to silica dust, LeChase Construction/subcontractors will generally select a combination of controls, listed in order of preference:

- Elimination and Substitution.
- Engineering.
- Administrative.
- Personnel Protection Equipment (PPE).

Substitution and Elimination: Whenever possible, LeChase Construction/subcontractors will substitute products containing silica with products that do not contain (or contain a lower percentage of) crystalline silica. While there have historically been few "substitution" options available, LeChase Construction recognizes the importance of planning work in order to minimize the amount of silica dust generated. During the planning phases of a project, LeChase Construction will advocate for the use of methods that reduce the need for cutting, grinding, or drilling of concrete surfaces.

Engineering Controls: Engineering controls are those controls which aim to control or otherwise minimize the release of crystalline silica. Two "common" engineering control options are available to LeChase Construction/subcontractors in many circumstances. These include the Local Exhaust Ventilation (LEV) and Wet Dust Suppression (WDS) systems.

LEV Systems: Tools/appliance specific LEV systems are available on some tools/appliances. Such LEV systems are generally comprised of a shroud assembly, a hose attachment, and a vacuum system. Dust-laden air is collected within the shroud, drawn into the hose attachment, and conveyed to

the vacuum, where it is filtered and discharged. “Large scale” LEV systems, such those available on some Vacuum Trucks and Mobile Sweepers, may also be employed (at times) on LeChase projects.

When/if LEV systems are used, LeChase Construction/subcontractors will employ the following systems and safe work practices:

- Vacuum attachment systems that capture and control dust at its source whenever possible.
- Dust control systems will be maintained in optimal working condition.
- Grinding wheels will be operated at the manufacturer’s recommended RPM (operating in excess of this can generate significantly higher airborne dust levels).
- HEPA or good quality, multi-stage vacuum units (approved for use with silica dust) will be used in accordance with the manufacturer’s instructions.
- Whenever possible, concrete grinding will be completed when the concrete is wet (thus dust release will be significantly reduced).

WDS Systems: Unlike LEV systems, many tools/appliances are equipped with WDS systems (i.e. attachments on various hand held/portable, abrasive/cutting equipment). WDS Systems will be used in all applications, unless otherwise specified by Table 1.

When WDS systems are used, the employer will employ the following systems and safe work practices:

- If water is not readily available on the specific project, the project supervisor will arrange to have a water tank delivered to the site for use.
- Pneumatic or fuel (i.e. gasoline) powered equipment will generally be used instead of electrically powered equipment if water is the method of dust control, unless the electrical equipment is specifically designed to be used in such circumstances.
- Pressure and flow rate will be controlled in accordance with the tool manufacturer’s specifications.
- When sawing concrete, tools that provide water directly to the blade will be used if possible.
- Wet slurry will be cleaned from work surfaces while the slurry is still in its wet stage. No dry slurry will be removed without wetting.

Administrative Controls: Administrative controls are those that aim to control or otherwise minimize the release of silica through the use of work procedure and work methods, rather than by affecting the actual physical work. Common examples of administrative controls include, but are not limited to:

- Posting of warning signs.
- Rescheduling of work as to avoid the activities of others.
- Relocating/reassigning unprotected workers away from dusty areas.

When administrative controls are used, the employer will employ the following systems and safe work practices:

- In conjunction with the Owner/ Subcontractors, suitable exposure control strategies (both within and outside LeChase Construction‘s capabilities/responsibilities) will be discussed and determined. As necessary/appropriate, supplemental (to this policy/procedure) project and task specific ECP/HHA/THAs will be developed.
- Suitable housekeeping, restricted work area, hygiene practices, training and supervision procedures/standards will be determined and implemented on LeChase Construction projects.
- As appropriate, barriers will be erected around known silica dust generating activities, and/or warning signs will be posted.

- As able, work activities will be scheduled to minimize the silica related effect on, and from, others.

Personal Protective Equipment Controls: When used in conjunction with the other (i.e. Engineering and Administrative) controls elsewhere identified, personal protective equipment and clothing can help further reduce exposure to silica dust.

OSHA 1926.1153(c)(1) Table 1 will be used to select the appropriate respirator by associating the task with the assigned protection factor.

In addition to respiratory PPE, protective clothing (i.e. disposable/washable coveralls) may be used and/or required to help prevent the contamination of the worker's personnel clothing.

Respirator use to include "dust mask" will follow LeChase's Respiratory Protection Program. (Reference Section 30 of the LeChase Safety Manual)

Training

Prior to performing activities, or working on project sites where personnel could be exposed to silica dust, LeChase Construction and its subcontractors will ensure that personnel receive suitable training. As necessary, personnel will be trained to a level of demonstrated competency. While not necessarily an exhaustive list, training may include:

- The hazards and risks associated with exposure to silica dust.
- The signs and symptoms of silica related diseases.
- General and specific silica exposure reduction methods/strategies (i.e. as detailed in the general/specific exposure control plans).
- The use of specific pieces of equipment and control systems (i.e. LEV and WDS systems).
- The use and care of respiratory (and other) personal protective equipment.
- How to seek first aid (i.e. for respiratory related concerns, including those that may be caused/associated with silica dust exposure).
- How to report items of the concern (i.e. those related to silica dust).

The education and training detailed will be delivered to LeChase Construction employees through a variety of forums, including but not necessarily limited to:

- New Employee Orientations.
- Project/Site Orientations.
- Equipment/task specific training (in accordance with LeChase Construction's Policy, all personnel must be trained to a level of demonstrated competency prior to using required tools, equipment and appliances).
- Weekly "tool box talks."
- Sunrise Huddles.
- Notifications and Bulletins (i.e., Safety Flash).

Employee Monitoring Program

This program will ensure that (over time) LeChase Construction has quantifiable silica exposure data available that is representative of all regularly occurring, as well as reasonably foreseeable work

activities. Exposure monitoring will generally be conducted "in house", although assistance (i.e., actual monitoring and/or interpretation of results) may be obtained through outside consultants/hygienists. RSMs will gather results and add to *last column of Appendix A*.

For tasks not listed in Appendix A, or where the employer cannot not fully and properly implement the engineering controls, work practices, and respiratory protection described in Appendix A, the employer shall ensure that no employee is exposed to an airborne concentration of respirable crystalline silica in excess of 50 µg/m3, calculated as an 8-hour TWA.

Medical Surveillance

LeChase and its subcontractors will make medical surveillance available at no cost to the employee, and at a reasonable time and place, for each employee who will be required to use a respirator for 30 or more days per year under OSHA 1926.1153

Medical surveillance will comply with Section 30 of the LeChase Jobsite Safety Manual.

Appendix A: OSHA CFR 1926.1153(c)(1) TABLE 1- Common Operations and Controls

Equipment/task	Engineering and work practice control methods	Required respiratory protection and minimum assigned protection factor (APF)		Air monitoring results
		≤ 4 hours/shift	>4 hours/shift	
(i) Stationary masonry saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions	None	None	
(ii) Handheld power saws (any blade diameter)	Use saw equipped with integrated water delivery system that continuously feeds water to the blade Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions:			
	• When used outdoors	None	APF 10	
	• When used indoors or in an enclosed area	APF 10	APF 10	

(iii) Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less)	For tasks performed outdoors only: • Use saw equipped with commercially available dust collection system • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions • Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency	None	None	
(iv) Walk-behind saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions:			
	• When used outdoors	None	None	
	• When used indoors or in an enclosed area	APF 10	APF 10	
(v) Drivable saws	For tasks performed outdoors only:			
	• Use saw equipped with integrated water delivery system that continuously feeds water to the blade • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions	None	None	

(vi) Rig-mounted core saws or drills	Use tool equipped with integrated water delivery system that supplies water to cutting surface Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions	None	None	
(vii) Handheld and stand-mounted drills (including impact and rotary hammer drills)	Use drill equipped with commercially available shroud or cowling with dust collection system Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism Use a HEPA-filtered vacuum when cleaning holes	None	None	
(viii) Dowel drilling rigs for concrete	For tasks performed outdoors only:			
	• Use shroud around drill bit with a dust collection system. Dust collector must have a filter with 99% or greater efficiency and a filter cleaning mechanism • Use a HEPA-filtered vacuum when cleaning holes	APF 10	APF 10	

(ix) Vehicle-mounted drilling rigs for rock and concrete	• Use dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector	None	None	
	OR			
	Operate from within an enclosed cab and use water for dust suppression on drill bit	None	None	
(x) Jackhammers and handheld powered chipping tools	Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact:			
	• When used outdoors	None	APF 10	
	• When used indoors or in an enclosed area	APF 10	APF 10	
	OR			
	Use tool equipped with commercially available shroud and dust collection system			
	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions			
	Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism:			
	• When used outdoors	None	APF 10	
	• When used indoors or in an enclosed area	APF 10	APF 10	
(xi) Handheld grinders for mortar removal (*i.e.*, tuckpointing)	Use grinder equipped with commercially available shroud and dust collection system	APF 10	APF 25	

	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions			
	Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism			
(xii) Heavy equipment and utility vehicles for tasks such as grading and excavating but not including: Demolishing, abrading, or fracturing silica-containing materials	Apply water and/or dust suppressants as necessary to minimize dust emissions	None	None	
	OR			
	When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab	None	None	

(xiii) Handheld grinders for uses other than mortar removal	For tasks performed outdoors only: Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface	None	None	
	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions			
	OR			
	Use grinder equipped with commercially available shroud and dust collection system			
	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions			
	Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism:			
	• When used outdoors	None	None	
	• When used indoors or in an enclosed area	None	APF 10	
(xiv) Walk-behind milling machines and floor grinders	Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface	None	None	

	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions			
	OR			
	Use machine equipped with dust collection system recommended by the manufacturer	None	None	
	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions			
	Dust collector must provide the air flow recommended by the manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism			
	When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes			
(xv) Small drivable milling machines (less than half-lane)	Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant	None	None	
	Operate and maintain machine to minimize dust emissions			
(xvi) Large drivable milling machines (half-lane and larger)	For cuts of any depth on asphalt only: Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust	None	None	
	Operate and maintain machine to minimize dust emissions			

	For cuts of four inches in depth or less on any substrate:			
	Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust	None	None	
	Operate and maintain machine to minimize dust emissions			
	OR			
	Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant	None	None	
	Operate and maintain machine to minimize dust emissions			
(xvii) Crushing machines	Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (e.g., hoppers, conveyers, sieves/sizing or vibrating components, and discharge points)	None	None	
	Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions			
	Use a ventilated booth that provides fresh, climate-controlled			

	air to the operator, or a remote control station			
(xviii) Heavy equipment and utility vehicles used to abrade or fracture silica-containing materials (e.g., hoe-ramming, rock ripping) or used during demolition activities involving silica-containing materials	Operate equipment from within an enclosed cab	None	None	
	When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions	None	None	

LeChase Construction Services, LLC
Jobsite Safety Manual

Section 13 - Confined Spaces

Table of Contents

Scope
This policy applies to all LeChase Construction, QSI, Platinum-LeChase and Conifer- LeChase employees, as well as affiliate companies, subcontractors, vendors, and visitors.

Purpose
The purpose of this program is to ensure the safety of all employees while working in or in close proximity to designated Confined Spaces, including Permit Required Confined Spaces.

Definitions
Acceptable entry conditions: The conditions that must exist in a confined space to allow entry and to ensure that employees involved with a confined space entry can safely enter into and work within the space.

Attendant: An individual stationed outside one or more Confined spaces who monitors the authorized Entrants and who performs all Attendant's duties assigned in the LeChase Construction Confined Spaces Program. Attendants must have sufficiently completed and fully understand the Confined Space training and must be approved by the EH&S Manager to work in a confined space as an Attendant in accordance with 1926.1209

Authorized Entrant: An individual who is authorized by the entry supervisor, to enter a confined space. Entrants must have sufficiently completed and fully understand the Confined Space training and must be approved by the Superintendent/EH&S Manager to work in a confined space as an Authorized Entrant.

Barrier: Means a physical obstruction that blocks or limits access.

Blanking or Blinding: The absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

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

Confined Space:

- A space that is large enough and so configured that an employee can bodily enter and perform assigned work;
- Has limited or restricted means for entry or exit (for example, tanks, vessels, coolers, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and
- Is not designed for continuous occupancy.

  Note: Examples of locations where confined spaces may occur include, but are not limited to, the following: Bins; boilers; pits (such as elevator, escalator, pump, valve or other equipment); manholes (such as sewer, storm drain, electrical, communication, or other utility); tanks (such as fuel, chemical, water, or other liquid, solid or gas); incinerators; scrubbers; concrete pier columns;

sewers; transformer vaults; heating, ventilation, and air-conditioning (HVAC) ducts; storm drains; water mains; precast concrete and other pre-formed manhole units; drilled shafts; enclosed beams; vessels; digesters; lift stations; cesspools; silos; air receivers; sludge gates; air preheaters; step up transformers; turbines; chillers; bag houses; and/or mixers/reactors.

Control: Means the action taken to reduce the level of any hazard inside a confined space using engineering methods (for example, by ventilation), and then using these methods to maintain the reduced hazard level. Control also refers to the engineering methods used for this purpose. Personal protective equipment is not a control.

Controlling Contractor: Is the employer that has the overall responsibility for construction at the work site.

Double Block and Bleed: The closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

Early-warning systems: Means the methods used to alert authorized entrants and attendants that an engulfment hazard may be developing. Examples of early–warning systems include, but are not limited to: alarms activated by remote sensors; and look outs with equipment for immediately communicating with the authorized entrants and attendants.

Emergency: Any occurrence (including any failure of hazard control or monitoring equipment) or an event internal or external to the confined space that could endanger Entrants.

Engulfment: The surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

Entry: The action by which a person passes through an opening into a confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the Entrant's body breaks the plane of an opening into the space.

Entry Employer: Means any employer who decided that an employee it directs will enter a permit space.

Note: An employer cannot avoid the duties of the standard merely by refusing to decide whether its employees will enter a space, and OSHA will consider the failure to so decide to be an implicit decision to allow employees to enter those spaces if they are working in the proximity of the space.

Entry Permit: Means the written or printed document that is provided by LeChase Construction to allow and control entry into a confined space that contains the information specified in this program.

Entry Rescue: Occurs when a rescue service enters a permit space to rescue one or more employees.

Entry Supervisor: Means the qualified person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is

planned, for authorizing entry and overseeing entry operations, and for termination entry as required by this standard.

- Entry Supervisors must have sufficiently completed and fully understand the Confined Space training and must be approved by the EH&S Manager to work in a confined space.
- An Entry Supervisor also may serve as an Attendant or as an authorized Entrant, as long as that person is trained and equipped as required by this section for each role he or she fills. Also, the duties of Entry Supervisor may be passed from one individual to another during the course of an entry operation.
- The Entry Supervisor is responsible to test and monitor the atmosphere conditions.

Hazard: Means a physical hazard or hazardous atmosphere. See definitions below.

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

- Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL), (0% is normal).
- Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent, (20.9 % is normal).
- Any other atmospheric condition that is immediately dangerous to life or health. (Ex.-H2S 10%, 0% is normal).
- Airborne combustible dust at a concentration that meets or exceeds its LFL.
  Note: This concentration may be approximated as a condition in which the combustible dust obscures vision at a distance of 5 feet (1.52 meters) or less.
  Note: For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Safety Data Sheets that comply with the Hazard Communication Standard 1926.59 of this part, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.
- Atmospheric concentrations of any substance for which a dose or a permissible exposure limit is published in Subpart D- Occupational Health and Environmental Control, or in Subpart Z- Toxic and Hazardous Substance, of this part and which could result in employee exposure in excess of its doses or permissible exposure limit. Note: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, and impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this definition.

Host Employer: Means the employer that owns or manages the property where the construction work is taking pace. Note: If the owner of the property on which the construction activity occurs has contracted with an entity for general management of that property, and has transferred to that entity the information specified in 1926.1203(h)(1), OSHA will treat that contracted management entity as the host employer. In no case will there be more than one host employer.

Hot Work: Means operations capable of providing a source of ignition (for example, riveting, welding, cutting, burning and heating).

Hot Work Permit: The written authorization to perform operations (for example, riveting, welding, cutting, burning, and heating) capable of providing a source of ignition.

Immediately Dangerous to Life or Health (IDLH): Means any condition that would interfere with an individual's ability to escape unaided from a permit space and that poses a threat to life or that would cause irreversible adverse health effects.

> **Note**: Some materials -- hydrogen sulfide gas and cadmium vapor, for example -- may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12-72 hours after exposure. The victim "feels normal" from recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately dangerous to life or health."

Inerting: The displacement of the atmosphere in a permit space by a non-combustible gas (such as nitrogen) to such an extent that the resulting atmosphere is non-combustible. This procedure produces an IDLH oxygen deficient atmosphere. Note, this procedure produces an IDLH oxygen-deficient atmosphere.

Isolation: The process by which a confined space is removed from service and completely protected against the release of energy and material into the space by such means as: blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tag-out of all sources of energy; or blocking or disconnecting all mechanical linkages.

Limited or restricted means for entry or exit: Means a condition that has a potential to impede an employee's movement into or out of a confined space. Such conditions include, but are not limited to, trip hazards, poor illumination, slippery floors, inclining surfaces and ladders.

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

Lockout: Means the placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lower flammable limit or lower explosive limit: Means the minimum concentration of a substance in air needed for an ignition source to cause a flame or explosion.

Monitor or monitoring: Means the process used to identify and evaluate the hazards prior to and after authorized entrants enters the space. This is a process of checking for changes that is performed in a periodic or continuous manner after the completion of the initial testing or evaluation of that space.

Non-entry rescue: Occurs when a rescue service, usually the attendant, retrieves employees in a permit space without entering the permit space.

Non-Permit Confined Space: Means a confined space that meets the definition of a confined space but does not meet the requirements for a permit-required space, as defined in this subpart.

Oxygen Deficient Atmosphere: An atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen Enriched Atmosphere: An atmosphere containing more than 23.5 percent oxygen by volume.

Permit-Required Confined Space: A confined space that has one or more of the following characteristics:

- Contains or has a potential to contain a hazardous atmosphere.
- Contains a material that has the potential for engulfing an Entrant.
- Has an internal configuration such that an Entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized serious safety or health hazard.

  Note: All confined spaces shall be considered permit-required until otherwise classified as non-permit required by proper documentation and approvals.

Permit-Required Confined Space Program: (permit space program) Means the employer's overall program for controlling, and, where appropriate, for protecting employees from permit space hazards and for regulating employee entry into the spaces.

Physical hazard: Means an existing or potential hazard that can cause death or serious physical damage. Examples include, but are not limited to: explosives (as defined by paragraph (n) of 1926.914, definition of "explosive"); mechanical, electrical, hydraulic and pneumatic energy; radiation; temperature extremes; engulfment; noise; and inwardly converging surfaces. Physical hazard also includes chemicals that can cause death or serious physical damage through skin or eye contact (rather than through inhalation).

Prohibited Condition: Means any condition in a permit space that is not allowed by the permit during the period when entry is authorized. A hazardous atmosphere is a prohibited condition unless the employer can demonstrate that personal protective equipment (PPE) will provide effective protection for each employee in the permit space and provides the appropriate PPE to each employee.

Qualified person: means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.

Representative permit space: means a mock-up of a confined space that has entrance openings that are similar to, and is of similar size, configuration, and accessibility to, the permit space that authorized entrants enter.

Rescue: means retrieving, and providing medical assistance to, one or more employees who are in a permit space.

Rescue Service: The personnel designated to rescue employees from Permit Spaces.

Retrieval System: The equipment (including a retrieval line, chest or full-body harness, wristlets or anklets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.

Serious physical damage: means an impairment or illness in which a body part is made functionally useless or is substantially reduced in efficiency. Such impairment or illness may be permanent or temporary and includes, but is not limited to, loss of consciousness, disorientation, or other immediate

and substantial reduction in mental efficiency. Injuries involving such impairment would usually require treatment by a physician or other licensed health-care professional.

Tag-out: means:

- Placement of a tag-out device on a circuit or equipment that has been de-energized, in accordance with an established procedure, to indicate that the circuit or equipment being controlled may not be operated until the tag-out device is removed; and
- The employer ensures that:
  - tag-out provides equivalent protection to lockout, or
  - that lockout is infeasible and the employer has relieved, disconnected, restrained and otherwise rendered safe stored (residual) energy.

Test or Testing: The process by which the hazards that may confront Entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

Note. Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to, and during, entry.

Ventilate or ventilation: means controlling a hazardous atmosphere using continuous forced-air mechanical systems that meet the requirements of 1926.57 – Ventilation.

Responsibilities

Overall Program Responsibilities

The LeChase Site Management/Superintendent is responsible for the overall implementation and maintenance of any written program or any certification concerning the requirements of the Permit-Required Confined Space Standard at LeChase.

The LeChase Regional Safety Manager (RSM) will be notified prior to entry.

Permit Required Confined Space Evaluation

The Superintendent is responsible for evaluating the workplace to determine if any permit spaces are present or identified.

The Entry Supervisor will be responsible for determining if a Permit-Required Confined Space (PRCS) program is required, or if the permit space can be reclassified as a non- permit space, or if alternative procedures can be used.

Training

The Entry Supervisor is responsible for ensuring that all affected personnel are properly trained and that refresher training is given at any time there is a change in the procedures or an addition of a procedure an employee has not yet been trained on or not enough knowledge on the procedure is demonstrated by the employee. Personnel who may be included are any authorized entrants,

attendants, entry supervisors, on-site rescue team members, and employees who may potentially enter the space.

All training documentation will be provided to the LeChase RSM for verification.

Initial Contracting for Rescue Services

The Entry Supervisor will ensure that rescue and emergency services have been informed of any permit-required confined spaces at the location of the confined space and have been given access to the spaces for drills, training, etc.

Host Employer's Responsibilities with Contractors:

When contractors are involved in permit space entry work at the host facility, the LeChase Superintendent/Owner Representative will inform them of the following information and coordinate any entry operations:

- The location of the permit spaces at the facility and those entries into these spaces are only allowed through a permit space program or alternative procedures or space reclassification.
- Rationale for listing the space as a permit space which has any identified hazards and any experiences with the particular space.
- Precautions that we have implemented to protect employees working in or near the space.
- The LeChase Superintendent/Owner Representative will debrief the contractor at the completion of entry operation, or during if a need arises, and if any hazards were confronted or created during their work.

Contractor's Responsibilities with Host Employers:

When a contracting company, including LeChase/QSI and subcontractors, is hired to perform work in a PRCS, the company's representative will obtain the following information from the host employer and ensure the following tasks are performed:

- Obtain any information on the hazards of the permit space and information from previous entry operations from the host employer.
- Determine if the host employer's workers will be working in or near the space.
- If the host employer will have employers working in or near the space while confined space work is being performed, the contractor's representative will coordinate entry operations with the host employee's representative.
- Will inform the host employer of the permit space program that will be utilized.
- Hold a debriefing conference at the completion of the entry operation or during the entry operation (if needed) to inform the host employer of any hazards confronted or created.

Before any entry operations can begin, each entry employer must obtain all information on permit space hazards and entry operations from the Controlling Contractor. The entry employer should also inform the Controlling Contractor of what confined space program they will be following when entering the space. This should include any hazards that exist or could be created in the space to be entered.

Equipment

The Entry Supervisor will ensure that all equipment needed for safe entry into any permit spaces and non-permit spaces is made available and in proper working order.

Exceptions

This standard does not apply to Construction Work regulated by:

- 1926 subpart P – Excavations
- 1926 subpart S – Underground Construction, Caissons, Cofferdams and Compressed Air
- 1926 subpart Y – Diving

General Overview

All confined spaces must be identified and evaluated on site by either the host employer or controlling contractor before work can begin. A competent person must classify each inventoried space as permit required or non-permit required after proper testing and consideration. Any confined spaces creating during construction at the worksite should be identified by the controlling contractor. When coming on site, the Controlling Contractor will inspect to ensure all confined spaces have been properly identified.

If one or more permit space is identified, the Controlling Contractor will notify all exposed employees of the existence, location, and hazards of each permit space. To properly notify employees, the Controlling Contractor must:

- Post Danger, Confined Space – Do Not Enter signs at each space; and
- Use an additional form of notification, such as a verbal warning or instruction.

Proper engineering controls will be used to eliminate or isolate the physical hazards posed by the permit space to where the only remaining hazard is an actual or potential hazardous atmosphere. Forced air ventilation will be used, along with continuous air monitoring and inspections, to ensure that any hazardous atmosphere remains eliminated. Any employees that must enter the space are entitled to be present during permit space testing.

Entry Contractors will provide proper training to employees at all worksites so that they are aware of the various hazards and precautions to be taken when entering a confined space. Training will also be provided to assure that all air monitoring equipment and personal protective equipment is used correctly and at all necessary times. Employees will actively participate in implementation of the confined space program at each jobsite and will be provided all information required to be in this standard.

Inventory of all Permit Required Confined Spaces

The host employer, controlling contractor, or subcontractor/Entry Contractor will take inventory of all, if any, Permit Required and Non-Permit Confined Spaces found at all worksites. The name or position of the individual who inventoried and evaluated each space will be listed and kept on file, along with the location and hazard that qualifies it as a permit space for each identified space.

For all non-permit spaces, if there is a change in use or configuration, or if there is reason to believe the original evaluation of the space was inadequate, a competent person will reevaluate the space and if necessary, reclassify it as a PRCS.

Prevention of Unauthorized Entry

If a permit space is indicated at any site on the project, it is the responsibility of the Controlling Contractor to notify all exposed or potentially exposed employees of their existence and associated hazards. The host employer, controlling contractor, or subcontractor will ensure the posting of danger and warning signs reading “Danger - Permit-Required Confined Space – Do Not Enter” and another form of notification, other than posting, of these spaces to employees.

The Controlling Contractor will determine whether the spaces will be entered or not. If a permit space will not be entered by employees, a list of effective measures to ensure no entry will be outlined and enforced.

Permit Process

Before any entry operations, the Entry Contractor will document the completion of an entry permit. All entry permits will be verified by LeChase Supervision. The designated entry supervisor will sign the permit authorizing entry into the space. The document should be made available to all authorized entrants or their authorized representatives and should be posted at the site of entry or in a designated place that can assure that pre-entry preparations have been completed.

The entry supervisor will terminate entry when:

- Operations covered by the entry permit have been completed and the entry permit has been canceled.
- An issue or temporary condition in violation of the permit arises resulting in a reevaluation of the permit space and a suspended or cancelled permit.
- An issue or temporary condition arises that is not covered under the permit resulting in a cancelled permit.

Controlling and Entry Contractors will keep each cancelled entry permit on file for one year after their cancellation date. Each permit will contain the reasoning for why the permit was cancelled in order to help fix the condition in the future.

Each entry permit on the project will contain the following sections:

- Space to be entered
- Purpose of the entry
- Date and authorized duration of the permit
- Authorized entrants that will be working in the space
- Means of detecting any change in atmospheric hazard levels
- Name of attendant(s)

- Individuals printed name serving as Entry Supervisor, along with signature of each entry supervisor that authorizes entry.
- The hazards of the space to be entered.
- Measures taken to isolate the space and to eliminate or control permit space hazards before entry.
- Acceptable entry conditions
- Monitoring and test results performed in compliance under 1926.1204(e) of the confined space standard. This should be accompanied with the names and signatures of the testers and by an indication of when the tests were performed.
- Rescue and emergency services that can be summoned and the means by which to do so (i.e. equipment to use or phone numbers to call).
- Communication procedures used by the authorized entrants and attendants to maintain contact during the entry
- List of equipment to be provided, such as personal protective equipment, testing equipment, communications equipment, alarm systems, and rescue equipment
- Any other information needed or necessary, given the circumstances of the particular confined space, to ensure employee safety
- Any additional permits needed for the authorization of entry, such as hot work permits

Declassifying a Permit Required Confined Space

Permit-Required Confined Spaces can be reclassified as non-permit spaces by the total elimination of hazards. A permit space can be reclassified as a non-permit space if there are no actual or potential atmospheric hazards and if all the other hazards within the space are eliminated without entry into the space.

Personnel, Duties, and Training for Full Permit Required Confined Space Entry Operations

Entry Contractors will provide proper and sufficient training to each employee, at no cost to them, working with or in confined spaces on the jobsite. Training will be provided before the employee starts his or her duties in the permit space or before there is a change in assigned duties, in a language and vocabulary that they can understand. At any time, there is a change in the procedures or an addition of a procedure an employee has not yet been trained on or not enough knowledge on the procedure is demonstrated by the employee, those affected employees shall be retrained.

The training program will include the duties of each team member as listed below:

Authorized Entrants

- Know the hazards associated with the permit space and their effects.
- Properly use the equipment required for entry.
- Maintain a continuous means of communication with the attendant.
- Alert the attendant in the event of an emergency.
- Evacuate the space if an emergency occurs.

Attendants

- Know the hazards associated with the permit space and their effects.
- Maintain an accurate account of the authorized entrants.
- Remain at assigned station until relieved by another attendant or until the permit space entry is complete.
- Monitor conditions in and around the permit space.
- Summon rescue and applicable medical services in the event of an emergency.
- Perform non-entry rescue procedures.
- Perform appropriate measures to prevent unauthorized personnel from entering the permit space.

Entry Supervisors

- Know the hazards associated with the permit space and their effects.
- Verify that the safeguards required by the permit have been implemented.
- Verify that rescue services are available and that the means for summoning them is operable.
- Cancel the written permit and terminate the permit space entry when required.
- Remove personnel who are not authorized to enter the permit space during entry operations. Periodically, determine that the entry operation is being performed in a manner consistent with the requirements of the permit space entry procedures and that acceptable entry conditions are maintained.

Rescue Personnel

- Must receive the training required of authorized entrants.
- Know the proper use of all personal protective equipment and rescue equipment necessary to enable them to enter and perform rescue operations.
- Must practice making permit space rescues at least once every twelve months.
- Must be trained in basic first aid and in cardiopulmonary resuscitation (CPR). At least one member must hold current certification in first aid and CPR.
- Off-site rescue services must have access to permit spaces as necessary for those rescuers to develop an appropriate rescue plan.

The training will encompass awareness training about the written program, permit required confined space training, alternative procedure training, and reclassifying confined space procedure training.

The documented training program for PRCS will include, as a minimum:

- Types of confined space hazards.
- Components of the written PRCS program.
- Components of the entry permit system.
- Components of the hot work permit.
- The need for prompt guarding of the spaces entrance opening.
- Atmospheric testing equipment including its uses, calibration, and maintenance.
- Atmospheric testing protocol.
- Methods for the control or elimination of any atmospheric hazards.

- Procedures the employees must follow if they detect a hazard.
- The evaluation process to be used for entry if hazards are detected.
- Train employees on the use of entry equipment (e.g. ladders, communication devices, etc.).
- Personal protective equipment required.
- Personnel and their responsibilities.
- On-site or Off-site rescue.
- Procedures for annual review of cancelled permits.
- Any other information necessary to ensure employee safety during a permit space entry operation.
- Documentation of the training.

The documented training program for using alternate procedures will include, as a minimum:

- A major point concerning the use of alternative procedures is that these procedures can only be used when a hazardous atmosphere is the only hazard of concern.
- The harm associated with the atmospheric hazards of concern including their acceptable entry levels and symptoms of overexposure.
- Awareness training to recognize other potential hazards in or around the space.
- Any condition which may make it unsafe to remove the entrance cover.
- The need of prompt guarding of the entrance opening.
- Atmospheric testing equipment including its use, method of calibration, and maintenance.
- Atmospheric testing protocol for oxygen, combustibles, toxics.
- Frequency of testing of the permit space.
- Check all levels of the space for atmospheric hazards.
- Atmospheric Controls:
  - Inerting
  - Draining and rinsing
  - Purging
  - Continuous forced air ventilation including type, proper use and placement, and its limitations.
- Procedures the employee must follow if a hazardous atmosphere is detected.
- The evaluation process to be used for entry if a hazardous atmosphere is detected or the individual vacates the space and returns some later time.
- Train employees on the use of entry equipment used including ladders and intrinsically safe lighting for explosive atmospheres.
- Personal Protective Equipment (e.g., gloves, hard hats, boots, etc.) and. its use, limitations, and required maintenance.
- A review of the completed written certification form with the employee prior to entering the space.
- Any process which may introduce a hazard (e.g., welding, cleaning with chemical solvents, etc.) which would prohibit use of alternative procedures.
- Any other information needed to ensure the safety of the employee.
- The documentation of the training.

The documented training program for reclassifying permit space procedures will include, as a minimum:

- Documentation of the elimination of hazards. If the elimination of the hazards or verification of elimination requires employees to enter the space, then a full PRCS program is needed.
- Train employees on the hazards associated with the space (i.e. Mechanical, chemical, atmospheric) and the methods needed to eliminate the hazards as:
  - Isolation techniques
  - Lockout/Tagout
  - Disconnection and misalignment of pipes
  - Double block and bleed
  - Blanking and blinding
  - Removal of engulfment hazards
  - Elimination of hazardous atmosphere by draining, inerting, purging, cleaning, venting
  - Train employees on the use of entry equipment used including ladders, ground fault circuit interrupters for electrical equipment, etc.
  - Personal protective equipment (e.g., gloves, hard hat, boots, etc.) including its use, limitations and required maintenance.
  - A review of the completed written certification form with the employee entering the space.
- Inform employees that any procedures such as welding, cleaning with a chemical, etc. would negate the reclassification and convert space back to a permit space.
- Any conditions which may make it unsafe to remove entrance cover.
- The need for prompt guarding of entrance opening.
- Atmospheric testing equipment including its use, method of calibration, and maintenance.
- Atmospheric testing protocol
  - Oxygen, combustibles, toxics
  - Before entry, frequent or continuous testing
  - Check all levels of the space.
- Procedures the employee will follow if a hazard is detected.
- The evaluation process to be used for re-entry if a hazard is detected of the individual vacates each space and returns some later time.
- Awareness training to recognize other potential hazards in or around the space.
- The documentation of the training.

The employer will keep a record, in the Confined Space Program, of all authorized entrants, attendants, and entry supervisors with their trainer and training date included.

Rescue and Emergency Services

To ensure employee safety while operating within the confined space, the Entry Contractor will establish a Rescue and Emergency Service plan at each jobsite, should an emergency or event occur. LeChase will verify emergency rescue has been established. Each prospective rescue team will be evaluated on their response to a rescue summons and, with consideration of the hazard(s), the time in which it takes them to respond. When selecting a team or service, the Entry Contractor will consider all of the following in evaluation:

- Capability of reaching victims within a timeframe that correlates with the type of permit space and hazards associated with that space
- A team proficient in and completely equipped for the needed rescue services for each individual jobsite
- If the rescue service becomes unavailable at any time, immediate notification will be called in or sent to the jobsite

A copy of all permit spaces, and the hazards associated with each space, will be made available for the rescue team or service and full access will be granted to them to perform practice operations and assemble rescue plans.

In the event that the Entry Contractor would assemble its own team of employees to perform permit space rescue or emergency services, training and equipment will be provided at no cost to any of those employees. Each employee will receive training on how to properly use personal protective equipment provided, how to perform all rescue duties, and at least one team member must be trained in basic first aid and cardiopulmonary resuscitation. Before performance of actual permit space rescues, the rescue team must perform practice space rescues. The rescue team will be retrained every twelve (12) months.

Non-entry rescue will be used at all times, at all jobsites unless retrieval equipment would hinder the rescue of the entrant or would increase the overall hazard inside the space. When entering the permit space, the authorized entrant must be wearing a full-size body harness that is attached securely and properly to the retrieval system.

Retrieval lines and other equipment used will be inspected for use before entry taking into account all contributing factors (i.e., depth of space, configuration, etc.).

Confined Space Program Review

Within one year of any entry operation, the LeChase Regional Safety Manager will conduct a review of the program using the cancelled entry permits to identify any deficiencies in LeChase's program. A review will be conducted sooner if there is reason to believe that the program does not adequately protect our employees. Any corrective measures will be documented by a revision of the program. Employees will be trained on any changes. Additionally, employees who note any inadequacies with the program can contact the Regional Safety Manager or ESH Department. If no permit space entry operations are conducted during the year, no review is needed.

Appendix A: Training Documentation

The following is a list of employees who have been equipped and trained to serve as **authorized entrants**:

Authorized Entrant	Trainer	Date of Training
1.		
2.		
3.		

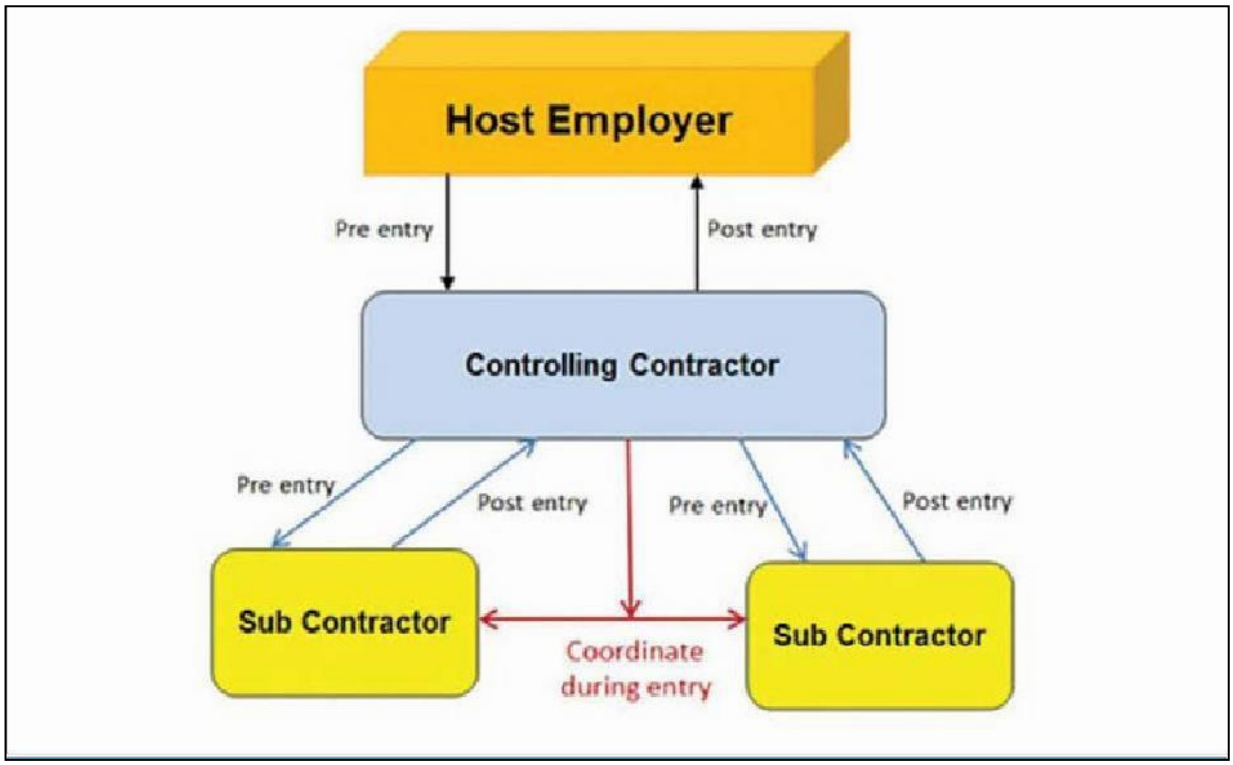
The following is a list of employees who have been equipped and trained to serve as **attendants**:

Attendant	Trainer	Date of Training
1.		
2.		
3.		

The following is a list of employees who have been trained to serve as **entry supervisors**:

Entry Supervisors	Trainer	Date of Training
1.		
2.		
3.		

Appendix B: Confined Space Rules and Responsibilities at Worksite



Appendix C: Permit Space Reclassification

PERMIT SPACE RECLASSIFICATION

A permit space may be reclassified as a non-permit confined space when

- The space poses no actual or potential atmospheric hazards, and
- All hazards within the space are eliminated without entry into the space.

This reclassification is only valid as long as the space remains hazard free. If hazards arise within a non-permit space, personnel in the space must exit immediately and the space must be re-evaluated. Once the space is returned to normal service, the non-permit classification is invalid.

CONFINED SPACE IDENTIFICATION

Confined space location: _____

Purpose of entry: _____

Previous materials in the space: _____

PRE-ENTRY HAZARD ELIMINATION MEASURES TAKEN

■	Contents of the space removed	Yes	N/A
■	Chemical, utility, and outlet lines isolated	Yes	N/A
■	Lockout/tag out procedures implemented	Yes	N/A
■	Atmospheric testing (oxygen, flammable vapors/gases, and toxic concentrations) conducted and documented below	Yes	N/A
■	Manway and access opening obstruction hazards eliminated	Yes	N/A
■	Physical barriers or barricades installed	Yes	N/A

ADDITIONAL HAZARD ELIMINATION MEASURES TAKEN

_____

_____

STEPS NECESSARY TO IDENTIFY HAZARDS THAT DEVELOP DURING ENTRY

_____

_____

ATMOSPHERIC MONITORING RESULTS

Agent	Limit	Results	Date	Time	Tester Signature
Oxygen	19.5 to 23.5 percent				
Flammables	Less than 10 percent of LEL				
Toxics	Less than PEL/TLVs				

I certify that all hazards have been eliminated and that there is no possibility of any hazard occurring in the confined space and hereby reclassify the space as a non-permit-required confined space.

_____ Print name

_____ Print title

_____ Signature

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Appendix D: LeChase Confined Space Entry Permit

LeCHASE

CONFINED SPACE ENTRY PERMIT

Job Name:	Job Number:	Company:	Permit #:
Entry Supervisor or Person Requesting Permit:			

Location & Description of Confined Space:	
Purpose of Entry:	
Names of Authorized Entrants:	
Names of Attendants:	
Names of Entry Supervisors:	
Initials of each entry supervisor authorizing entry:	

Permit Begins: Date: _____ Time: _____ AM/PM **Permit Expires:** Date: _____ Time: _____ AM/PM

METHOD OF COMMUNICATION Describe:

EQUIPMENT REQUIRED FOR ENTRY

Hard Hats	YES	NO
Coveralls	YES	NO
Boots	YES	NO
Safety Glasses	YES	NO
Safety Goggles	YES	NO
Face Shield	YES	NO
Ear Protection	YES	NO
Encapsulated Suit	YES	NO
Gloves	YES	NO
TYPE:		
Lighting	YES	NO
TYPE:		
Barricading	YES	NO
Danger-Confined Space Signs	YES	NO
Lockout Devices	YES	NO
Ventilation (mechanical)	YES	NO
Warning Lights	YES	NO
Fire Extinguisher	YES	NO
Ventilation/Blower	YES	NO
Non-sparking Tools	YES	NO
Rescue equipment	YES	NO
Other:	YES	NO
Other:_____	YES	NO
Special Instructions List:	YES	NO

RESPIRATORS REQUIRED FOR ENTRY

ARE RESPIRATORS REQUIRED? YES NO
If YES What Type: _____
Have Employees Been Trained/Fit Tested/ Med. Evaluation? YES NO
AIR-PURIFYING: Half-Mask: _____ Full-Face: _____
Type of Filters:
AIR-SUPPLIED: _____and/or_____and/or _____
Air Bottles Compressor Egress Bottles
SELF-CONTAINED BREATHING APPARATUS (SCBA): _____
*** NOTE: Air-supplied respirators with egress bottles or SCBA respirators are required for atmospheres that are Immediately Dangerous To Life or Health (IDLH)**
List any special:
1. Entry Conditions:
2. Training Required:
3. MSDS reviewed:
4. Chemicals in the area:

RESCUE EQUIPMENT REQUIRED FOR ENTRY

SCBA	YES	NO
Harness/Lifeline	YES	NO
Wristlets	YES	NO
Tripod/Manlift	YES	NO
Winch	YES	NO
First-Aid Kit	YES	NO
Stretcher	YES	NO
Other:		

Emergency Services:
_____
Identify
_____
Method of Communication
_____
Phone Number

ACCEPTABLE ENTRY CONDITIONS

Oxygen: **19.5 - 23.5%**	Flammables/Combustibles **Below 10% LEL**	Other:
Hydrogen Sulfide **0-10 PPM TLV-TWA**	Carbon Monoxide: **0 – 10 PPM TLV-TWA**	Other:

TESTING AND MONITORING CHECKLIST

Make, Model & Serial # of testing Equipment:

Date Equipment Calibrated:				Intermittent Testing			Continuous Monitoring		
	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Test 7	Test 8	Test 9
Date:									
Time:									
Oxygen	%	%	%	%	%	%	%	%	%
LEL	%	%	%	%	%	%	%	%	%
CO	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
H2S	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
Toxic:									
_____									
_____									
Tester Initials:									

HOT WORK PERMIT

Is Hot Work Permit Required? YES NO	If YES, Is it attached to this Permit? YES NO

SIGNATURE OF PERSON AUTHORIZING ENTRY:

	Date:	**Time:**
CANCELLATION OF PERMIT – ALL PERMITS MUST BE SIGNED TO CLOSE	**Date:**	**Time:**

Cancelled By: (signature)
Reason Permit was Canceled

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Confined Space Entry Permit

Standby Hole Watch Instructions

You should be thoroughly familiar with the following duties when you assume the responsibilities for a person or persons working inside a vessel or confined space. If you have questions, please see your supervisor.

Your Primary Responsibilities Are:

1. Safety of personnel working in the vessel or confined space.
2. Maintaining the conditions and requirements listed on the work permit.
3. Evacuating the vessel if you observe any condition which you consider hazardous.
4. Get help if an emergency develops. **Never attempt to enter a vessel or confined space, even in an emergency.**

(The circumstances and conditions of the job will determine the safety requirements and what your duties will be. The following duties are basic to all confined space work.**)**

General Requirements for Watch Persons

1. Items needed by watch personnel: Red or Orange vest and hand held air horn.
2. **THA** to be done on confined space work and signed off by crew. **Permit** to be read to crew and posted with THA at site.
3. **Do Not** leave your assignment while personnel are inside. (The only exception is in an emergency to get help. If you leave for any other reason, have all personnel evacuate the confined space or have a qualified person relieve you.)
4. **Be Alert** to surroundings and anticipate and/or prevent any condition that maybe hazardous.
5. Stay in constant communication or visual contact with personnel in confined space. If you are required to have respiratory equipment and lifelines, be sure you know how to use this equipment.
7. Prevent any interference of air or lifelines. All other lines are to enter through different entrance than personnel entry.
8. Upon completion of the job, clean and return all specialty equipment to its original location.
9. If you have any questions regarding your job, check with your supervisor or the safety department.

Entry/Exit Log

Date:_____ | Location:_____

Stand-by Person (s):

Entry Supervisor:

Craft Working in Confined Space:

Initial off when leaving confined space or on completion of work shift.

Name	(Print)	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	Time Out	Initials

LeChase Construction Services, LLC
Jobsite Safety Manual

Section 14 – Pressure Testing Policy and Procedures

Table of Contents

Scope

This safety manual and specification prescribes minimum requirements on hydrostatic and pneumatic testing procedures. All contractors will conduct pipe/vessel testing in conformance with specifications / drawings. Hydrostatic testing is the preferred LeChase testing method. Air or pneumatic testing should only be considered after all hydrostatic options have been exhausted. Pneumatic testing will require approval from the LeChase safety department and SBU lead.

Definitions

Hydrostatic Testing – The utilization of a fluid (typically water) as the medium for testing pressure.

Pneumatic Testing – The utilization of a gas (typically air or nitrogen) as the medium for testing pressure.

Safe Pressure Testing

Most of the hazards associated with pressure testing come from the sudden, unintended release of stored energy. The risk of injury from a failing joint, connection, gauge, valve, fitting or another component increases during the testing process, especially during pneumatic testing. Safe work practices are needed for all types of pressure testing in order to protect the workers performing the tests. LeChase has implemented a four (4) step safe work practice to plan, pre-verify, test, and post verify the pressure testing process.

Pressure Testing Hazards

Pressure testing hazards include:

- Flying objects such as valves, flanges, gauges, and fittings.
- Flying shrapnel such as small pieces of pipe, pipe fittings, or other system components that shatter into parts from the pressure.
- Oxygen displacement from an inert gas used for testing.
- Flooding in areas where energized electrical sources are present.

Injuries from Pressure Testing

Most, but not all, injuries resulting from pressure testing are inflicted by flying objects. Some of the more obvious pressure testing injuries include:

- Puncture wounds
- Eye damage
- Lacerations
- Broken bones
- Contusions
- Concussions
- Internal injuries

Less obvious pressure testing injuries include:

- Asphyxiation from the unexpected release and accumulation of inert testing gases such as nitrogen or argon, especially in confined spaces or low-lying areas.
- Electrocution from flooding in areas where energized electrical sources come into contact with a conductive liquid (usually water).

General Pressure Testing Safety

Over Pressurizing a System

To avoid over pressurizing a system the test pressure must be established. The engineer or other qualified person who will make that determination needs to know the design pressures for each component in the piping system such as gauges, valves, fittings, etc. that will be included in the test. Design pressures for components in the system that will be isolated from the test are not considered in the calculation. Design pressures and other vital specifications, such as testing temperatures (certain types of metal become brittle when they get cold) are provided by the manufacturers of the pipe and the other system components. Once the information is obtained, formulas are used to determine the test pressure.

- Determine the test pressure and time.
- Increase the pressure gradually according to the applicable procedure and ASME standard.
- Never exceed the test pressure.

Inadequate / Improper Pressure Testing Equipment –

Pressure testing equipment includes items such as gauges, pumps, cylinders, hoses, connections, etc. Test equipment is considered inadequate if it is of poor quality, not designed for the maximum pressure that it will endure, not properly calibrated, and/or not working properly.

- Use only test equipment that is designed and built to meet the testing requirements.
- Use the most current / accurate information provided by the manufacturer to ensure that the equipment is designed for your specific pressure testing application.
- Ensure that the test gauges are calibrated. Refer to the calibration stickers to ensure that the gauges have been professionally calibrated within the past 12 months.
- Check each calibrated gauge just prior to installation to ensure that it is registering zero. If it is not at zero, it is damaged and must be replaced with a properly working calibrated gauge before proceeding with the test.
- The gauges must be appropriate for the test medium, calibrated, and rated for pressures above the required test pressure.

Improper System / Component Design

A system is improperly designed if any single component is inadequate for the application. When any part of the system, such as a fitting, valve, gauge, flange, adaptor, hose connection or flex connector, is not designed to endure the anticipated test pressure, failure will occur.

Verify proper system design prior to installation. Before performing a pressure test on an unfamiliar system, verify that the engineer or other qualified person has established the original design rating from original data reports or new calculations based on sized, wall thicknesses, etc.

Operator Error

Operator error usually occurs when worker(s) feel rushed or otherwise become distracted. In those instances, workers may fail to follow the established procedure and/or equipment or material manufacturer's guidelines.

- Use this procedure and LeChase Pressure Test Permit to prepare a pre-test safety plan.
- Include all affected workers in the pre-test safety planning process to ensure they are fully aware of the hazards and risk.
- Ensure that all affected workers receive the proper training, tools, materials, and supervision needed to safely perform the test.

Inadequate Repairs / Modifications to a System

Inadequate repairs or modifications to systems can lead to problems. Use of improper fittings, misalignments, rolled or cut gaskets, etc. result in inadequate repairs or modifications, and cause pressure testing failures.

- Carefully inspect all parts of the piping system that will be included in the test before beginning. Pay especially close attention to joints and connections.
- Slow gradual pressure increases in testing pressure is required to safely assist in leak identification.

Failure to Properly Isolate the Parts of the System Being Tested –

Failure to properly isolate one or more parts of a system that are not part of the test can result in system failure. Even worse, failure to isolate a gauge, meter, or some other component that isn't designed to endure the test pressure can cause it to shatter under pressure creating high-speed flying objects.

- Review the LeChase Pressure Test Permit Section 1: Planning & Approval. This should include reviewing the piping system drawings, just prior to starting the testing process.
- Carefully follow the LeChase Pressure Test Permit Section 2: Pre-test Verification. This will include reviewing and field verifying the isolation of the system for the pressure test.

Safe Work Practices for Pressure Testing

Pressure tests are performed to ensure the safety, reliability, and leak tightness of pressurized systems. A pressure test is required for any new system before use or existing system after repair and/or alteration.

Pressure tests must always be performed under controlled conditions, following the approval of a Pressure Testing Plan, including permit and supporting documentation.

LeChase Pressure Test Permit, Section 1: Planning & Approval

The following steps apply to both Hydrostatic and Pneumatic testing and shall be completed before any testing occurs.

- Develop a pressure test safety plan.
  - Hydrostatic pressure testing reviewed by EHS
  - Pneumatic pressure testing reviewed and signed by SBU Leader and EHS.
- Identify the competent person(s)
- Submit verification of training for all employees involved in the testing procedures.
- Submit a LeChase High-Hazard Analysis (HHA) or Task Hazard Analysis (THA) for review.
- Establish the proper exclusion zones and mark a print showing along with barricading.
  - Adequate hydrostatic pressure testing exclusion zones must be established; determined by the project team.
  - Pneumatic pressure testing exclusion zones must be a minimum of 100 feet or what is agreed by SBU Leader and the EHS department.
- Utilize cinch sacks on all caps or pipe ends that could potentially be worked on, removed, or could expose employees to the sudden release of stored energy. *See Appendix A for information on how to use a cinch sack.*
- Pressure testing areas must be clearly identified with “Danger – Under Pressure” tags or signs.
- Identify all relief mechanisms to be used in the de-pressurization process. This is best shown on the print outlining the piping and barricading area.
- Notify all site personnel of the upcoming test, at a minimum **24 - 48 hours in advance**.
- Performing the test during off hours, weekends, or when there are limited personnel in the test area is highly preferred.

Considerations:

Pneumatic tests are typically more dangerous than hydrostatic tests due to a higher level of potential energy.

Pressure tests such as pneumatic tests are performed to ensure the safety, reliability, and leak tightness of pressure systems.

A pressure test is required for a new pressure system before use or an existing pressure system after repair or alteration.

Pneumatic tests may be performed only when at least one of the following conditions exists:

Pressure system is specifically designed for gas and may not withstand the weight of fluid testing.

Pressure system is to be used in services where traces of testing medium cannot be tolerated.

All pneumatic testing must be approved by the owner or their designee, where required.

Pneumatic tests **<u>may not be performed</u>** on cast iron or plastic (PVC) pipes, vessels, or systems not approved by manufacturers.

Pressure tests must always be performed under controlled conditions, following an approved test plan, HHA/THA, and documented in a test record.

A single approved test plan may be used for several similar tests, but separate THAs/HHAs and test records are required for each.

Testing Mediums

Hydrostatic Pressure Tests: All hydrostatic testing must utilize non-toxic and non-damaging fluids, typically water.

Pneumatic Pressure Tests: Must utilize non-toxic, non-flammable, and non-damaging gases, such as nitrogen or inert gas, if not compressed air.

Test Pressure
It is the responsibility of the subcontractor to ensure all calculations are correctly made by qualified person. All calculations shall be included in the pressure test plan and submitted for review and approval in section 1 of the LeChase Pressure Test Permit.

Test Limits
Depending on the location and size of the pipe to be tested, there may be limits to the length of pipe that can be tested at any given time. Documentation should be provided by the subcontractor for any standard requiring a certain pressure and/or specific guidelines on any limitations of the test.

LeChase Pressure Test Permit, Section 2; Pre-Test Verification

This step is to field verify the plan and isolation of the system being tested.

- Review the Pressure Test Permit, Section 1 to ensure it has been signed and approved.
- Review that the THA/HHA has been completed and signed by all participating in the testing.
- Verify that notification of the pressure test been completed
- Ensure gauges have been calibrated and connected per the description in the Pressure Test Permit, Section 1.
- Review the system isolation and the proper lockout and/or tagout has been applied.
- Verify all plugs, blanks, and fills and their rating to ensure they will withstand the pressure test.
- Verify the competent person has walked the entire system to verify the system is ready for the test and that they have signed the Pressure Test Permit, Section 2.

Personal Protective Equipment

Personal protective equipment is critical in case there is a failure in the piping system during the testing operation. This should be recorded in the THA/HHA and followed for the course of the test.

- Ensure all affected workers are wearing a hardhat, safety glasses, hi vis clothing and gloves when pressure testing any piping system.
- Require the use of face shields and/or hearing protection in addition to the above when appropriate.

LeChase Pressure Test Permit, Section 3; Recorded Test Results

This section records the actual test results. Begin by pressurizing the system gradually until no more than ½ or 50% of the desired test pressure. Walk the system to ensure there are no leaks or issues. Once ½ of the target pressure is reached with no leaks verified, proceed with 1/10 increments every 10 minutes until test pressure is achieved.

This section must be signed off by the competent person and LeChase. The inspector and owner/agent will sign when required.

LeChase Pressure Test Permit, Section 4; Post-Test Verification

The purpose of this section in the form is to ensure the system has been returned to its normal, safe state. This is to provide some guidance to those things that could potentially be left in place that could have pressure when trying to use for normal operation.

- Has the system been depressurized?
- Have the barricades, signs, exclusion zones, and notices been removed?
- Has the system been unlocked?
- Have test gauges, blanks, plugs, fills, etc. been removed?

Hydrostatic Pressure Testing Procedure

NOTE: ALL HYDROSTATIC TESTS WITH PRESSURES OVER 250 psi WILL HAVE 2 CALIBRATED GAUGE SETS INSTALLED.

1. Ensure all steps are complete under the Planning section of this procedure before any testing takes place.
2. Ensure gauges are unexpired with the appropriate calibration sticker and reads zero. Per ANSI A10.35 Section 9.2(7) gauges shall be calibrated within 12 months.
3. Clear the exclusion zone and remove all individuals not involved in the testing procedure. Post necessary barricading and required signage.
4. Ensure calibrated gauge is always visible.
5. Verify that relief devices and mechanical equipment not rated for the pressure test have been removed.
6. Verify any skillet blanks, test plugs or clamps are appropriately rated for use and free of any obvious defects.
7. Identify whether there are check valves in the system, the internal components shall be removed for the pressure test, to prevent trapping pressure in the system.
8. Verify all temporary test gaskets are rated for the pressure test.
9. Fill and vent system as necessary to remove as much air as practical.
10. Ensure fluid used for testing is not less than ambient temperature and no less than 70 degrees Fahrenheit.
11. Ensure pressure is continually monitored by a designated competent person (authorized employee).
12. Begin pressurizing the system; raise the pressure gradually until no more than ½ of the intended pressure is achieved.
13. Walk the system to identify any visible leaks.
    a. If leaks are detected.
        i. mark for repair,
        ii. depressurize the entire system,
        iii. repair and ensure repairs are appropriately made in accordance with standards and/or guidelines being reference to the piping system application.

NOTE: Any personnel found to be operating on an energized system (including pressurized) shall be subjected to strict disciplinary action, up to and including immediate dismissal.

14. Restart repressuring by returning to step 12.
15. Once ½ of the target test pressure is achieved, increase the pressure with the following guidelines:
    a. Increase in 1/10 increments of the test pressure not to exceed 25 psi.
    b. For every incremental increase the system is raised, hold for 10 minutes.
    c. Continue this process until desired pressure is reached.
16. Check the gauge for signs of leakage. If leaks are detected return to step 13.

DEPRESSURIZING:

17. Depressurize the system in accordance with manufacturer specifications and the LeChase Pressure Test Permit, Section 4.
    a. Vent all test pressure to the identified drain or atmosphere
    b. Return relief devices and valves to normal configuration.
    c. Remove hoses, test blinds, etc. and the 100’ radius exclusion zone barricade and signs.
    d. Reinstall any check valve internal parts.
    e. Notify LeChase project team and all site personnel of the test’s completion.

Pneumatic Pressure Testing Procedure

NOTES:

Pneumatic tests are typically more dangerous than hydrostatic tests due to a higher level of potential energy. Pneumatic tests may be performed only when at least one of the following conditions exist:

- When pressure systems are designed so that they may not be filled with water.
- When pressure systems are to be used in services where traces of testing medium cannot be tolerated, i.e., medical gas piping, gas lines, refrigerant lines.

ALL PNEUMATIC TESTS WITH PRESSURES OVER 250 psi WILL HAVE 2 CALIBRATED GAUGE SETS INSTALLED.

All pneumatic testing must be reviewed and signed off by the SBU Lead and Safety.

1. Ensure all steps are complete under the Planning section of this procedure before any testing takes place.
2. Ensure gauges are unexpired with the appropriate calibration sticker and reads zero. Per ANSI A10.35 Section 9.2(7) gauges shall be calibrated within 12 months.
3. Clear the exclusion zone and remove all individuals not involved in the testing procedure. Post necessary barricading and required signage.
4. Clear the exclusion zone and remove all individuals not involved in the testing procedure.
5. Verify all temporary gaskets are rated for the pressure test.
6. Remove relief devices and mechanical equipment not rated for the pressure test.
7. Identify whether there are check valves in the system, the internal components shall be removed for the pressure test, to prevent trapping pressure in the system.
8. Ensure pressure is continually monitored by a designated competent person to ensure that pressure never exceeds the designated test pressure of the system.
9. Begin pressurizing the system; slowly and gradually raise the pressure until no more than ½ of the target test pressure is achieved.
10. Walk the system to identify any audible leaks.
    a. If leaks are detected.
        i. mark for repair,
        ii. depressurize the entire system,
        iii. repair and ensure repairs are appropriately made in accordance with standards and/or guidelines being reference to the piping system application.

NOTE: Any personnel found to be operating on an energized system (including pressurized) shall be subjected to strict disciplinary action, up to and including immediate dismissal.

11. Restart repressuring by returning to step 9.
12. Once ½ of the target test pressure is achieved, increase the pressure with the following guidelines:
    a. Increase in 1/10 increments of the test pressure not to exceed 25 psi.
    b. For every incremental increase the system is raised, hold for 10 minutes.
    c. Continue this process until desired pressure is reached.
13. Check the gauge for signs of leakage. If leaks are detected return to step 10.
14. If no leaks, begin required hold time in accordance with the submitted test procedure.
15. Based on the outcome of the test, the inspector will either approve or reject the test.

DEPRESSURIZING:

16. Slowly depressurize the system by venting the test pressure to atmosphere away from personnel.
17. Depressurize the system in accordance with manufacturer specifications and the LeChase Pressure Test Permit, Section 4.
    a. Vent all test pressure to the atmosphere
    b. Return relief devices and valves to normal configuration.
    c. Remove hoses, test blinds, etc. and the 100’ radius exclusion zone barricade and signs.
    d. Reinstall any check valve internal parts.
    e. Notify LeChase project team and all site personnel of the test’s completion.

Appendix A: LeChase Pressure Test Permit

PRESSURE TESTING

PLAN, REQUEST & VERIFICATION

PLANNING & APPROVAL

CONTACT INFORMATION

Contractor Name:
Supervisor:
Phone:
Competent Person:
Phone:

PROPOSED TEST INFORMATION

☐ Hydrostatic ☐ Pneumatic
System Type:
Location:
Max Oper. Pressure:
Date/Time:

Provide explanation if proposed test info does not meet specs.

TEST SPECIFICATIONS

☐ Hydrostatic ☐ Pneumatic
Spec Section:
Test Pressure:
Test Duration:

PLANNING CHECKLIST

DESCRIPTION	YES	NO	REMARKS
Has the contractor reviewed the LeChase pressure testing procedure?	☐	☐	
Has an HHA (or approved alternate plan) been reviewed and approved? *Attach for reference.*	☐	☐	
Is the testing logistics plan attached? *Highlight system in YELLOW, exclusion zone in RED.*	☐	☐	
Does the proposed test meet the designer's specifications? *Attach for reference.*	☐	☐	
Is the pipe rating verified to be greater than the maximum pressure for this test?	☐	☐	
Are all gauge calibrations current?	☐	☐	
Will this test affect other trades or occupied spaces?	☐	☐	
Does this test require any supervision outside of normal working hours on the project?	☐	☐	
Have potential fluctuations in pressure been accounted for due to changing ambient temps?	☐	☐	
Has both the company supervisor and competent person reviewed this plan in detail?	☐	☐	

LECHASE APPROVALS

LCS Project Mgmt: X Date:
LCS Safety (if req'd): X Date:
SBU Lead (if req'd) X Date:

Once approved, LeChase will return hard copy of this document back to submitting company. Appropriate LeChase representative may proceed with scheduling test with applicable inspector/witness (if required).

PRESSURE TESTING

PLAN, REQUEST & VERIFICATION

PRE-TEST VERIFICATION

Do not fill out this information until the PLANNING & APPROVAL portion above has been approved by LeChase. All questions below must be completed, and reviewed and approved by LeChase before energizing the system.

PRE-TEST CHECKLIST

DESCRIPTION	YES	NO	REMARKS
Has a THA been completed and signed by the LeChase team?	☐	☐	
Has all personnel on site been notified of the test?	☐	☐	
Has all necessary coordination taken place with other trades and/or the client?	☐	☐	
Have gauges, valves, appurtenances, etc. that are not rated for this test pressure been removed?	☐	☐	
Have all plugs, blanks, and fills been verified to have a rating higher than this test pressure?	☐	☐	
Has the contractor competent person walked the system with LCS to verify lockout/tagout devices?	☐	☐	
Has the applicable inspector/witness been notified and scheduled for this test?	☐	☐	
Are all barricades and signage in place at the exclusion zone?	☐	☐	
Has the competent person walked the entire system to verify it is ready for this test?	☐	☐	

Competent Person: X _____ Date: _____

LECHASE APPROVALS

LCS Project Mgmt: X _____ Date: _____

LCS Safety (if req'd) X _____ Date: _____

Once approved by LeChase, the contractor may begin to energize the system.

TEST RESULTS

PRESSURE READINGS

Record all increases of pressure until the system reaches the maximum test pressure. Date: _____

INCREMENT	PRESSURE	TIME	REMARKS
Start Pressure			
1			
2			
3			
4			
5			
6			
7			

PRESSURE TESTING

PLAN, REQUEST & VERIFICATION

INCREMENT	PRESSURE	TIME	REMARKS
8			
9			
10			
11			
12			
13			
14			
15			
16			
Start (Test) Pressure			
Finish (Test) Pressure			

APPROVALS

Contractor: X _____ Date: _____

Contractor Competent Person is required to sign acknowledging the above pressure readings are accurate and true.

POST-TEST VERIFICATION

Do not fill out this information until the TEST RESULTS portion above has been completed.

POST-TEST CHECKLIST

DESCRIPTION	YES	NO	REMARKS
Has the system been depressurized?	☐	☐	
Has all barricades and signage been removed at the exclusion zone?	☐	☐	
Have all test gauges, blanks, plugs, fills, etc. been removed?	☐	☐	
Have all lockout/tagout devices been safely removed?	☐	☐	

APPROVALS

Contractor: X _____ Date: _____

LeChase: X _____ Date: _____

LeChase Construction Services, LLC
Jobsite Safety Manual

Section 14.1 – Lock Out Tag Out Program

Table of Contents

Scope

This policy applies to all LeChase Construction, QSI, and affiliate companies, subcontractors, vendors, and visitors.

Key objectives of this procedure include ensuring:

- All machines, equipment, vessels, electrical or process systems are isolated from all potentially hazardous stored energy.
- All site personnel are protected from unexpected energization, start-up, or release of stored energy.
- All site personnel are aware of all machines, equipment, vessels, electrical or process systems on site that are currently in an energized state.
- Project Team responsibilities for ensuring lock out tag out procedures are followed.

Purpose

This procedure establishes the minimum requirements for the lock out and tag out of energy isolating devices. It shall be used to ensure that all authorized and affected employees working on or near energized equipment are protected from the potentially hazardous release of any stored energy.

In addition to this procedure, subcontractors who maintain or service equipment where the unexpected start-up may cause injuries, shall develop and use a written Lockout/Tagout program that complies with OSHA 29 CFR 1910.147.

This Lockout/Tagout procedure encompasses all types of hazardous energy including, but not limited to hydrostatic / hydraulic, pneumatic, electric, chemical, mechanical and gravitational. **For additional information about hazardous energy sources, refer to Section 14 Stored Energy Program.**

Definitions

Affected Employee	An employee whose job requires him/her to operate or use a machine or equipment on which servicing, or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.
Authorized Employee	A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this section.
Energy Source	Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Lockout	The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed. (The energy source may include electrical, hydraulic, steam, pneumatic, etc.)
Tagout	The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated the tagout device is removed. Appropriate 'DO NOT OPERATE' tags must be utilized.
Tags	Tags are defined as standardized warning devices used to identify and communicate the state of a locked system. Tags do not qualify as physical restraints and must be used in conjunction with Lockout Devices to ensure compliance with safety standards. Tags shall be durable enough to withstand the environment in which they are exposed to. (Appropriate "DO NOT OPERATE" tags must be utilized.)

For additional definitions see 29 CFR 1910.147(b)

Authorization / Responsibility

Only authorized and trained personnel in "Lock Out Tag Out" procedures will be allowed to perform lock out tag out.

It shall be the responsibility of the LeChase Project Team to ensure proof of training has been received and validate for all personnel performing Lock Out Tag Out. Such proof of training will be maintained on site by the LeChase Project Team.

Rules

1. Locks, chains, wedges or other hardware which meets the requirements defined in 190.147 (c) (5)(ii) shall be provided by the company who is apply such device.
2. Locks for lockout devices shall be singularly identified and have only one key. They shall be the only devices used for controlling energy and shall not be used for other purposes.
3. The lockout device shall indicate the identity of the employee applying the devices.
4. All stored energy, machines and or equipment shall be locked out to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Lockout will also apply when working on or near deenergized store energy.
5. No employee shall attempt to operate any switch, valve, or other energy – isolating device which is locked out.
6. Each lockout device shall only be removed by the employee who applied the device.
7. No locked-out system will be energized without the knowledge and approval of the LeChase project team. This is to ensure that such system is ready for energization in accordance with the project schedule and start up requirements.

Warning

Only by following Removal of Lockout Devices in this policy may a lock or tag be removed by any employee other than the individual placing the lock. Project Mgmt. must be involved.

Any and all personnel found to be operating a switch or device identified with 'Do Not Operate' tags or removes a tag without authorization will be subject to disciplinary action, up to and including immediate dismissal.

All pressurized (air, water, etc.) systems must also be clearly identified with a barricade and 'DANGER – UNDER PRESSURE' signs or tags.

Lockout Procedures and Techniques

Preparation for Shutdown

1. No system shall be energized, de-energized or connected to an existing system without a pre-planning session consisting at minimum of the LeChase Project Team (Project Manager and/or Superintendent), controlling contractor for the installed system and any contractors who could be inadvertently affected by such system being energized, de-energized or connected to an existing system. The owner or their representative will be in attendance of such pre-planning as required.
2. In preparation for lockout, an initial survey must be made to locate and identify all energy isolating devices to be certain which switch, valve, or other energy isolating devices applied to the stored energy, equipment or machine to be locked out. More than one energy source (electrical, hydraulic, pneumatic, chemical, thermal, or others) may be involved.
3. Before an authorized or affected employee turns off a any system, equipment or machine, the authorized employee must have knowledge of the type and magnitude of the energy to be controlled, and methods to the energy.
4. A Task Hazard Analysis (THA) shall be completed, and appropriate permit obtained prior to work or execution on all energized sources and prior to lock-out/tag-out.
5. A LeChase Project Manager or Superintendent for the project shall have a lock and tag on the system(s) to prevent accidently released of energy at the point of main energy source. Any potential secondary energy points whereas the system may be energized will also be locked out by the LeChase Project Manager or Superintendent.

Machine or Equipment Shutdown

1. All affected employees shall be notified that a lockout system is to be utilized and the reason for it, before the controls are applied.
2. If machine or equipment is operating shut it down by normal stopping procedures.

Machine or Equipment Isolation

Physically locate and operate the switch, valve, or other energy isolating devices so that the equipment is isolated from its energy sources and apply adequate hardware.

Stored Energy

All stored or residual energy in pneumatic, hydrostatic, hydraulic, mechanical systems, etc. shall be blocked or dissipated. If there is a possibility of reaccumulation of stored energy, verification of isolation must be continued until testing, servicing, or maintenance is completed.

Electrical Panels

Specific requirements regarding locking and tagging electrical panels have been implemented company wide. When locking and tagging electrical panels, the following items must be considered:

- During new construction or renovations, feeder lines should not be connected to any operable panels until all work on the circuit is completed.
- All electrical panels shall be controlled and accessed solely by qualified Electricians or in emergency, a competent LeChase Superintendent.
- When energized, all electrical panels will be clearly labeled with appropriate warning signage. The signage will be clear and visible for all employees.
- All breakers in all electrical panels shall be clearly and legibly marked and identified.
- All temporary electrical panels will have covers and a locking option.
- The LeChase/subcontractor Lock out/Tag out process will be carefully implemented and monitored for all work on energized circuits. Additionally, the company and all subcontractors will follow and comply with all provisions of OSHA Standard 1926.417.
- All equipment, panels and circuits that are de-energized must be rendered inoperative and include a physical lock and tag. This directive also applies to each breaker in each temporary or permanent electrical panel on LeChase sites. This applies to all voltages, including 110.
- At all LeChase sites, the electrical subcontractor shall provide the LeChase Project Team (Project Manager and/ or Superintendent) a list of the competent persons who are responsible for the implementation of OSHA Subpart K 1926.400.

Lockout Device Application

1. Authorized employees shall lockout the energy isolating devices with assigned individual locks.
2. Lockout devices shall be applied so that they will hold the energy isolating devices in a “Neutral” or “Off” position.

Verification of Isolation

Prior to starting work on any stored energy system, equipment or machinery that has been locked and after ensuring that no personnel are exposed, the authorized employee shall confirm the absence of energy using a secondary means of verification, i.e. voltmeters, checking pressure gauges, proper testing equipment, or engaging start buttons, prior to working on potentially energized systems.

Caution

Return all operating controls to the “Neutral” or “Off” position or bleeder valves to the “Closed” position after the test. The stored energy system, equipment or machinery is now locked out.

Removal of Lockout Devices

1. ***After the testing, servicing or maintenance is completed and before the lockout devices are removed and energy is restored, the following sequence of activities shall be completed by the authorized employee(s).***
2. If the authorized employee who applied the lock is not available, the supervisor shall take the following steps:
    a. Attempts to contact the individual must be taken. It is best if the individual can return to remove his own lock before proceeding with this process.
    b. Document each step on a specific THA for the lock removal process.
    c. Clear the stored energy system, equipment or machinery of tools and materials.
    d. Remove employees from the stored energy, equipment or machinery.

e. Remove the lockout device.
f. Energize and proceed with testing or positioning.
g. Deenergize all systems and reapply energy control measures in accordance with **"Lockout Procedures and Techniques"**.

Additional Requirements

In the preceding steps, if more than one individual is required to lockout a stored energy system, equipment, or machinery (group lockout), the following procedures shall be implemented to provide protection for all employees.

1. A primary authorized employee will be designated and responsible for the number of people working under the protection of the group lockout. The primary authorized employee will ascertain the exposure status of the individual member participating in the group lockout to ensure continuity of protection for every individual. In addition, this primary authorized employee will be responsible for notifying affected employees before and after lockout procedures and performed.
2. Each individual employee will place his/her own personal lockout device on the energy isolating device(s).
3. When an energy-isolating device cannot accept multiple locks, a multiple lockout system must be used. (i.e. Lockout Box)

Shift or Personnel Changes

If a lockout procedure will extend into the following shift, the authorized employee who originally placed the lock will remove it and it will immediately be replaced with the lock of the authorized employee who is to continue the work on the stored energy system, equipment or machinery for the following shift.

Subcontractors

1. Inform subcontractors of LeChase lockout procedures and supply with a copy.
2. Obtain and review a copy of the subcontractor's lockout procedures to verify they are adhering to all OSHA required Lockout requirements and LeChase 'Lock Out Tag Out Program".
3. Obtain proof of lockout tagout training for all subcontractor employees who will be preforming lockout procedures.

Training

All contractors must provide effective initial training and retraining as necessary and certify that such training has been given to all employees. The certification must contain each employee's name, dates of training, brief explanation of training and name of trainer.

All employees shall be trained in accordance with the requirements of this section including any known or potential hazards prior to the operation. **Only authorized employees may conduct the lockout/tagout procedure. Employees that are not authorized, but are otherwise affected by the lockout/tagout, must be aware of all potential hazards associated with the procedure.**

1. Authorized employees shall receive training covering:
    a. Recognition of hazardous energy sources.
    b. Types and magnitude of hazardous energy in the workplace.
    c. Methods, devices, and procedures used to lockout, verify lockout, and otherwise control hazardous energy on all stored energy systems, equipment or machinery they will be working on.
    d. Procedures for removing locks and returning stored energy systems, equipment, or machinery to operation.
    e. Transfer of lockout responsibilities.
    f. Group lockout procedures.

g. Proper procedures for re-energizing systems
h. Proper notification process

2. Affected employees and all “other” employees shall receive training so they are able to:
   a. Recognize when energy control procedures are being implemented, and
   b. Understanding the purpose of the procedures and the importance of not attempting to start up or use the stored energy systems, equipment or machinery that has been locked out.

Retraining

Authorized or affected employees shall receive retraining in proper application f lockout procedures when there is a change in:

a. Job assignment(s) that expose an authorized employee to new hazards or lockout procedures.
b. Stored energy systems, equipment or machinery that present a new hazard or require modified lockout procedures.
c. Energy control procedures for a piece or type of equipment.
d. Or when it becomes known that an employee incorrectly performs lockout procedures.

Retraining will re-establish employee proficiency in lockout and ensure that employees are knowledgeable of new or revised procedures. All retraining will be certified.

Periodic Inspections

Safety audits conducted by LeChase EH&S and the site team shall ensure complete compliance to the lockout procedure, including but not limited to all THAs, Pressure Testing Plans, and HHAs associated with lockout/tagout.

Examples of Lock Out Tag Equipment

Tags

OSHA requires ‘DO NOT OPERATE’ tags to be utilized during the implementation of Lockout/Tagout.

Requirements

- Only the standard ‘DO NOT OPERATE’ tags shall be used.
- All tags shall include the following information:
  - Date of placement
  - Name of originator and subcontractor
  - Originator phone number
  - Estimated date of completion
  - Contractor name
  - Description of equipment
  - Reason for the lock-out
  - Once each of the above identifiers has been recorded, the completed tag shall be securely attached to equipment.
- No device shall be operated with tag or lock attached regardless of circumstances.
- No person shall remove a tag or lock without written approval from the originator.
- It is the lockout/tagout controlling contractor’s responsibility to ensure that no work is performed beyond the protection of locks and tags installed.

- Tags should be installed in an obvious and readily noticeable manner. The tag must be placed in such a way that prevents all personnel from operating on an unsafe piece of equipment or injuring a person working on a piece of equipment.
- Tags should be fit for purpose and suitable for climatic conditions.

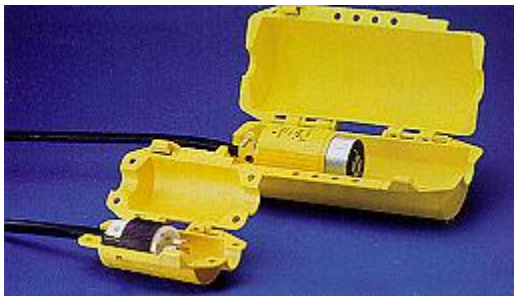
Lockout Devices

Lockout devices refer to any device that, when installed over an isolating device or as an integral block/blank in a piping system, positively restricts the isolating device from being energized or activated. **Lockout devices do not typically identify or provide information about the energized/de-energized system and must be used in conjunction with tags.**

Types

Types of lockout devices include, but are not limited to:

- Keyed padlocks
- Combination padlocks
- Properly installed blank flange with relief valve.
- Properly installed bolted slip blind
- Scissor hasps
- Key boxes
- Cinch Sacks



Requirements

Lockout device requirements are as follows:

- Only individual keyed locks will be used; the key will remain in the possession of the originator/authorized person, or individual placing the locks. Locks must be of one key only. NO DUPLICATE KEYS ARE AUTHORIZED.
- Each lock will be identified by the individual placing lock.

- Multiple locks are required when more than one employee, trade or contractor must work on the same de- energized system.
- Locks may only be removed by the originator, or employee responsible for the lockout.
- Locks may only be removed upon completion of all system repairs/work and clean-up.

Lockout Tagout Check List

General

The following simple lockout procedure is provided to assist with achieving the requirements within this policy. When the energy isolating devices are not lockable, tagout may be used, provided the provisions within this policy are followed and more periodic inspections are conducted. When tagout is used and the energy isolating devices are lockable, the contractor will provide full employee protection and more rigorous periodic inspections are required. For more complex systems a more comprehensive procedure may need to be developed, documented, and utilized.

Sequence of Lockout

1. Notify al employees that of system that is to be shut down and locked out to perform service, maintenance or testing.
2. The authorized employee(s) shall refer to the company procedure to identify the type and magnitude of the energy that the machine or equipment utilizes, shall understand the hazards of the energy, and shall know the methods to control the energy.
3. If the machine or equipment is operating, shut it down by the normal stopping procedures. (depress the stop button, open switches, close valves, etc.)
4. De-activate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s).
5. Lock out the energy isolating device(s) with assigned individuals lock(s).
6. Ensure required warning and dangers signs, tags, etc. are posted.
7. Stored or residual energy (such as that in elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods as grounding, repositioning, blocking, bleeding down, etc.
8. Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the pushbutton or other normal operating control(s) or by testing to make certain the equipment will not operate. Caution: Return operating control(s) to neutral or “off” position after verifying the isolation of the equipment.
9. The machine or equipment is now locked out.

Restoring Equipment to Service.

1. Check the work area or equipment and immediate area around the machine or equipment to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
2. Check the work area to ensure that all employees have been safely positioned or removed from the area.
3. Verify that the controls are in neutral, system depressurized, etc.
4. Remove the lockout devices and reenergize the machine or equipment.
   Note: The removal of some forms of blocking may require reenergization of the machine before safe removal can be performed.
5. Notify affected employees that the servicing, maintenance, or testing is completed.
6. Ensure all signage has been removed once machine, equipment or system has been returned to service.

LeChase Construction Services, LLC
Jobsite Safety Manual

Section 15 - Fire Protection Requirements

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Scope

The following procedure will govern the use, inspection, and control of fire extinguishers, as well as general fire protection requirements.

Definitions

Flammable	Capable of being easily ignited, burning intensely, or having a rapid rate of flame spread.
Fire Classification	**Class A Fire** – Ordinary combustibles commonly found around homes, (i.e. wood, paper, plastic, cloth, rubber). Extinguisher agents: water based, foam, or dry chemical. **Class B Fire** – Flammable liquids and gases, (i.e. gasoline, oil, and propane). Extinguisher agents; dry chemical, carbon dioxide, or foam. **Class C Fire** – Fires involving electrical equipment, (i.e. appliances, wiring, circuit breakers. Extinguisher agents; CO_2, dry chemical, non-conductive agents). **Class D Fire** – Combustible metals, (i.e. magnesium titanium, aluminum). Extinguisher agents: specialized dry powder designed for specific metals. **Class K Fire** – Cooking oils and fats in kitchens, (i.e. vegetable oil and animal fats). Extinguisher agents: wet chemical specifically formulated for grease fires.
Flammable Liquids	Any liquid having a vapor pressure not exceeding 40 pounds per square inch (absolute) at 100° F (23° C) and having a flashpoint at or below 199.4° F (93° C). Flammable liquids are divided into four categories as follows: **Category 1** shall include liquids having flashpoints below 73.4 ºF (23 ºC) and having a boiling point at or below 95 ºF (35 ºC). **Category 2** shall include liquids having flashpoints below 73.4 ºF (23 ºC) and having a boiling point above 95 ºF (35 ºC). **Category 3** shall include liquids having flashpoints at or above 73.4 ºF (23 ºC) and at or below 140 ºF (60 ºC). **Category 4** shall include liquids having flashpoints above 140 ºF (60 ºC) and at or below 199.4 ºF (93 ºC).

Flash Point	The flash point is the lowest temperature at which the vapors of a liquid ignite momentarily upon exposure to an open flame or spark. It serves as a indicator of a substance's potential for ignition but doesn't necessarily imply sustained combustion.
Liquified Petroleum Gases	LPG and LP Gas mean and include any material which is gases composed predominantly of any of the following hydrocarbons, or mixtures of them, such as propane, propylene, butane (normal butane or iso-butane), and butylene.
Portable Tank	A closed container having a liquid capacity of more than 60 U.S. gallons and not intended for fixed installation.
Safety Can	An approved closed metal container, of not more than 5 gallons capacity, having a flash-arresting screen, spring-closing lid and spout cover and so designed that it will safely relieve internal pressure when subjected to fire exposure.

Types of Fire Extinguishers to be Used

In general, fire protection will consist of dry chemical extinguishers (Class ABC and Class BC). In addition, water hoses and existing fire lines will be used where applicable. (Normally based on Client requirements and area hazards).

Fire Protection Requirements

Project Supervision should consult the Safety Department for specific needs and types of extinguishers as well as other fire protection requirements prior to starting projects, any hot work, or moving into unknown areas. LeChase hot work permits are required anytime work creates a potential fire; i.e. cutting, welding, grinder, etc. LeChase's hot work permit is to be used unless the client has a permit/process they require. This process must be equal to or more stringent than LeChase's.

Inspection & Maintenance Plan

All extinguishers must be inspected monthly.

- LCS Project Supervision or designee will be responsible for inspecting all fire extinguishers.
- All extinguishers mounted to equipment such as cranes, forklifts, welding machines, compressors, tractors, etc., shall be inspected by the equipment operator as part of their daily equipment inspection.
- Fire extinguishers will be assigned accordingly:
  - Fixed locations as required (building, job trailers, shops, and hot work areas)
  - Equipment (cherry pickers, welding machines, heaters, etc.)
  - Storage areas as required (compressed gas, fuel storage, etc.)
- All fire extinguishers will be inspected on a monthly basis by a competent person. At a minimum, monthly inspections will include the following:
  - Check seal around the pin. If the seal is broken, a complete maintenance check is required.

  - Ensure that pin is in place and not damaged.
  - Check the pressure gauge and lift extinguisher to determine if it is filled.
  - Examine the extinguisher shell, and all external parts for evidence of physical damage, corrosion, or other impairments.
  - Examine the hose for cuts, severe weather cracking, abrasions, or deformed exterior.
  - Check the hose couplings for tightness, corrosion, or cracks.
  - Check the nozzle tip for obstructions (bees like the nozzle for hives).
  - Operate the nozzle handle to check for free movements.
  - Visual inspeciton for dents, corrosion, pitting, or damage to the housing.
- Fire extinguishers will receive a complete maintenance check when deemed necessary by supervision on site and during annual vendor inspections.
- Discharge or defective fire extinguishers shall be tagged – "**DO NOT USE**", and immediately removed from service.

Use

- It will be the responsibility of each supervisor to train employees in the location and use of all fire extinguishers that are available in their work area, shop, building, etc. This includes instruction on the type of fire extinguisher to be used on the different classes and types of fires (e.g., gasoline, diesel, oil, electric, wood, etc.). The THA should include fire extinguisher selection and location as it relates to the work area.

Class of Type of Fire	Fire Extinguisher
• Wood, paper, rags, etc.	• Water, loaded stream, tri-class dry chemical
• Flammable liquids	• Dry chemical, CO
• Electrical	• Dry chemical, CO

- It is the responsibility of Project Supervision or their designee to plan and have adequate dry powder extinguishers installed in all general work area spaces, floors, and buildings. Where burning, welding, cutting, or open-flame equipment must be used, the person conducting this work must provide an adequate fire extinguisher for their work . These extinguishers should be arranged so that they are within quick reach of any hot work which could cause a fire.
- Each welder, burner, or operator of open-flame equipment must have an individual fire extinguisher in the immediate vicinity, there must be ten (10) pound or larger powder extinguisher within immediate reach (50 feet) of any work of this nature. Fire extinguishers for welding on scaffolds shall be readily available (within reach to the workers). It is the responsibility of supervision to see that this requirement is followed at all times.

REMEMBER!
DO NOT RETURN TO SERVICE ANY DISCHARGED FIRE EXTINGUISHERS AFTER USE. OBTAIN REPLACEMENT IN ACCORDANCE WITH THIS PROCEDURE. THE SAFETY

DEPARTMENT MUST BE NOTIFIED OF ANY AND ALL FIRES CAUSED BY OR INVOLVING CONSTRUCTION EMPLOYEES.

General

MOUNTING.

- No fire extinguisher may be allowed to rest on bare ground. (If used as portables, have them on suitable materials). All fire extinghishers shall be mounted or placed in holders off the ground. Extinguishers not exceeding 40 pounds should be mounted no higher than 60" and those exceeding 40 pounds, no higher than 40".
- Fire equipment or other emergency equipment, including fire doors, fire sprinklers, and hose boxes, will not be obstructed.
- Fire Watch. When setting up a hot work area, fire watch must be considered and responsible person identified on the permit. Flamables and combustibles must be removed and/or protected within a 35 foot radius of the hot work. A trained employee will be responsible for watching the work area and ensuring they are prepared to extinguish a fire. Fire watch activities will extend beyond the work period, no less than 30 minutes, but may extend up to 4 hours.

THE FOLLOWING IS TO ENSURE ALL EMPLOYEES KNOW HOW TO REPORT A FIRE:

- A phone listing the Fire Department will be provided in the construction office facilities or area. Project Supervision will periodically provide this information at Project Toolbox Talks and onsite project orientation.
- Most incipient type fires can be controlled by project personnel using fire extinguishers. Any employee discovering a fire should use an extinguisher if trained and comfortable and report to his or her nearest supervisor. LCS Project Supervision will determine the steps to be taken in alerting emergency responders and in controlling the fire.
- When calling for emergency services:
  - State your name.
  - Give the location of the fire.
  - Emergency responders should be directed to the area of the fire as outlined by the Site Specific Safety Plan,

END OF WORKDAY INSPECTION OF CONSTRUCTION FACILITIES. In order to decrease the potential of fire at the project, inspections will be made daily following the close of the day shift. The inspection shall be made by members of field supervision or their designee.

- These supervisors will tour their assigned areas, inspecting all construction buildings and work sites to ascertain that no open fires, smoldering sparks, potential fire hazards, exist. If fire hazards are discovered, the supervisor will take whatever action is necessary to control them.
- The inspection supervisor should recognize that their vigilance in detecting incipient fires will prevent the type of disaster which so frequently occurs in industry when fires are not discovered until they are beyond control.

Appendix A: Hot Work Permit

All temporary operations involving open flames or producing heat and/or sparks require a Hot Work Permit. This includes, but is not limited to, brazing, cutting, grinding, soldering, thawing, and welding.

INSTRUCTIONS FOR FIRE SAFETY SUPERVISOR

1. **Verify precautions listed at right (or do not proceed with the work).**
2. **Complete page 1 and retain in job files.**

DATE JOB NO.

NAME OF COMPANY PERFORMING HOT WORK

LOCATION/BUILDING & FLOOR (be specific)

DESCRIPTION OF WORK BEING PERFORMED

NAME OF PERSON DOING HOT WORK

The above location has been examined, the precautions checked on the Hot Work Checklist have been taken to prevent fire, and permission is authorized for this work.

SIGNED:
(Permit Authorizing Individual)

SIGNED:
(Person doing Hot Work)

SIGNED:
(Fire Watch)

TIME
STARTED: Date: _____ Time: _____ AM/PM

Date: ____ Time: _____ AM/PM

FINAL FIRE WATCH SIGNOFF & PERMIT CLOSURE
Work area and all adjacent areas to which sparks, and heat might spread were inspected during the fire watch

period of _____ hour(s) and were found fire safe.

SIGNED: _____
(Fire Watch)

SIGNED: _____
(Permit Authorizing Individual)

HOT WORK CHECKLIST	**OK**	**N/A**
• Sprinklers and hose streams in service/operable.	☐	☐
• Hot Work Equipment in good condition (e.g., power source, welding leads, torches, etc.).	☐	☐
• Multi-purpose fire extinguisher and/or water pump can.	☐	☐
REQUIREMENTS WITHIN 35 FEET OF WORK		
• Dust, lint, debris, flammable liquids, and oily deposits removed; floors swept clean.	☐	☐
• Explosive atmosphere in area eliminated.	☐	☐
• Combustible floors (e.g., wood, tile, carpeting) wet down, covered with damp sand or fire blankets.	☐	☐
• Remove flammable and combustible material where possible. Otherwise protect with fire blankets, guards, or metal shields.	☐	☐
• All wall and floor openings are covered.	☐	☐
• Walkways protected beneath hot work.	☐	☐
WORK ON WALLS OR CEILINGS		
• Combustibles moved away from other side of wall.	☐	☐
WORK IN CONFINED SPACES		
• Confined space cleaned of all combustibles (e.g., grease, oil, flammable vapors).	☐	☐
• Containers purged of flammable liquids/vapors.	☐	☐
• Follow confined space guidelines.	☐	☐
FIRE WATCH/HOT WORK AREA MONITORING		
• Fire watch will be provided during and for 30 minutes after work, including any coffee and lunch breaks.	☐	☐
• Fire watch is supplied with an extinguisher and/or water pump can, also making use of other extinguishers located throughout work area.	☐	☐
• Fire watch is trained in use of this equipment and familiar with location of sounding system.	☐	☐
• Fire watch may be required for opposite side of walls, above and below floors and ceilings.	☐	☐
OTHER PRECAUTIONS TAKEN _____	☐	

_____

_____

_____

LeChase Construction Services, LLC
Jobsite Safety Manual

Section 16 - Welding and Cutting

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Introduction

This policy follows the OSHA 1926 standard for welding and cutting operations in construction. References have been made throughout the document to the Compressed Gas Association and the American National Standards Institute for clarity or additional information as outlined by the OSHA standard.

Transporting, Moving, and Storing Compressed Gas Cylinders – (OSHA 1926.350 reference)

- Valve protection caps shall be in place and secured.
- When cylinders are hoisted, they shall be secured on a cradle, sling board, or ballet. They shall not be hoisted or transported by means of magnets or choker slings.
- Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dropped, struck, or permitted to strike each other violently.
- When cylinders are transported by powered vehicles, they shall be secured in a vertical position.
- Valve protection caps shall not be used for lifting cylinders from one vertical position to another. Bars shall not be used under valves or value protection caps to pry cylinders loose when frozen. Warm, not boiling, water shall be used to thaw cylinders loose.
- Unless cylinders are firmly secured on a special carrier intended for this purpose, regulators shall be removed and valve protection caps put in place before cylinders are moved.
- A suitable cylinder truck, chain, or other steadying device shall be used to keep cylinders from being knocked over while in use.
- When work is finished, when cylinders are empty, or when cylinders are moved at any time, the cylinder valve shall be closed.
- Compressed gas cylinders shall be secured in an upright position at all times except, if necessary, for short periods of time while cylinders are actually being hoisted or carried.
- Oxygen cylinders in storage shall be separated from fuel-gas cylinder or combustible materials (especially oil or grease), a minimum distance of 20 feet (6.1m) or by a noncombustible barrier at least 5 feet (1.5m) high having a fire resistance rating of at least one-half hour.
- Inside of buildings cylinders shall be stored in a well-protected, well-ventilated, dry location, at least 20 feet (6.1m) from highly combustible materials such as oil or excelsior. Cylinders should be stored in definitely assigned places away from elevators, stairs, or gangways. Assigned storage places shall be located where cylinders will not be knocked over or damaged by passing or falling objects, or subject to tampering by unauthorized persons. Cylinders shall not be kept in unventilated enclosures such as lockers and cupboards.
- The in-plant handling, storage, and utilization of all compressed gases in cylinders, portable tanks, rail tank cars, or motor vehicle cargo tanks shall be in accordance with Compressed Gas Association Pamphlet P-1-1965.

Placing Cylinders

- Cylinders shall be kept far enough away from the actual welding or cutting operations so that sparks, hot slag, or flame will not reach them. When this is impractical, fire resistant shields shall be provided.
- Cylinders shall be place where they cannot become part of an electrical circuit. Electrodes shall not be struck against a cylinder to strike an arc.
- Fuel gas cylinders shall be placed with valve end up whenever they are in use. They shall not be placed in a location where they would be subject to open flame, hot metal, or other sources of artificial heat.
- Cylinders containing oxygen or acetylene or other fuel gas shall not be taken into confined spaces.

Treatment of Cylinders

- Cylinders, whether full or empty, shall not be used as rollers or supports.
- No person other than the gas supplier shall attempt to mix gases in a cylinder. No one except the owner of the cylinder or person authorized by him, shall refill a cylinder. No one shall use a cylinder's contents for purposes other than those intended by the supplier. All cylinders used shall meet the Department of Transportation requirements published in 49 CFR Part 178, Subpart C, Specification for Cylinders.
- No damaged of defective cylinder shall be used.

Use of Fuel Gas

The employer shall thoroughly instruct employees in the safe use of fuel gas, as follows:

- Before a regulator to a cylinder valve is connected, the valve shall be opened slightly and closed immediately. (This action is generally termed "cracking" and is intended to clear the valve of dust or dirt intended to clear the valve of dust or dirt that might otherwise enter the regulator). The person cracking the valve shall stand to one side of the outlet, not in front of it. The valve of a fuel gas cylinder shall not be cracked where the gas would reach welding work, sparks, flame, or other possible sources of ignition.
- The cylinder valve shall always be opened slowly to prevent damage to the regulator. For quick closing, valves on fuel gas cylinders shall not be opened more than 1 ½ turns. When a special wrench is required, it shall be left in position on the stem of the valve while the cylinder is in use so that the fuel gas flow can be shut off quickly in case of an emergency. In the case of manifold or coupled cylinders, at least one such wrench shall always be available for immediate use. Nothing shall be places on top of a fuel gas cylinder when in use, which may damage the safety device or interfere with the quick closing of the valve.
- Fuel gas shall not be used from cylinders through torches or other devices which are equipped with shutoff valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.
- Before a regulator is removed from a cylinder valve, the cylinder valve shall always be closed and the gas released from the regulator.
- If, when the valve on a fuel gas cylinder is opened, there is found to be a leak around the valve stem, the valve shall be closed and the gland nut tightened. FI this action does not stop the leak, the use of the cylinder shall be disconnected, and it shall be properly tagged and removed from the work area. In the event that fuel gas should leak from the cylinder valve rather than from the valve

stem, and the gas cannot be shut off, the cylinder shall be properly tagged and removed from the work area. If a regulator attached to a cylinder valve will effectively stop a leak through the valve seat, the cylinder need not be removed from the work area.
- If a leak should develop at a fuse plug or other safety device, the cylinder shall be removed from the work area.

Fuel Gas and Oxygen Manifolds

- Fuel gas and oxygen manifolds shall bear the name of the substance they contain in letters at least one-inch high which shall be either painted on the manifold or on a sign permanently attached to it.
- Fuel gas and oxygen manifolds shall be placed in safe, well ventilated, and accessible locations. They shall not be located within enclosed spaces.
- Manifold hose connections, including both ends of the supply hose that leads to the manifold, shall be such that the hose cannot be interchanged between fuel gas and oxygen manifolds and supply header connections. Adapters shall not be used to permit the interchange of hose. Hose connection shall be kept free of grease and oil.
- When not in use, manifold and header hose connections shall be capped.
- Nothing shall be placed on top of a manifold, when in use, which will damage the manifold or interfere with the quick closing of the valves.

Hose

- Fuel gas hose and oxygen hose shall b easily distinguishable from one another. The contrast may be made by different colors or by surface characteristics readily distinguishable by the sense of touch. Oxygen and fuel gas hoses shall not be interchangeable. A single hose having more than one gas passage shall not be used.
- When parallel sections of oxygen and fuel gas hose are taped together, not more than four inches out of 12 inches shall be covered by tape.
- All hose in use carrying acetylene, oxygen, natural or manufactured fuel gas, or any gas or substance which may ignite or enter into combustion, or be in any way harmful to employees, shall be inspected at the beginning of each working shift. Defective hose shall be removed from service.
- Hose which has been subject to flashback, or which shows evidence of severe wear or damage, shall be tested to twice the normal pressure to which it is subject, but in no case than 300 psi. Defective hose or hose in doubtful condition shall not be used.
- Hose couplings shall be of the type that cannot be unlocked or disconnected by means of a straight pull without rotary motion.
- Boxes used for the storage of gas hose shall be ventilated.
- Hoses, cables, and other equipment shall be kept clear of passageways, ladders and stairs.

Torches

- Clogged torch tip openings shall be cleaned with suitable cleaning wires, drills, or other devices designed for such purpose.
- Torches in use shall be inspected at the beginning of each working shift for leaking shutoff valves, hose couplings, and top connections. Defective torches shall not be used.

- Torches shall be lighted by friction lighters or other approved devices, and not by matches or from hot work.

Regulators and Gauges

Oxygen and fuel gas pressure regulators, including their related gauges, shall be in proper working order while in use.

Oil and Grease Hazards

Oxygen cylinders and fittings shall be kept away from oil or grease. Cylinders, cylinder caps and valves, couplings, regulators, hose, and apparatus shall be kept free from oil or greasy substances and shall not be handled with oily hands or gloves. Oxygen shall not be directed at oily surfaces, greasy clothes, or within a fuel oil or other storage tank or vessel.

Additional Rules

For additional details not covered in this subpart, applicable technical portions of American National Standards Institute, Z49.1-1967, Safety in Welding and Cutting, shall apply.

Arc Welding and Cutting – (OSHA 1926.351 reference)

Manual Electrode Holders

- Only manual electrode holders which are specifically designed for arc welding and cutting, and are of a capacity of safety handling the maximum rated current required by the electrodes shall be used.
- Any current-carrying parts passing through the portion of the holder which the arc welder or cutter grips in his hand, and the outer surfaces of the jaws of the holder, shall be fully insulated against the maximum voltage encountered to ground.

Welding Cables and Connectors

- All arc welding and cutting cables shall be of the completely insulated, flexible type, capable of handling the maximum current requirements of the work in progress, taking into account the duty cycle under which the arc welder or cutter is working.
- Only cable free from repair or splices for a minimum distance of 10 feet from the cable end to which the electrode holder is connected shall be used, except that cables with standard insulated connectors or with splices whose insulating quality is equal to that of the cable are permitted.
- When it becomes necessary to connect or splice lengths of cable one to another, substantial insulated connectors of a capacity at least equivalent to that of the cable shall be used. If connections are effected by means of cable lugs, they shall be securely fastened together to give good electrical contact and the exposed metal parts of the lugs shall be completely insulated.
- Cable in need of repair shall not be used. When a cable other than the cable lead referred to in paragraph (b)(2) of this section, becomes worn to the extent of exposing bare conductors, the portion thus exposed shall be protected by means of rubber and friction tape or other equivalent insulation.

Ground Returns and Machine Grounding

- A ground return cable shall have a safe current carrying capacity equal to or exceeding the specified maximum output capacity of the arc welding or cutting until which it services. When a single ground return cable services more than one unit, its safe current- carrying capacity shall equal or exceed the total specified maximum output capacities of all the units which it services.
- Pipelines containing gases or flammable liquids, or conduits containing electrical circuits, shall not be used as a ground return. For welding on natural gas pipelines, the technical portions of regulations issued by the Department of Transportation, Office of Pipeline Safety, 49 CFR Part 192, Minimum Federal Safety Standards for Gas Pipelines, shall apply.
- When a structure or pipeline is employed as a ground return circuit, it shall be determined that the required electrical contact exists at all joints. The generation of an arc, sparks, or heat at any point shall cause rejection of the structures as a ground circuit.
- When a structure or pipeline is continuously employed as a ground return circuit, all joints shall be bonded, and periodic inspections shall be conducted to ensure that no condition of electrolysis or fire hazard exists by virtue of such use.
- The frames of all arc welding and cutting machines shall be grounded either through a third wire in the cable containing the circuit conductor or through a separate wire which is grounded at the source of the current. Grounding circuits, other than by means of the structure, shall be checked to ensure that the circuit between the ground and the grounded power conductor has resistance low enough to permit sufficient current to flow to cause the fuse or circuit breaker to interrupt the current.
- All ground connections shall be inspected to ensure that they are mechanically strong and electronically adequate for the required current.

Operating Instructions

- When electrode holders are to be left unattended, the electrodes shall be removed and the holders shall be so placed or protected that they cannot make electrical contact with employees or conducting objects.
- Hot electrode holders shall not be dipped in water; to do so, may expose the arc welder or cutter to electric shock.
- When the arc welder or cutter has occasion to leave his work or to stop work for any appreciable length of time, or when the arc welding or cutting machine is to be moved, the power supply switch to the equipment shall be opened.
- Any faulty or defective equipment shall be reported to the supervisor.

Shielding

Whenever practicable, all arc welding and cutting operations shall be shielded by non- combustible or flame-proof screens which will protect employees and other persons working in the vicinity from the direct rays of the arc.

Fire Prevention – (OSHA 1926.352 reference)

- When practical, objects to be welded, cut, or heated shall be moved to a designated safe location or, if the objects to be welded, cut, or heated cannot be readily moved, all moveable fire hazards in the vicinity shall be taken to a safe place or otherwise protected.
- If the object to be welded, cut or heated cannot be moved, and if all the fire hazards cannot be removed, positive means shall be taken to confine the heat, sparks, and slag, and to protect the immovable fire hazards from them.
- No welding, cutting, or heating shall be done where the application of flammable paints, or the presence of other flammable compounds, or heavy dust concentrations, create a hazard.
- Suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use.
- When the welding, cutting, or heating operation is such that normal fire prevention precautions are not sufficient, additional personnel shall be assigned to guard against fire while the actual welding, cutting, or heating operation is being performed, and for a sufficient period of time after completion of the work to ensure that no possibility of fire exists. Such personnel shall be instructed as to the specific anticipated fire hazards and how the firefighting equipment provided is to be used.
- When welding, cutting, or heating is performed on walls, floors, and ceilings, since direct penetration of sparks or heat transfer may introduce a fire hazard to an adjacent area, the same precautions shall be taken on the opposite side as are taken on the side on which the welding is being performed.
- For the elimination of possible fire in enclosed spaces as a result of gas escaping through leaking or improperly closed torch valves, the gas supply to the torch shall be positively shut off at some point outside the enclosed space whenever the torch is not to be used or whenever the torch if left unattended for a substantial period of time, such as during the lunch period. Overnight and at the change of shifts, the torch and hose shall be removed from the confined space. Open end fuel gas and oxygen hoses shall be immediately removed for enclosed spaces when they are disconnected from the torch or other gas- consuming device.
- Except when the contents are being removed or transferred, drums pails, and other containers which contain or have contained flammable liquids shall be kept closed. Empty containers shall be removed to a safe area apart from hot work operations or open flames.
- Drums, containers, or hollow structures which have contained toxic or flammable substances shall, before welding, cutting, or heating is undertaken on them, either be filled with water or thoroughly cleaned of such substances and ventilated and tested. For welding, cutting, and heating on steel pipelines containing natural gas, the pertinent portions of regulations issued by the Department of Transportation, Office of Pipeline Safety, 49 CFR Part 192, Minimum Federal Safety Standards for Gas Pipelines, shall apply.
- Before heat is applied to a drum, container, or hollow structure, a vent or opening shall be provided for the release of any built-up pressure during the application of heat.

Ventilation and Protection in Welding, Cutting, and Heating - (OSHA 1926.353 reference)

Mechanical Ventilation

For purposes of this section, mechanical ventilation shall meet the following requirements:

- Mechanical ventilation shall consist of either general mechanical ventilation systems or local exhaust systems.
- General mechanical ventilation shall be of sufficient capacity and so arranged as to produce the number of air changes necessary to maintain welding fumes and smoke within safe limits.
- Local exhaust ventilation shall consist of freely movable hoods intended to be placed by the welder or burner as close as practicable to the work. This system shall be of sufficient capacity and so arranged as to remove fumes and smoke at the source and keep the concentration of them in the breathing zone within safe limits.
- Contaminated air exhausted from a working space shall be discharged into the open air or otherwise clear of the source of intake air.
- All air replacing that is withdrawn shall be clean and breathable.
- Oxygen shall not be used for ventilation purposes, comfort cooling, blowing dust from clothing, or for cleaning the work area.

Welding, Cutting, and Heating in Confined Spaces

- Except as provided inthis section, either general mechanical or local exhaust ventilation meeting the requirements of the Mechanical Ventilation section, shall be provided whenever welding, cutting, or heating is performed in a confined space.
- When sufficient ventilation cannot be obtained without blocking the means of access, employees in the confined space shall be protected by air-line respirators and an employee on the outside of such a confined space shall be assigned to maintain communication with those working within it and to aid them in an emergency.
- Lifelines. Where a welder must enter a confined space through a manhole or other small opening, means shall be provided for quickly removing him in case of emergency. When safety belts and lifelines are used for this purpose, they shall be so attached to the welders' body that his body cannot be jammed in a small exit opening. An attendant with a pre-planned rescue procedure shall be stationed outside to observe the welder at all times and be capable of putting rescue operations into effect.

Welding, Cutting, or Heating of Metals of Toxic Significance

- Welding, cutting, or heating in any enclosed spaces involving the metals specified in this subparagraph shall be performed with either general mechanical or local exhaust ventilation.
  - Zinc-bearing base or filler metals or metals coated with zinc-bearing materials
  - Lead base metals
  - Cadmium-bearing filler materials
  - Chromium-bearing metals or metals coated with chromium-bearing materials
- Welding, cutting, or heating in any enclosed spaces involving the metals specified in this subparagraph shall be performed with local exhaust ventilation, or employees shall be protected by air line respirators.
  - Metals containing lead, other than as an impurity, or metals coated with lead- bearing materials
  - Cadmium-bearing or cadmium-coated base metals

  - Metals coated with mercury-bearing metals
  - Beryllium-containing base or filler metals. Because of its high toxicity, work involving beryllium shall be done with both local exhaust ventilation and air line respirators.

- Employees performing such operations in the open air shall be protected by filter-type respirators, except that employees performing such operations on beryllium-containing base of filler metals shall be protected by air-line respirators.
- Other employees exposed to the same atmosphere as the welders or burners shall be protected in the same manner as the welder or burner.

Inert Gas Metal-Arc Welding

Since the inert gas metal-arc welding process involves the production of ultra-violet radiation of intensities of 5 to 30 times that produced during shielded metal-arc welding, the decomposition of chlorinated solvents by ultraviolet rays, and the liberation of toxic fumes and gases, employees shall not be permitted to engage in, or be exposed to the process until the following special precautions have been taken:

- The use of chlorinated solvents shall be kept at least 200 feet, unless shielded, from the exposed arc, and surfaces prepared with chlorinated solvents shall be thoroughly dry before welding is permitted on such surfaces.
- Employees in the area not protected from the arc by screening shall be protected by filter lenses. When two or more welders are exposed to each other's arc, filter lens goggles of a suitable type shall be worn under welding helmets. Hand shields to protect the welder against flashes and radiant energy shall be used when either the helmet is lifted or the shield is removed.
- Welders and other employees who are exposed to radiation shall be suitably protected so that the skin is covered completely to prevent burns and other damage by ultraviolet rays. Welding helmets and hand shields shall be free of leaks and opening, and free of highly reflective surfaces.
- When inert-gas metal-arc welding is being performed on stainless steel, workers must be protected dangerous concentrations of nitrogen dioxide.

General Welding, Cutting, and Heating

- Welding, cutting, and heating, not involving conditions or material described in this section, may normally be done without mechanical ventilation or respiratory protective equipment, but where, because of unusual physical or atmospheric conditions, an unsafe accumulation of contaminants exists, suitable mechanical ventilation or respiratory protective equipment shall be provided.
- Employees performing any type of welding, cutting, or heating shall be protected by suitable eye protective equipment.

Welding, Cutting, and Heating in Way of Preservative Coatings – (OSHA 1926.354 reference)

- Before welding, cutting, or heating is commenced on any surface covered by a preservative coating whose flammability is not known, a test shall be made by a competent person to determine its flammability. Preservation coatings shall be considered to be highly flammable when scrapings burn with extreme rapidity.

- Precautions shall be taken to prevent ignition of highly flammable hardened preservative coatings. When coatings are determined to be highly flammable, they shall be stripped from the area to be heated to prevent ignition.

Protection Against Toxic Preservative Coatings

- In enclosed spaces, all surfaces covered with toxic preservatives shall be stripped of all toxic coatings for a distance of at least 4 inches from the area of heat application, or the employees shall be protected by airline respirators.
- In the open air, employees shall be protected by a respirator.
- The preservative coatings shall be removed a sufficient distance from the area to be heated to ensure that the temperature of the non-stripped metal will not be appreciably raised. Artificial cooling of the metal surrounding the heating area may be used to limit the size of the area required to be cleaned.

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Section 17 - Fall Protection and Prevention Policy

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Purpose

This procedure/practice establishes the requirements for selecting, using, and inspecting fall protection systems as outlined in OSHA 1926.502, Fall Protection.

Scope

The following policy applies to all LeChase Construction, QSI, and Conifer-LeChase employees, affiliate companies, subcontractors, vendors, and visitors.

Fall Protection Requirement

LeChase is committed to a program of 100% continuous fall protection. This procedure applies to LeChase, QSI, all LeChase affiliate companies, and all subcontractor employees on LeChase projects. The requirement in this procedure also applies to structural ironworkers and roofers. LeChase requires 100% fall protection whenever workers are exposed to fall hazards of six feet (6') or greater unless client requirements are more stringent. Contractors, subcontractors, vendors, or other third-party individuals will take all feasible measures to eliminate, prevent, and control fall hazards. When a fall hazard has been identified and cannot be totally eliminated, other effective measures of fall protection will be implemented, to include Personal Fall Arrest Systems (PFAS).

Definitions

Anchor Point	A secure point of attachment for lifelines, lanyards, or deceleration devices. An anchorage must be capable of supporting a minimum dead weight of 5,000 pounds for each person attached to it.
Body Harness	Straps which may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest, and shoulders with means for attaching it to other components of a personal fall arrest system.
Competent Person	One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and has authorization to take prompt corrective measures to eliminate those conditions.
Connector	A device which is used to connect parts of the personal fall arrest system and positioning device system together. This may be an independent component of the system, such as a carabineer, or it may be an integral component of part of the system (such as a buckle or dee-ring sewn

	into a body belt or body harness, or a snap-hook spliced or sewn into a lanyard or self-retracting lanyard).
Floor Opening Covers	The construction of floor opening covers may be of any material that is capable of supporting twice the intended load. Covers projecting not more than 1 inch above the floor level may be used providing all edges are chamfered to an angle with the horizontal of not over 30 degrees. All hinges, handles, bolts, or other parts will set flush with the floor or cover surface.
Guardrail System	A barrier secured to uprights and erected to prevent employees from falling to lower levels.
Hole	A gap or void 2 inches or more in its least dimension in a floor, roof, or other walking/working surface.
Lanyard	A rope (nylon or steel cable) capable of supporting one employee. A lanyard generally has a connector at each end for connecting the body harness to a deceleration device, lifeline, or anchorage.
Lifeline	A component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline) or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.
Low-Slope Roof	A roof having a slope less than or equal to 4 in 12 (vertical to horizontal).
Lower Levels	Those areas or surfaces to which an employee can fall. Such areas or surfaces include, but are not limited to: ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, water, equipment, structures, or portions thereof.
Personal Fall Arrest System (PFAS)	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 combinations of these. NOTE: The use of a body belt for fall arrest is prohibited.
Qualified Person	One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully

	demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.
Roofing Work	The hoisting, storage, application, and removal of roofing materials and equipment, including related insulation, sheet metal, and vapor barrier work, but not including the construction of the roof deck.
Safety Nets	A net used to protect people from injury after falling from heights by limiting the distance they fall and deflecting to dissipate the impact energy. The term also refers to devices for arresting falling or flying objects for the safety of people beyond or below the net.
Self-Retracting Lifeline/Lanyard or Inertia Reel	A deceleration device containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.
Static Line or Catenary Line	A cable or rope strung horizontally and/or vertically from one substantial object to another, providing a means of traveling between those two objects while maintaining fall protection between those objects.
Steep Roof	A roof having a slope greater than 4 in 12 (vertical to horizontal).
Toe-boards	A low protective barrier that will prevent the fall of materials and equipment to lower levels and provide protection from falls for personnel.
Wall Opening	An opening at least 30 inches high and 18 inches wide, in any wall or partition, through which employees may fall such as a yard-arm doorway or chute opening.
Warning Line System	A barrier erected on a roof or leading edge to warn employees that they are approaching an unprotected roof or side edge.

Procedures

General Requirements

To ensure employees are not inadvertently exposed to fall hazards, each work area must

be evaluated to confirm engineering controls are in place to prevent exposure to fall hazards 6 feet or more. Engineered barriers (guardrail systems, approved work platforms, scaffolds, or vehicle-mounted elevated work platforms) will be used wherever feasible to eliminate potential fall exposure.

Where engineered barriers/controls are not feasible, fall protection — in the form of PFAS, safety nets, etc. — is required in the following circumstances:

- In elevated locations 6 feet in height or more where there is no other means of fall protection.
- On stages, floats, and any other type of suspended scaffolding (refer to Section 6)
- On scaffolds with incomplete decking or guardrails (refer to Section 6)
- On sloping roofs (refer to Section 9)
- Near all leading edges of floors or roofs where there are no protective guardrails.
- When removing/replacing floor planks, hole covers, or grating from the last panel of a temporary floor
- In precarious positions at any elevation (less than 6 feet)
- In areas exposed to protruding, unprotected objects or reinforcing steel at any height
- In all scissor lifts to manufacturer-provided anchor points (Scissor Lift's must anchor points)
- In crane-suspended work platforms (refer to Section 8)
- Around floor openings, roofs, ceiling, and other surfaces where there is a fall- through hazard

The requirements for the use of PFAS in this practice do **not** apply to the following:

- Use of portable/extension ladders for access and egress to landings (distance cannot exceed 24 feet
- Accessing tanker trucks and servicing large mobile equipment
- Accessing and unloading Flatbed trucks (when fall arrest systems or PFAS's create a greater hazard)

The need for PFAS will be documented in accordance with Appendix A: Fall Protection Documentation Requirements. A Fall Protection Work Plan, Appendix B (or equivalent), must be developed when using warning-line systems and other unconventional means/processes when conventional means of fall protection has been deemed infeasible or would create a greater hazard by Regional Safety Manager and SBU Lead.

Employees required to wear PFAS equipment will wear no less than a Class III full-body harness with a deceleration device (such as a shock-absorbing lanyard or inertia reel) attached to suitable attachment point. Lanyards used in PFAS must be designed and used to limit a person's fall to no more than 6 feet.

Note: For "power transmission lineman" activities, approved body belts with straps may be used in lieu of a full-body harness/deceleration device.

Note: For positioning devices (sometimes called fall restraint devices), refer to Section 10.0.

The lanyard or reel must be attached to a suitable anchorage at all times while the person is in an exposed position. Most times, this requirement may necessitate the use of 2 lanyards so that one can be left attached while the second is being moved to the next anchorage.

PFAS equipment exposed to impact loading will be immediately removed from service, tagged out of service, and recertified (documented by the manufacturer). Contact your Regional Safety Manager for additional instructions.

Lanyards and other parts of PFAS shall not be used for rigging or hoisting any material or supplies at any time.

Designation of Competent and Qualified Persons must be documented and maintained by LeChase Construction and the applicable subcontractor.

Engineered Controls

Guardrail System

Guardrail systems will be provided as the primary fall prevention system for walking/working surfaces, unless the use of a guardrail system is infeasible. Where guardrail systems are infeasible, fall protection will be worn.

Work areas that have open-sided floors, floor openings, platforms, or runways that present a fall hazard of 6 feet or more to a lower level will be protected by a guardrail system. If a guardrail system is infeasible, fall protection will be worn.

A guardrail system is an edge protection rail system with the top edge height of top rails at 42 inches plus or minus 3 inches above the walking/working level. A top rail must be capable of withstanding without failure a force of at least 200 pounds applied within 2 inches of the top edge in any outward or downward direction (not to go below 39 inches) at any point along the top edge. A mid-rail or mesh panel and a fender (toe) board must be securely fixed and designed to withstand, without failure, a force of at least 150 pounds applied in any downward or outward direction at any point along the mid-rail or other member.

Guardrail systems must block access to the fall hazard except at ladders and stairs (a swing gate will be placed across a ladder opening unless the opening is barricaded or offset).

Permanent Fixed Platform/Walkway

A permanently engineered standard platform with handrails attached to a permanent structure (such as a work platform or access way) may be used.

Safety Nets

- Safety nets will be inspected and installed by a competent person.
- Safety nets shall be installed as close to the walking/working surface, but no more than 30-feet below.
- Safety net will be installed in accordance to 1926.502(c).

Permanent Industrial Fall Arrest System

An engineer-designed permanent system attached to suitable anchor points — in accordance with applicable federal, state, or in-country standards — can be used (such as steel cable static lines, steel cable ladder climbing systems, and rigid rail ladder-climbing systems).

Personal Fall Arrest Systems (PFAS)

Safety harness and lanyard assemblies are capable of withstanding a tensile loading of 5,000 pounds force without cracking, breaking, or taking a permanent deformation.

A PFAS must be used if working outside approved work platforms, guardrail systems, or controlled access zones (warning lines).

A snap hook will only be attached to another connector that is part of the PFAS; do not hook the connector back onto the lanyard unless the lanyard is approved for that application. Back-hooking and the tying of knots in a lanyard are not permitted.

Each harness and lanyard must have a label that displays the manufacturing date. If the date is more than 5 years from the date placed in service on the inspection tag, the harness or lanyard must be destroyed and a new one obtained.

When designing individual anchorage points for fall protection devices, the weight factor for employees will be based on 310 pounds, including tools.

The attachment point of a body harness must always be in the center of the wearer's back between the shoulder blades.

PFAS components must be used only for the employee's protection and not for hoisting materials unless approved by the manufacturer for that purpose.

If employees are exposed to a fall hazard when working near a floor or wall opening to handle materials, they must be protected via PFAS or approved fall restraint system.

Fall protection will be designed into new construction in accordance with Appendix B. Prompt rescue of fall victims, or a means for employees to rescue themselves, must be provided in the fall protection work/safety plan.

Elevated work requiring the use of fall protection will be stopped whenever inclement weather conditions are present (such as snow, ice, thunderstorms, and winds greater than 30 miles per hour.

Lanyards

Must meet the following requirements:

- Maximum length of a lanyard is 6 feet in length, and equipped with self-locking hooks on each end.
- The lanyard must be equipped with shock absorber.
- Snap hooks must be of a double-locking design to prevent accidental disengagement. When not in use, the lanyard must be secured and attached to the harness to prevent tripping or snagging.

- The lanyard must not be dragged.
- The lanyard must not be hooked back into itself unless designed for that purpose.
- Knots must not be tied in a lanyard. (This will reduce the strength of the lanyard).

Energy Absorbers (Personal/Industrial)

Any mechanism, such as a rope grab, rip-stitch lanyard, specially-woven lanyard, tearing or deforming lanyards, and automatic self-retracting lifelines/lanyards, that serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.

Retractable Lifelines

A retractable lifeline is a fall-arresting device used in conjunction with other components of a fall-arrest system.

A properly inspected and maintained retractable lifeline, when correctly installed and used within the fall-arrest system, will automatically stop a person's descent a short distance after the onset of an accidental fall.

Retractable lifelines should be considered for use when working in areas such as roofs and scaffolds, tanks, towers, vessels, and manholes. Also, retractable lifelines should be considered when climbing such equipment as vertical fixed ladders and telescoping derricks.

Before using a retractable lifeline, the supervisor and/or the user must address the following:

- Has the user been trained to use a retractable lifeline correctly?
- Is retractable lifeline being used in conjunction with a complete fall-arrest system?
- Is the equipment under a regular maintenance program?

Other considerations include:

- DO NOT USE ROPE.
- Equipment must be hung up or placed loosely in a clean, dry area when storing.

Horizontal and Vertical Lifeline

Horizontal lifelines must be installed and used according to manufacturer's specifications. The following guidelines should also be followed:

- Softeners must be used where lifelines contact sharp edges such as beam flanges.
- Temporary lifelines must be removed at the completion of a job.
- A vertical lifeline will be used by only 1 employee at a time.
- Anchor points, connectors, and other system components must be capable of safely supporting 1 employee falling 6 feet.

Rope Grab

The rope grab must be used with a rope that meets or exceeds the following:

- Rope grab size must match rope size.

- Minimum diameter of 5/8 inch rope.
- Made of polypropylene, nylon, or polyester.
- Minimum tensile strength of 5,000 pounds.

Work Practices

The following are special requirements associated with working at elevated locations or while using fall-arresting equipment:

- Employees must avoid climbing on equipment such as pumps, exchangers, valve hand wheels, transformers, electric motors, handrails, structures, or any other facilities not specifically designed for climbing.
- Climbing on conduit, cable trays, or other similar equipment is not permitted.
- Climbing of vertical beams is not permitted.
- Employees must not climb a ladder while another employee is above or below on the same ladder.

Anchorages

Anchor points for lanyards/harnesses and vertical lifelines must meet the following:

- Must maintain a safety factor of 2.
- Be able to safely support 1 person falling 6 feet.
- Be installed in a manner that prevents accidental disengagement from support structures.
- Be inspected and documented by a Competent Person on a periodic basis.
- Be placed where attachment and detachment can be done without causing loss of balance.
- Be placed above shoulder height to reduce fall distance.
- Be free of sharp edges to avoid cutting the lanyard.

Anchorages for fall arrest will be designed to withstand a tensile force of 5,000 pounds per employee.

Anchorages will be approved by a Competent Person to meet the strength requirements, or a recognized typical structural member as shown in Appendix C will be used.

Anchorages will be designed for fall restraint to withstand a tensile force of 4 times the intended load (such as the weight of the employee plus tools).

Do not make the anchorage part of the work surface; locate it to start arresting the fall before 6 feet and to prevent falling or swinging into other structural members or equipment.

Note: The potential for injury is minimized when an anchorage is selected for the shortest free-fall distance possible, either by selection of the anchorage itself or by using the shortest lanyard possible.

Working from Ladders

When working from extension ladders, fall protection must be used (when appropriate) whenever working at heights of 6 feet or above, as measured from the ladder base to the employee's feet.

All Extension Ladders are required to be tied off at the top and must extend three feet (3') above the landing surface at all times. The bottom of the Extension Ladders will be toe- kicked or staked to prevent accidental displacement.

Exception: Proper use of an approved and inspected extension ladder (up to 24 feet) for movement between levels (not as a working platform) for access and egress only.

Employees may work from step ladders up to 12 feet in height without a PFAS only when all of the following criteria are met:

- The step ladder is being used in the manner in which it was designed and intended for use. (Spreaders are fully extended and locked, the ladder is on a solid level surface, and both feet remain on the ladder while working).
- The employee is not exposed to an immediate or secondary fall hazard when climbing up or working off a step ladder to a desired height without the probability of going over a handrail, to include but not limited to: a duct shaft, elevator shaft, stairwell, or leading edge.
- Work can be performed while staying inside the ladder bracing/sides. (Employee will remain inside the area between the vertical sides where their belt buckle would not travel beyond the vertical sides).
- Employees are not working with heavy or bulky loads.
- Both feet remain on the ladder while performing the task.

Scaffolds

Employees working from swinging scaffolds or boatswain's chairs must use PFAS where the lanyard or lifeline is attached to an attachment point independent from the scaffold or chair.

Employees involved in the erection or disassembly of a scaffold will use fall protection when working at or above 6 feet. If scaffold members are to be used as attachment points for PFAS:

- Each member must be approved by the Competent Person as meeting the 5000-pound attachment point criteria, and
- The scaffold will be adequately secured.

Refer to Scaffold Procedure.

Mobile or Aerial Work Platforms

Employees working from elevated work platforms or aerial lifts must wear a Personal Fall Restraint System (PFRS) attached to a designated anchorage point on the platform (according to the manufacturer's instructions).

Note: PFRS are required in all scissor lifts with 100% tie off to manufacturer provided anchor points.

When exiting a work platform or aerial lift at heights, employees will maintain 100% continuous fall protection.

Crane Suspended Platforms

Employees working from or riding a crane-suspended platform must use a PFAS attached to an independent source (such as a support cable attached above the block or headache ball).

When exiting or entering a suspended platform, employees will use continuous fall protection when appropriate.

Refer to Cranes and Rigging Procedure.

Working on Roofs

Employees engaged in roofing activities, with unprotected sides and edges 6 feet or more above lower levels or where “fall through” hazards exist will be protected by fall protection systems.

For steep-sloped roofs (slope of more than 4 in 12) that have unprotected edges, employees will be protected by either a guardrail system or PFAS.

When performing roofing work on low-sloped roofs (slope of 4 in 12 or less), employees working within 6 feet of an unprotected edge are to be protected by a PFAS, guardrail system PFRS, or other approved control system.

Alternatives to Fall Protection Systems

When conventional fall protection systems are infeasible or create greater hazard, a Fall Protection Work Plan will address the reasons for exceptions and any proposed alternative fall protection systems or measures (such as warning-line systems or controlled access zones) will be used. All alternative fall protection plans must be reviewed and approved by RSM and SBU Lead.

When employees are working on a low-sloped roof, and they are not within 15 feet of a fall, a warning line must be erected to delineate the unprotected edges of the roof.

Safety Monitoring Systems

Safety Monitors and Monitoring Systems are prohibited unless contractually approved or approved in writing in advance by the Superintendent, SBU Lead, and LeChase Regional Safety Manager.

Warning Lines

A warning-line system, as outlined in 1926.502(f), will consist of a wire rope, cable, or chain with supporting posts, visibly marked every 6 feet, erected 43 to 39 inches above the walking/working surface, and not less than 6 feet from the roof’s edge when mechanical equipment is not being used. When mechanical equipment is used, the warning line shall be erected not less than 6 feet from roof

edge parallel to the direction of the mechanical equipment operation and not less than 10 feet from the roof edge which is perpendicular to the direction of the mechanical equipment operation. The warning line and posts must be capable of resisting, without tipping over, at least 16 pounds force applied horizontally against the post.

The warning line will be attached at each post in such a way that pulling on the line between posts does not result in the line going slack in an adjacent section.

Points of access, material handling areas, and hoisting areas will be connected to the work area by an access path that is formed by 2 warning lines.

Employees will not be allowed to enter the area between the warning line and the roof's edge. Any work in this work area will require a PFAS or other appropriate measure.

Positioning Device (Fall Restraint)

Positioning device systems will be allowed only if they conform to the following requirements:

- Positioning devices are rigged so that an employee cannot free fall more than 2 feet.
- Positioning devices are secured to an anchorage capable of supporting at least 3,000 pounds.
- Connectors are drop-forged, pressed or formed steel, or made of equivalent materials.
- Connectors have a corrosion-resistant finish, and all surfaces and edges are smooth to prevent damage to interfacing parts of the system.
- Connecting assemblies have a minimum tensile strength of 5,000 pounds.
- Dee-rings and snap hooks are proof-tested to a minimum tensile load of 3,600 pounds without cracking, breaking, or taking permanent deformation.
- Snaphooks are of a locking type designed and used to prevent disengagement of the snaphook by the contact of the snaphook keeper by the connected member.
- Unless the snaphook is a locking type and designed for the following connections, snaphooks may not be engaged directly to webbing, rope or wire rope; to each other; to a dee-ring to which another snaphook or other connector is attached; to a horizontal lifeline; or to any object that is incompatibly shaped or dimensioned in relation to the snaphook such that unintentional disengagement could occur by the connected object being able to depress the snaphook keeper and release itself.
- Positioning device systems must be inspected before each use for wear, damage, and other deterioration and defective components must be removed from service.
- Body belts (allowed for use in positioning device systems and power transmission lineman activities only) must be used only for employee positioning/protection and not to hoist materials.

Walking/Working Surfaces

Wall openings and chutes where there is a drop of 6 feet or more must be properly guarded to prevent falls. A toe-board or equivalent protection must be provided where there is exposure below to falling materials.

Window wall openings at a stairway landing, floor, platform, or balcony, where there is a drop of 6 feet or more, and where the bottom of the opening is less than 3 feet above the platform or landing must be

guarded. If the window opening is below the landing or platform, a standard toe-board must be provided.

Open-sided floors or platforms 6 feet or more above the adjacent floor or ground level must be guarded on all open sides by a standard railing or the equivalent, except where there is an entrance to a ramp, stairway, or fixed ladder.

A stairway or ladder shall be provided at all personnel points of access where there is a break in elevation of 19 inches or more, and no ramp, runway, sloped embankment, or personnel hoist is provided.

Stairways

Stairs, ladders, or ramps will be provided for elevated areas used on a routine basis.

Handrails will be provided for stairs with 4 or more risers or those over 30 inches high. A landing will be provided where doors or gates open directly onto a stairway.

Floor and Roof Strength

The facility landlord must confirm that floors have the structural strength to support the intended work activities and equipment or storage anticipated for the area.

Fixed load capacity signs will be securely posted on elevated floors or storage areas and must be visible to personnel. Posted load capacities must not be exceeded.

Note: The area design load limit must be posted in areas where the load amount and location are changing, such as in storage areas on elevated floors or above basements. Grade or slab construction does not require posting floor-loading limits.

Ensure that the roof is strong enough to support the intended work activities and equipment use anticipated before the roof becomes a walking/working surface.

Floor Holes

Refer to Barricades, and Signs Procedure.

Protection from Falling Objects

Employees working below another work area must inform the employees above of their presence. Should tools and equipment be raised or lowered to the upper work area, this work will be performed by crane or be raised and lowered by hand using a rope (minimum
inches diameter) with the tools and equipment securely tied. These lifting areas will be barricaded to prevent unintentional access beneath the suspended load.

Employees will be protected from objects falling from overhead work by wearing hard hats and using one of the following measures:

- Barricading.
- Use of toeboards, screens, or mesh on the guardrail system to keep small or unstable materials from falling to the lower work surface.
- Erection of a canopy over the hazard area that is capable of withstanding the force of any material that might fall, and set material back from the edge.
- Keeping tools and equipment secured or in buckets/pouches.

Equipment Inspection and Testing

Pre-use and periodic inspections of fall protection equipment will be performed by a Competent Person. See Appendix C.

Training

A Competent Person will train all employees who may be exposed to fall hazards. Training will be documented and available on-site for verification by LeChasemanagement.

Training includes (at least) the following topics:

- General requirements of this practice
- Recognition of fall hazards
- Nature of fall hazards
- Correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used
- Use and operations of guardrail systems, PFAS, safety net systems, warning-line systems, safety monitoring systems, controlled access zones, and other protection used
- Proper anchoring and attachment techniques
- Limitations on use of mechanical equipment during work on low-sloped roofs
- Correct procedures for handling and storage of equipment and materials, and the erection of overhead protection
- Role of employees in fall protection work plans
- Rescue considerations
- Role of each employee in safety monitoring system (when in use)

Supporting Documentation

- Appendix A: Fall Protection Documentation Requirements
- Appendix B: Fall Protection Work Plan
- Appendix C: Periodic Inspections by Competent Person

Appendix A: Fall Protection Documentation Requirements

An approved procedure, a Fall Protection Work Plan, or an equivalent product is required to identify the fall hazards and the controls used to minimize the risk of injury from hazards.

Note: A THA should not be used as the sole planning document for fall protection hazards and controls.

One of these documents must be completed for employees using personal fall arrest systems (PFAS) while working on walking/working surfaces where guardrail systems do not exist for heights 6 feet or more above a lower work surface.

The priority of controls for protecting employees is as follows: (1) guardrail system, (2) powered man lifts, (3) scaffolds or other access means, and (4) alternate fall protection systems.

Note: Risk must be balanced in applying this program. For example, if installing a guardrail system or erecting a scaffold is a higher risk and the job is a short-duration job for which a ladder can be used safely, then a ladder may be an acceptable control. Contact the Regional Safety Representative for guidance on any question.

The approved document must address the concerns and include the appropriate controls as indicated below:

1. Identifies fall hazards in the work area (including hazards of falling or materials falling onto employees).
2. Describes the method used for fall arrest or fall restraint.
3. Describes the method of providing overhead protection for employees who may be in, or pass through, the area below the worksite.
4. Unless traditional anchorage points are to be utilized, approval of the anchorage(s) by a Qualified Person is annotated and described.
5. Describes the method for assembly, maintenance, inspection, and disassembly of the fall protection systems.
6. Describes the method for handling, storage, and securing of tools and materials.
7. Describes the method for prompt, safe removal of injured employees.
8. Describes the method for keeping the training records readily available.
9. Identifies the employee(s) working at/near a “leading edge.”
10. If a safety monitor system is used, identifies the safety monitor(s).
11. Justification for selecting an alternate fall protection system (controlled access zone and safety monitors) if conventional systems of guardrails, safety nets, or PFAS are not used.

12. Employees review the fall protection work plan or equivalent document for the specific task to be performed before performing the work activity. The review is documented by employee signature.

13. The Fall Protection Work Plan will be made available for easy access by LeChase, the Contractor, Subcontractor and all employees.

Appendix B: Fall Protection Work Plan

Project Name./Contract No:	Date:
Project Area	Location: City - State
Company/Subcontractor Name:	

Note: Employees shall review the requirements of this fall protection work plan prior to starting work. This plan is available at the jobsite during work activities. Applicable contractor will ensure and confirm that all employees are properly trained. Verification documentation should be available.

Job Location Description:

1. Identify all fall hazards 6-feet or more in the work area.

☐ Leading Edge ☐ Stairways ☐ Floor Openings

☐ Perimeter Edge ☐ Ladders ☐ Steel Erection

☐ Other (describe): ☐ Through Roof

2. Identify all fall hazards 6-feet or more in the work area.

☐ Fall Restraint ☐ Guardrails ☐ Warning Line

☐ Fall Arrest ☐ Catch Platform ☐ Safety Monitor

Briefly describe:

3. Describe the planned procedure for assembly, maintenance, inspection, and disassembly of the fall protection system to be used:

4. Describe the method of providing overhead protection for employees who may be in, or pass through, the area below the work site:
   - ☐ Barricading
   - ☐ Toeboards on Scaffolds and Floor Openings
   - ☐ Hard Hats Required
   - ☐ Warning Signs

Briefly describe:

_____

_____

5. Check or describe the method/s for prompt, safe removal of injured employees:
   - ☐ Initiate Emergency Response (911)
   - ☐ Use Lift Truck or Personnel Platform
   - ☐ Use Drop Lines or Retraction Devices
   - ☐ Other (describe):
   - ☐ Use Ladders
   - ☐ Utilize Scaffolds

6. Describe the method or plans to determine the adequacy of attachment and anchor points:
   - ☐ Manufacturer's Date
   - ☐ Existing Engineering/Design Documents
   - ☐ Evaluation by Qualified Engr.
   - ☐ Good Faith Assessment

7. Identify employees potentially working at/near a "leading edge."

_____ _____

_____ _____

_____ _____

8. Justify selecting controlled access zone where conventional fall protection methods cannot be used (if applicable).

_____

_____

_____

Approvals

Fall Protection Plan Completed by: _____

Approved by:

_____

Responsible Supervisor Date Superintendent/Safety Manager Date

Appendix C: Periodic Inspections by Competent Persons

1. Visual inspections will be performed in accordance with manufacturer's requirements at least once each quarter on all safety belts, harnesses, lifelines, and lanyards. Inspections are to be made by a Competent Person who examines for general condition and damage caused by cuts, abrasions, burns and climatic exposures. The Competent Person will ensure that the following fall protection equipment components, at minimum, are inspected:

☐ Stitching	☐ Acid and burn damage
☐ D-Rings	☐ Metal rivets
☐ Deterioration (such as excessive wear and tear)	☐ Hook safety latch
☐ Frayed or broken fabric/leather	☐ Body pad (if applicable)
☐ Lanyard	☐ General condition
☐ Buckles (include tongue)	☐ Certification or data tag
☐ Splices	☐ Other (as required by manufacturer)

Note: None of the items listed above will be altered in any way. During inspections, look for additional holes punched in tongue, excessive tongue cut off, and parts of D-Ring or belts altered or removed.

2. The inspection will be documented in accordance with manufacturer's requirements/inspections on the manufacturer-supplied tag.

3. Equipment or component(s) found defective or altered must be removed from service and destroyed or identified in such a manner as to prohibit their use in employee safeguarding.

LeChase Construction Services, LLC
Jobsite Safety Manual

Section 18 - Ladders and Stairways

Table of Contents

Scope

This section sets forth the guidelines for the inspection and safe use of straight ladders, extension ladders, stepladders, and stairways.

General

Listed below are the main points of interest and the requirements relating to the use and manufacturing of ladders and stairways for the construction industry.

- A stairway or ladder must be provided at all worker points of access where there is a break in elevation of 19 inches (48 cm) or more and no ramp, runway embankment, or personnel hoist provided.
- When there is only one point of access between levels, it must be kept clear to permit free passage by workers. If free passage becomes restricted, a second point of access must be provided and used.
- When there are more than two points of access between levels, at least on point of access must be kept clear.
- All stairway and ladder fall protection systems required by these rules must be installed and all duties required by the stairway and ladder rules must be performed before employees begin work that requires them to use stairways or ladders and their respective fall protection systems.

Stairways

The following general requirements apply to all stairways used during the process of construction, as indicated:

- Stairways must be installed at least 30 degrees, but no more than 50 degrees, from the horizontal.
- Variations in riser height or stair tread depth must not exceed ¼ inch in any stairway system, including a foundation structure used as one or more treads of the stairs.
- Where doors or gates open directly onto a stairway, a platform must be provided that is at least 20 inches (51 cm) in width beyond the swing of the door.
- All stairway parts must be free of dangerous projects such as protruding nails.
- Slippery conditions on stairways must be corrected.
- Spiral stairways that will not be a permanent part of the structure may not be used by workers.

Stair Rails and Handrails

- Stairways having four or more risers, or rising more than 30 inches (76 cm) in height, whichever is less, must have at least one handrail. A stair rail also must be installed along each unprotected side or edge. When the top edge must not be more than 37 inches (94 cm), nor less than 36 inches (91.5 cm) from the upper surface of the stair rail to the surface of the tread.
- Winding or spiral stairways must be equipped with a handrail to prevent using areas where the tread width is less than 6 inches (15 cm).
- Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members must be provided between the top rail and stairway steps of the stair rail system.
- Midrails, when used, must be located midway between the top of the stair rail system and the stairway steps.

- Screens or mesh, when used, must extend from the top rail to the stairway step, and along the opening between top rail supports.
- Intermediate vertical members, such as balusters, when used, must not be more than 19 inches (48 cm) apart.
- Other intermediate structural members, when used, must be installed so that there are no openings of more than 19 inches (48 cm) wide.
- Handrails and the top rails of the stair rail systems must be capable of withstanding, without failure, at least 200 pounds (890 n) of weight applied within 2 inches (5 cm) of the top edge in any downward or outward direction, at any point along the top edge.
- The height of the top edge of a stair rail system used as a handrail must not be more than 37 inches (94 cm) nor less than 36 (91.5 cm) from the upper surface of the stair rail system to the surface of tread.
- Stair rail systems and handrails must be surfaced to prevent injuries such as punctures or lacerations and to keep clothing from snagging.
- Handrails must provide an adequate hand hold for employees to grasp to prevent falls.
- Temporary handrails must have a minimum clearance of 3 inches (8 cm) between the handrail and walls, stair rail systems, and other objects.
- Unprotected sides and edges of stairway landings must be provided with standard 42-inch (1.1 m) guard rail system.

Ladders

The maximum intended load-carrying capacity of ladders authorized for use is 300 pounds. The following general requirements apply to all ladders – be sure manufacturer's specifications are followed:

- There are three (3) types of ladders used: straight ladders, extension ladders, and stepladders. Ladders made of fiberglass or aluminum are acceptable. No ladder is to be painted except for identification purposes.
- Ladders should be visually inspected for up to date inspection and any obvious defects prior to use. Defective ladders are to be identified with "Defective – Do Not Use" tags, and removed from service immediately.
- General safety rules to be observed when using a ladder includes the following:
  - When ascending or descending, do not carry anything that will prevent three (3) points of contact. Use a hand line as needed to raise and lower material or tools so that both hands can be used to hold onto the ladder.
  - Keep both feet on the ladder rungs. Avoid reaching out too far or placing one foot on adjacent structures in a "spread eagle stance." Change the position of the ladder as often as necessary.
  - Whenever a ladder is set up in or over a walkway, doorway, or similar thoroughfare, barricades and "overhead work" signs shall be posted.
  - All ladders should be tied-off or otherwise secured.
  - Ladders may not be used for any purpose other than climbing.
- A double-cleated ladder or two or more ladders must be provided when ladders are the only way to enter or exit a work area having 25 or more employees, or when a ladder serves simultaneous two-way traffic.

- Ladder rungs, cleats, and steps must be parallel, level, and uniformly spaced when the ladder is in position for use.
- Rungs, cleats, and steps of portable and fixed ladders (except as provided below) must not be spaced less than 10 inches (25 cm) apart, nor more than 14 inches (36 cm) apart, along the ladder's side rails.
- Rungs, cleats, and steps of step stools must not be less than 8 inches (20 cm), nor more than 12 inches (31 cm) apart between center lines of the rungs, cleats, and steps.
- Ladders must not be tied or fastened together to create longer sections unless they are specifically designed for such use.
- Two or more separate ladders used to reach an elevated work area must be offset with a platform or landing between the ladders, except when portable ladders are used to gain access to fixed ladders.
- Ladder components must be surfaces to prevent injury from punctures or lacerations, and prevent snagging or clothing.
- Rungs, cleats, and steps of step stools must not be less than 8 inches (20 cm), nor more than 12 inches (31 cm) apart between center lines of the rungs, cleats, and steps.
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- Two or more separate ladders used to reach an elevated work area must be offset with a platform or landing between the ladders, except when portable ladders are used to gain access to fixed ladders.
- Ladder components must be surfaces to prevent injury from punctures or lacerations, and prevent snagging on clothing.

Use of All Ladders (including Job-Made Ladders)

- When portable ladders are used for access to an upper landing surface, the side rails must extend at least three feet (0.9 m) above the upper landing surface. When such an extension is not possible, that ladder must be secured, and a grasping device, such as a grab rail, must be provided to assist workers in mounting and dismounting the ladder. A ladder extension must not deflect under a load that would cause the ladder to slip off its support.
- Ladders must be maintained free of oil, grease, and other slipping hazards.
- Ladders must not be loaded beyond the maximum intended load for which they were built, nor beyond their manufacturer's rated capacity.
- Ladders must be used only for the purpose for which they were designed.
- Non-self-supporting ladders must be used at an angle where the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder.
- Ladders must be used only on stable and level surfaces unless secured to prevent accidental movement.
- Ladders must not be used on slippery surfaces unless secured or provided with slip- resistant feet to prevent accidental movement. Slip-resistant feet must not be used as a substitute for the care in placing, lashing, or holding a ladder upon slippery surfaces.

- Ladders placed in areas such as passageways, doorways, or driveways, or where they can be displaced by workplace activities or traffic must be secured to prevent accidental movement, or a barricade must be used to keep traffic or activities away from the ladder.
- The area around the top and bottom of the ladders must be kept clear.
- Ladders must not be moved, shifted, or extended while in use.
- Ladders must have non-conductive side rails if they are used where the worker or the ladder could contact exposed energized electrical equipment.
- The top two steps of a step ladder must not be used as a step.
- Cross-bracing on the rear section of step ladders must not be used for climbing unless the ladders are designed and provided with steps for climbing on both front and rear sections.
- Ladders must be inspected by a competent person for visible defects on a periodic basis and after any incident that could affect their safe use.
- Each worker must have 3 points of contact when ascending or descending a ladder.
- A worker on a ladder must not carry any object or load that could cause the worker to lose balance and fall.

Definitions

Cleat	A ladder crosspiece of rectangular cross section placed on edge upon which a person may step while ascending or descending a ladder.
Double-Cleat Ladder	A ladder with a center rail to allow simultaneous two-way traffic for employees ascending or descending.
Failure	Load refusal, breakage, or separation or components.
Fixed Ladder	A ladder that cannot be readily moved or carried because it is an integral part of a building or structure.
Handrail	A rail used to provide employees with a handhold for support.
Job-Made Ladder	A ladder that is fabricated by employees, typically at the construction site; not commercially manufactured.
Load Refusal	The point at which the structural members lost their ability to carry the load.
Point of Access	All areas used by employees for work-related passage from one area or level to another.
Portable Ladder	A ladder that can be readily moved or carried.

Riser Height	The vertical distance from the top of a tread or platform/landing to the top of the next higher trade or platform/landing.
Side-Step Fixed Ladder	A fixed ladder that requires a person to get off at the top to step to the side of the ladder side rails to reach the landing.
Single Cleat Ladder	A ladder consisting of a pair of side rails connected by cleats, rungs, or steps.
Stair Rail System	A vertical barrier erected along the unprotected sides and edges of a stairway to prevent employees from falling to lower levels.
Temporary Service Stairway	A stairway where permanent treads and/or landings are to be filled in at a later date.
Through Fixed Ladder	A ladder that requires a person getting off at the top to step between the side rails of the ladder to reach the landing.
Tread Depth	The horizontal distance from front to back of a tread, excluding nosing, if any.

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Section 19 - Scaffolds

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Purpose

The purpose of this procedure is to establish guidelines for the protection of personnel working on scaffold work surfaces. This program is applicable at every work area where scaffolding is erected.

Scope

This policy applies to all LeChase Construction, QSI, and Conifer-LeChase employees, as well as affiliate companies, subcontractors, vendors, and visitors.

Responsibilities

Superintendents/Managers/Supervisors

- Responsible for ensuring that scaffolds are erected by qualified personnel, set-up inspections are performed, and daily inspections are performed before work starts for each shift.
- Responsible for ensuring that all employees have been trained in the use and inspection methods for scaffolds.
- Responsible for ensuring that employees and contractors are aware that scaffolds cannot be used until properly inspected.

Employees

- Responsible for following the intent of this program by ensuring that scaffolds are properly erected and inspected and by reporting any damages or repairs that may be needed to appropriate supervision.

Definitions

Brace	A tie that holds one scaffold member in a fixed position. Braces can also provide rigid connections holding a scaffold to a building or structure.
Coupler	A device for locking together the component tubes of a tube and coupler scaffold.
Guardrail	A rail secured to uprights and erected along the exposed sides and ends of scaffold platforms.
Harness	A component of a Personal Fall Arrest System (PFAS) which is secured about the employee in a manner to distribute the arresting forces over the thighs, shoulders, and pelvis, with provisions for attaching a lanyard, lifeline, or deceleration device.
Heavy Duty Scaffold	A scaffold designed and constructed to carry a working load not to exceed 75 pounds per square foot.

Hoist	A mechanical device to raise or lower a suspended scaffold. It can be mechanically powered or manually operated.
Light Duty Scaffold	A scaffold designed and constructed to carry a working load not to exceed 25 pounds per square foot.
Maximum Intended Load	The total load of all employees, equipment, tools, materials, wind, and other loads reasonably anticipated to be applied to a scaffold or scaffold component at any one time.
Mechanically Powered Hoist/Mobile Scaffold	A hoist or scaffold which is powered by other than human energy.
Mid-Rail	A rail approximately midway between the guardrail and platform, secured to the uprights erected along the exposed sides and ends of platforms.
Outriggers	The structural member of a supported scaffold used to increase the base width to provide greater stability.
Platform	The horizontal working surface of a scaffold.
Scaffold	Any temporary elevated or suspended platform and its supporting structure used for supporting employees, materials, or both.
Tube and Coupler Scaffold	An assembly consisting of tubing, which serves as posts, bearers, braces, ties, runners, a base supporting the posts, and special couplers which serve to connect the uprights and to join the various members.
Tubular Welded Frame Scaffold	A sectional, panel, or frame metal scaffold typically built of prefabricated welded sections that consist of posts and horizontal bearer with immediate members. Panels or frames are braced with diagonal or cross braces

Procedures

This section establishes general provisions and specific responsibilities required by the Scaffold Procedure.

Training

Each employer is required to train all employees that utilize or work on scaffolds on the associated safe work practices. The employer shall ensure that each person that performs work on a scaffold is trained

by a person qualified in the subject matter. This training shall occur before use and include the following:

- Basic scaffold safety information.
- Hazards including fall protection, electrical safety, falling object protection.
- Tags – types, and the requirements of compliance.
- The proper use of each scaffold, and the proper handling of materials on the scaffold.
- Procedures for addressing electrical hazards.
- The maximum intended load capacity of the scaffolds used.
- Fall protection and falling object safety.
- Scaffold maintenance.

The employer will ensure that each employee who is involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting a scaffold trained by a competent person to recognize any hazards associated with the work. The training shall include the following topics, as applicable:

- The nature of scaffold hazards.
- Procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold in use.
- The design criteria, maximum intended load-carrying capacity, and intended use of the scaffold.

When the employer determines that an employee lacks the requisite skill or understanding needed for safe work involving scaffold erection, use, or dismantling, the employer shall retrain the employee so that the requisite proficiency is established.

Retraining is also required in at least the following situations:

- Where changes in scaffolding at the worksite present a hazard about which an employee has not been previously trained.
- Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which an employee has not been previously trained.
- Where inadequacies in an affected employee's work on or around scaffolds indicate that the employee has not retained the requisite proficiency.

Inspections

Scaffolding shall be inspected by a qualified person in conjunction with LeChase Construction and the manufacturer's required recommendations. Competent persons must also ensure that scaffolds are safe prior to and during use.

- At a minimum, the following shall be inspected by the competent person after erection, before the start of the day, or the beginning of a shift change to ensure scaffolds are safe prior to use:
  - Ground or surface footing shall be inspected to ensure that there is no settling.
  - All main supports and cross braces shall be inspected for any signs of damage, missing pins, bolts, and any locks and/or safety keepers.
  - All walking surfaces and/or planks shall be inspected for damage and proper placements and any possible movement.

  - All walkways and planks shall be inspected for stability.
- Inspections shall be made to ensure that all scaffolds are stable and secure.
- If during the inspection a defect is discovered, the scaffold shall be immediately tagged out by the competent person. Use will be prohibited until necessary repairs are made. (See pages 14-16 on Scaffold Inspections and Tagging.)
- Scaffold shall be inspected after any incident in which the scaffolding has been struck by any motorized equipment to ensure no damage has occurred to the scaffold system.

Types of Scaffolds

There are several scaffold types used by LeChase and its subcontractors. The three main categories are:

- **Self-supporting scaffolds**: one or more working platforms supported from below by outriggers, brackets, poles, legs, uprights, posts, frames, or similar supports.
- **Suspension scaffolds**: one or more working platforms suspended by ropes or other means from an overhead structure(s).
- **Special use scaffolds**: one or more working platforms capable of supporting their own weight and at least 4 times the maximum intended load.

Safety Requirements for Scaffolds

Scaffolds shall be secured to the structure when the scaffold height is four times the minimum base dimension and every 26 feet thereafter, or per manufacturer recommendations, and at horizontal intervals not to exceed 30 feet. The more stringent requirement shall apply.

- Scaffolds that are weather protected with plastic or other material shall be secured to the structure to prevent displacement of the scaffold. The competent person or a qualified engineer shall determine the means and methods for securing the scaffold.
- The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying the maximum intended load without settling or displacement. Unstable objects such as boxes, loose brick, or concrete blocks shall not be used to support scaffolds or planks.
- No scaffold shall be erected, moved, dismantled, or altered except under the supervision of competent persons or as requested for corrective reasons by Safety personnel or qualified site management.
- Guardrails and toeboards shall be installed on all open sides and ends of platforms more than 6 feet above the ground, floor, or next level.
- Guardrails must be 2 X 4 inches or the equivalent, not less than 39 inches or more than approximately 45 inches high, with a midrail of 1 X 4-inch lumber, or the equivalent. Supports must be at intervals not to exceed 8 feet. The toeboard and guardrail shall extend along the entire opening.
- Scaffolds and their components must be capable of supporting without failure at least 4 times the maximum intended load.
- Any scaffold, including accessories such as braces, brackets, trusses, screw legs, ladders, couplers, etc., damaged or weakened by any cause must be repaired or replaced immediately. The scaffold shall be Red Tagged (Not for Use) until repairs are made.

- All load-carrying timber members of scaffold framing shall be a minimum of 1,500 fiber (Stress Grade) construction grade lumber.
- All planking must be Scaffold Grades, or equivalent, as recognized by approved grading rules for the type of wood used.
- The maximum permissible span for 1-1/4 X 9 inch or wider plank of full thickness shall be 4 feet with medium duty loading of 50 lb/ft2
- All planking or platforms must be overlapped (minimum 12 in.) or secured from movement.
- An access ladder or equivalent safe access must be provided to all scaffolds.
- Scaffold planks must extend over their end supports not less than 6 inches or more than 18 inches.
- The poles, legs, or uprights of scaffolds must be plumb and securely braced to prevent swaying and displacement.
- Overhead protection must be provided for employees on scaffolding exposed to potential overhead hazards.
- Slippery conditions on scaffolds shall be eliminated as they occur.
- No welding, burning, riveting, or open flame work shall be performed on any staging suspended by means of fiber or synthetic rope. Only treated or protected fiber or synthetic ropes shall be used for or near any work involving the use of corrosive substances or chemicals.
- Wire, synthetic, or fiber rope used for scaffold suspension shall be capable of supporting at least 6 times the intended load.
- When personnel are required to work or pass underneath a scaffold, the scaffold will be equipped with a screen between the toeboard and guardrail along the entire opening.
- A safe distance from energized power lines shall be maintained at all times (see chart below).

Insulated and Un-Insulated Lines Voltage	Minimum Distance	Alternatives
Less than 50 kv	10 feet (3.1 m)	
More than 50 kv	10 feet (3.1 m) plus 0.4 inches (1.0 cm) for each 1 kv over 50 kv	2 times the length of the lines insulator, but never less than 10 feet (3.1 m).

- Suspension ropes shall be protected from contact with heat sources (welding, cutting, etc.) and from acids or other corrosive substances.
- Scaffolds shall not be used during high wind or storms.
- Ladders and other devices shall not be used to increase working heights on scaffold platforms.
- Scaffolds shall not be moved while employees are on them.
- Scaffolds shall be kept tidy and free of excess materials, tools, or debris that could create hazards.
- Employees working on suspended scaffolds shall employ a personal fall arrest system (PFAS).
- Scaffold components shall not be mixed or forced to fit, as this may reduce design strength.
- In the event LeChase provides a scaffold for use by multiple contractors or trades, all contractors shall conduct an independent inspection by their assigned competent person prior to each use.

Stair Towers (Scaffold Stairway/Towers)

Stair Towers (scaffold stairway/towers) must:

- Be positioned so that their bottom step is not more than 24 inches above the scaffold supporting level.
- Have a stair rail with top rail and midrail on each side of the stairway. The top rail must serve as a hand rail unless a separate one is provided. Handrails, and top rails that serve as handrails, must provide an adequate hand hold.
- Be at least 18 inches wide between stair rails.
- Have slip-resistant surfaces on treads and landings.
- Be installed between 40 and 60 degrees from the horizontal.
- Have guardrails provided on the open sides and ends of each landing.
- Have uniform riser height within ¼ inch for each flight of stairs. Greater variations are allowed for the top and bottom steps of the entire system.
- Have uniform tread depth within ¼ inch for each flight of stairs.
- Be surfaced to prevent punctures, lacerations, and snagging of clothing.
- Provide handrails and top rails that are least three inches from other objects such as walls.
- Stair rails must be between 28 and 37 inches from the surface of the thread.
- Have landing platforms at least 18 inches wide by 18 inches long at each level.

Baker Scaffold System

- All scaffolds (including Baker/Perry style) shall have guardrails on all open sides. Personnel must wear safety harnesses and be properly tied off on any scaffold platform not equipped with standard guardrails.
- Rolling scaffolds will only be used on level, smooth surfaces.
- All wheels must be locked when employees are working on the system.
- Regardless of height, handrails are required when employees are working on the system.

Mast Climbing Scaffold System

- Prior to each shift the competent person shall complete the attached “Daily Scaffolding Inspection Checklist” or equivalent.
- Special attention is to be given to the base and foundation of the scaffold along with safety latches and chains.
- Fall protection anchor points are to be established at loading zones and operator stations.
- All employees that may be exposed to a fall of 6’ or greater while materials are being received must be secured with a Personal Fall Arrest System (PFAS).
- Only employees that are key in the operation of the system shall be allowed on the deck while the system is being raised or lowered.
- Operators must be secured with a Personal Fall Arrest System at all times while the decking is removed for system adjustments.
- The operator’s manual for each scaffold must be available on site for reference.
- When building windows are used for access to the scaffold:
  - A secured walkboard with guardrails will extend from the scaffold to the window sill.

- Steps will be constructed with handrails for the change in elevation from the building floor to the window sill.

Miscellaneous Requirements

- Suspension scaffold, power-operated mobile scaffolds and hoists must be of a type tested by a qualified testing laboratory.
  - Gears and brakes of power operated hoists used on suspension scaffolds must be enclosed.
  - In addition to the normal operating brake, suspension scaffold power- operated hoists must have a braking device or locking pawl which engages automatically when the hoist makes either of the following uncontrolled movements:
    - An instantaneous change in momentum
    - An accelerated movement
- Manually operated hoists must be of a type tested by a qualified testing laboratory.
  - Manually operated hoists must have a positive crank force to descend. This requirement is a means of preventing the “free-running” of hoists during descent.
  - In addition to the normal operating brake, manually operated hoists must have a braking device or locking pawl which engages automatically when a hoist makes either of the following uncontrolled movements:
    - An instantaneous change in momentum
    - An accelerated over speed.
- Gasoline-powered equipment and hoists must not be used on suspension scaffolds. Gasoline hoists pose unacceptable fire hazards given the confined areas of a suspended scaffold.
- Two-point and multi-point suspension scaffolds must be tied or otherwise secured to prevent them from swaying, as determined necessary based on the evaluation by a competent person. Window cleaners’ anchors cannot be used for the purpose of preventing swaying. This prohibition is because window cleaners’ anchors are not designed for the load that could be imposed.
- Single function emergency escape and rescue devices cannot be used as working platforms. This prohibition does not apply to systems which are designed to function both as working platforms and an emergency system.

Scaffold Access

- Integral Prefabricated Scaffold Access Frames must:
  - Be specifically designed and constructed for use as ladder rungs.
  - Have a rung length of at least 8 inches, with a maximum spacing between rungs of 16-3/4 inches. Non-uniform rung spacing caused by joining end frames together is allowed, provided the resulting spacing does not exceed 16-3/4 inches.
  - Not be used as work platforms when rungs are less than 11-1/2 inches long, unless the employee uses a personal fall arrest system (PFAS) or a positioning device.
  - Be uniformly spaced within each frame section.

  - Have rest platforms at 35-foot maximum vertical intervals.
- Steps and rungs of ladder and stairway type access must line up vertically with each other between rest platforms.
- Direct access to or from another surface must be used only when the scaffold is not more than 14 inches horizontally and 24 inches vertically from the other surface.

Erecting or Dismantling Scaffolds

Modification and repairs shall be performed by a qualified person, who is competent to certify the scaffolding safe to use, to ensure non-qualified personnel do not create additional hazards.

Employees shall not perform any modifications or repairs *unless they have been trained and certified*, and failure to comply may result in disciplinary action.

- All employers and subcontractors must provide a safe means of access for employees erecting or dismantling supported scaffolds where the provision of safe access is feasible and does not create a greater hazard.
- A competent person must determine whether it is feasible or would pose a greater hazard to provide and require erectors and dismantlers to use a safe means of access. This determination must be based on site conditions and the type of scaffold being erected or dismantled.
- Hook-on or attachable ladders must be installed as soon as scaffold erection has progressed to a point permitting safe installation and use.
- End frames of tubular welded frame scaffolds that meet certain requirements can be safely used as a means of access for ***erectors and dismantlers***. The end frames must be:
  - Parallel
  - Level
  - Not more than 22 inches apart vertically
  - This is provided they are erected in a manner that creates a usable ladder and provides good hand tool and foot space.
- Cross braces on tubular welded frame scaffolds must not be used as a means of access or egress.
  - *The safe use of stair towers, man lifts, or crane personnel platforms is dependent on site conditions and the availability of the equipment and additionally requires you to comply with the procedures covering that equipment.*

Fall Protection for Scaffold Erectors and Dismantlers

A competent person must determine fall protection provisions for employees erecting or dismantling supported scaffolds. Fall protection is required for employees erecting and dismantling supported scaffolds where the installation and use of such protection is feasible and does not create a greater hazard.

Falling Object Protection

In addition to standard PPE, each employee on a scaffold shall be provided with additional protection from falling hand tools, debris, and other small objects through the installation of:

- toe boards

- screens
- guardrail systems
- debris nets
- catch platforms
- canopy structures that contain or deflect the falling objects

When falling objects are too large, heavy, or massive to be contained or deflected by any of the above-listed measures, such potential falling objects must be placed away from the edge of the surface from which they could fall and those materials shall be secured as necessary.

When there is a danger of tools, materials, or equipment falling from a scaffold and striking employees below, the following provisions apply:

- The area below the scaffold to which objects can fall shall be barricaded, and employees shall not be permitted to enter the hazard area.
- A toe board shall be erected along the edge of platforms more than 10 feet above lower levels for a distance sufficient to protect employees below, except on float (ship) scaffolds where an edging of ¾ x 1 ½ inch wood or equivalent may be used instead of toe boards.
- Where tools, materials, or equipment are piled higher than the top edge of the toe board, paneling or screening extending from the toe board or platform to the top of the guardrail shall be erected for a distance sufficient to protect employees below.
- A guardrail system shall be installed with an opening small enough to prevent passage of potential falling objects.
- A canopy structure, debris net, or catch platform strong enough to withstand the impact forces of the potential falling objects shall be erected over the employees below.

Canopies, when used for falling object protection, shall comply to the following criteria:

- They shall be installed between the falling object hazard and the employees.
- When canopies are used on suspension scaffolds for falling object protection, the scaffold shall be equipped with additional independent support lines equal in number to the number of points supported, and equivalent in strength to the strength of the suspension ropes.
- Independent support lines and suspension ropes shall not be attached to the same points of anchorage.

Where used, toe boards shall be:

- Capable of withstanding, without failure, a force of at least 50 pounds applied in any downward or horizontal direction at any point along the toe board.
- At least 3 ½ inches high from the top edge of the toe board to the level of the walking/working surface. Toe boards shall be securely fastened in place at the outermost edge of the platform, and have not more than ¼ inch clearance above the walking/working surface. Toe boards shall be solid or with openings not over 1 inch in the greatest dimension.

Scaffold Tagging Prior to Use

- Each scaffold must be tagged once erection/assembly is complete. If a scaffold system is not complete, it MUST be red tagged and identified as incomplete.
- A competent person is required to inspect every scaffold system prior to each shift. Once the scaffold has been inspected, and the proper inspection log completed, the following color-coded tagging system will be used for hazard identification. The competent person must sign and date each tag. The tag should then be placed at or near the access point of the scaffold. The Lechase Scaffold Inspection Form is attached.

  RED – DO NOT USE. The scaffold is incomplete or has an issue that could cause serious injury.

  YELLOW - The scaffold system is structurally sound and can be used safely with the use of a personal fall arrest system. The hazard shall be noted on the tag and identified in the THA's associated with the scaffold.

  GREEN - The system is safe to use. All structural components are in place and installed properly. All areas of the system that can be accessed by employees are protected from falls of 6' or greater with complete walking decks and guardrails. Safe access and egress is installed.

Scaffold Tags

Referenced scaffold tags may be available at your local LeChase warehouse. Otherwise, please procure through your preferred vendor.

Supporting Documentation

- Scaffold Inspection Form (Appendix A)

Appendix A: Daily Scaffolding Inspection Checklist

	DAILY SCAFFOLDING INSPECTION CHECKLIST	Yes	No	Action, if No
1	Is the scaffold being erected under the direction of a competent person?			
2	Is the footing sound and rigid – not set on soft ground, frozen ground (that could melt), or resting on blocks?			
3	Has the erection site been evaluated for hazards such as earth fills, ditches, debris, underground electric wires, unguarded openings, or conditions created by other trades?			
4	Are wheels/castors locked?			
5	Is the scaffold able to hold four times its maximum intended load?			
6	Are guardrails and toe boards in place on all open sides?			
7	Is the platform complete front-to-back and side-to-side (fully planked or decked, with no gaps greater than 1 inch)?			
8	Is the lumber free of cracks, splits, knots, or damage?			
9	Is the scaffold level?			
10	Have all compounds been inspected for defects such as broken welds, corroded members and missing locks bent or dented tubes?			
11	Are all braces, bearers and clamps secured, all sections pinned or appropriately secured?			
12	Is there a safe way to get on and off the scaffold, such as a ladder (without climbing on cross braces)?			
13	Is the front of the scaffold within 14 inches of the work?			
14	Does the scaffold meet electrical safety clearance distances?			
15	Is the scaffold less than 125 feet in height?			
16	Is the “X” bracing installed on the ends of the scaffold every third set of posts horizontally, and every fourth vertical runner?			
17	Are severe weather provisions in place (i.e., during high winds, rain, snow, or bad weather)?			
18	Have all planks been properly secured to the scaffold structure to prevent them blowing off in the event of high winds?			
19	Where persons work under scaffolding, is a ½ inch mesh screen provided between toe boards and guard rail, or has the area below the scaffold been cordoned off?			
20	Are tag lines available for items to be loaded on to scaffold?			
21	When employees are working on suspended scaffold, are lifelines firmly anchored to an overhead structure and not to the scaffold?			
22	Is the scaffold over 10 feet high, (if yes), is personal fall protection available, or are guardrails in place?			
23	Are guardrails at least 38 inches high?			
24	Are toe boards in place and at least 3 ½ inches high?			
25	Are midrails or equivalent in place?			
26	Does the scaffold have a height to base ratio of at least 4:1?			
27	Platforms longer than 10 feet extend no more than 18 inches beyond their supports.			
28	Platforms up to 10 feet long extend at least 8 inches – but no more than 12 inches – beyond their supports.			

Scaffolding Competent Person (Print)

Signature

_____/_____/_____(Date)

Inspected by (Supervisor/Foreman) (Print)

Signature

_____/_____/_____(Date)

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Section 20 - Barricades

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Purpose
This policy is designed to protect employees from injury by providing barricade warnings of identified or potential hazards.

Scope
This policy applies to all LeChase Construction, QSI, and Conifer-LeChase employees, affiliate companies, subcontractors, vendors, and visitors.

Procedures
Before beginning any work that may present potential hazards to individuals, the area will be inspected to determine the extent of barricading and/or type of barricade required.[1]

A barricade must be placed providing visual protection of any route where an individual could: a) inadvertently enter hazardous areas; b) be unaware of required safety equipment or permission needed for entry; c) be uncertain of the safe distance of observation; d) be working on an activity near a known hazard.

Barricades must have barricade tags posted around the perimeter that identify the nature of the hazard. The tag shall have the name and phone number of the person who erected the barricade along with date and contractor/subcontractor name.

Rigid wood, metal, or plastic barricades must be used whenever there is a removed floor or wall section, missing handrail or any openings in excess of 18 inches. All openings that may cause personal injury shall be covered immediately. Barricade taping is not to be used to guard open-sided floors, holes, excavations, platforms or runways.

Classification of Temporary Barricades
LeChase uses three types of barricades:

- **Danger – (Red)** – Danger/Red barricades are utilized to mark areas of imminent danger or high hazard. Only personnel working on the specific task or to eliminate the hazard should enter. Any person that enters a Danger barricade without consent from the contractor/subcontractor authorized person is subject to disciplinary actions up to and including termination or removal from the project.

- **Caution (Yellow)** – Caution/Yellow barricades will be used to call attention to a hazard, but they offer no physical protection. Employees should not enter Yellow/Caution Barricades unless their jobs require them to do so and they are aware of all potential hazards contained within. After making visual observation and recognizing any potential hazard, site employees or authorized individuals may enter these areas and proceed with caution.

[1] The project or LeChase Regional Safety Manager must be notified if barricades on roadways may impede the passage of emergency vehicles.

- **Radiation - (Magenta and Yellow)** – Radiation barricades are used to mark potential radioactive hazards. The work area shall be barricaded off with Magenta and Yellow barricade tape. All entries and exits shall be blocked, and warning signs shall be posted at the barricaded areas. Only properly trained radiography personnel are allowed to enter Radiation Barricades.

All site employees will be trained on the three barricade types.

Other Instructions Regarding Barricade Use

- When overhead work or work causing the potential for falling debris is performed, the area below shall be marked with a red barricade.
- The swing radius of the counterweight of all cranes will be barricaded in red. If site management determines that a crane, excavator, or pile driving rig is to be stationed at one location for a long period of time, a semi-permanent, guardrail type of rigid barricade is required. When the level of the rotating superstructure of a crane, excavator, pile driving rig, or other similar equipment is less than 7 feet above the support mats or ground level, the swing radius shall be barricaded.
- Barricades in dark areas must have visible warning lights.
- When the hazard no longer exists, the barricading material must be removed and disposed of, or stored properly by the person or entity that installed it.
- All barricades shall conform to standard handrail height requirements of 42 in. as often as is practical.
- Woven fabric barricade tape is preferred. In lieu of woven barricade tape, reinforced plastic tape/ribbon, snow fence or rigid barricades may be used.
- Referenced barricade tape may be available at your local LeChase warehouse. Otherwise, please procure through your preferred vendor.

Barricade Examples

Red Barricade

Barricade Tags

Yellow Barricade

X-Ray/Radiation

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Section 21 - Excavations and Trenching

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Scope

This policy applies to all LeChase Construction, QSI, Platinum-LeChase and Conifer- LeChase employees, as well as affiliate companies, subcontractors, vendors, and visitors.

Purpose

The purpose of this program is to ensure the safety of all employees while working in or around an excavation.

Definitions

Accepted Engineering Practices	Those requirements which are compatible with standards of practice required by a registered professional engineer.
Aluminum Hydraulic Shoring	A pre-engineered shoring system comprised of aluminum hydraulic cylinders (cross braces) used in conjunction with vertical rails (uprights) or horizontal rails (whalers). Such system is designed, specifically to support the sidewalls of an excavation and prevent cave-ins.
Benching	A method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series or horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.
Cave-In	The separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.
Excavation	Any man-made cut, cavity, trench or depression in an earth surface, formed by earth removal.
Ground Penetration Radar	A geophysical method that uses radar pulses to image the subsurface. This nondestructive method uses electromagnetic radiation in the microwave band (UHF/VHF frequencies) of the radio spectrum and detects the reflected signals from subsurface structures.
Hazardous Atmosphere	An atmosphere which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic or otherwise harmful, may cause death, illness or injury.

Protective System	A method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection.
Ramp	An inclined walking or working surface that is used to gain access to one point from another and is constructed from earth or from structural materials such as steel or wool.
Registered Professional Engineer	A person who is registered as a professional engineer in the state where the work is to be performed. However, a professional engineer, registered in any state is deemed to be a “registered professional engineer” within the meaning of this standard when approving designs for “manufactured protective systems” or “tabulated data” to be used in interstate commerce.
Sloping (Sloping system)	A method of protecting employees from cave-ins by excavating to form sides of excavation that is inclined away from the excavation to prevent cave-ins. The angle of decline required to prevent a cave-in varies with differences in factors such as the soil type, environmental conditions of exposure; and application of surcharge loads.
Spoils	The soil, dirt and rubble that results from an excavation and discarded in spoil piles a minimum of 2-feet from an excavation or greater to prevent collapse, cave-in or falling into the excavation.
Structural Ramp	A ramp built of steel or wood, usually used for vehicle access. Ramps made of soil or rock are not considered structural ramps.
Trench (Trench excavation)	A narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of the trench (measured at the bottom) is not greater than 15 feet (4.6m). If forms or other structures are installed or constructed in an excavation to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet (4.6m) or less (measured at the bottom of the excavation), the excavation is also considered to be a trench.

Underground Facilities Protection Organization (UPFO)	An organization whose purpose is establishing and carrying out procedures to protect underground facilities from damage due to excavation and demolition.

Responsibilities

Overall Program Responsibilities
The LeChase Site Management/Superintendent is responsible for the overall implementation and maintenance of any written program or any certification concerning the requirements of all excavations and trenches at LeChase. The LeChase superintendent will be responsible to issue an excavation permit for each excavation on the project.

Competent Person
The designated competent person for an excavation is responsible to ensure the excavation is inspected at the beginning of the shift and periodically throughout the shift to ensure the excavation is complaint with 29 CFR 1926 Subpart P and LeChase Excavation policies. The competent person will obtain an approved excavation permit from the project superintendent prior to any ground-breaking activity.

Equipment Operator
Equipment operators are responsible to ensure they have proper clearance from all obstructions within their work area to include overhead, swing radius and spotter clearance.

Spotter
The Spotter is responsible to stop work at any time during the work when they observe any unsafe situation whether it is an obstruction, unknown utility or other personnel walking, entering or working in the immediate area.

Training
The project team is responsible for obtaining proof of training for the competent person, equipment operator and at minimum excavation awareness training for any workers working in or around the excavation.

Pre-Planning

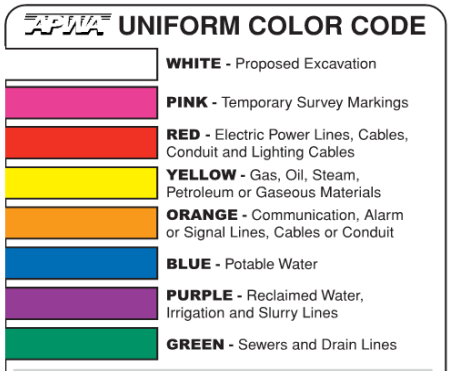
Prior to any excavation a pre-planning meeting will be held with the LeChase project team and the contractor performing the excavation. Additionally, any other trade entering or working near the excavation will be included in the pre-planning meeting.

The meeting will include, but limited to, utility survey, identification of competent person, depth and size of excavation, barricades, water infiltration prevention system, excavation protective systems, atmospheric hazards, egress, vehicular and pedestrian traffic.

Utility Survey

It is the responsibility of the excavating contractor to ensure proper utility surveys are completed prior to each ground break. The surveys will include the following measures to ensure all utility locations have been identified and marked;

- The survey will be completed by UPFO (Underground Facilities Protection Organization) or state equivalent no less than two working days (excluding the day of the call) prior to excavation activities.
- The preferred method for requesting an UFPO is the online request method. Should the online system be unavailable, call-in requests are acceptable only after review and approval by the LeChase Superintendent.
- The site location for the survey will be verified against the ticket which has been issued for the survey.
- UPFO utility markings are only good for a specified number of days in accordance to state regulations.
- In addition to the UFPO survey, Ground Penetrating Radar (GPR) technology will be used around the entire perimeter of the project and across the inner project footprint to identify any missing utilities during the locate process.
- After the locate and GPR services have been provided and performed, the designated GPR locate company will markup/ redline the site drawing(s) map to indicate the location of any utilities that were identified which were not identified on the original drawing(s).
- The site team will review the markup/ redlined drawing(s) with the facility owner's representative to share knowledge of any utilities that were identified by the private locate company, which were not previously on the original drawing(s).
- The LeChase/Subcontractor project team shall take photos of the stake out markings to preserve their known locations.
- A copy of the GPR map will be maintained by the onsite project team.
- Utilities will be marked in accordance with the following Uniform Color Code. The markings may be made by tape or dye on duct banks. *All overhead utilities will be flagged with high visible material for quick visibility by all equipment operators.*



Excavation Permit

The LeChase superintendent will ensure that an Excavation Permit is properly completed for all excavations and trenches. The superintendent will only authorize an excavation permit for such

excavations that have been proven to be properly surveyed per the requirements listed above and has a competent person assigned to the excavation. A new excavation permit will be issued anytime a new competent person is assigned to the excavation or when conditions shift. The competent person will turn in the excavation permit to the LeChase superintendent once the permit has expired. The closed-out excavation permit will become part of the projects records.

- Prior to excavating, the excavating contractor and LeChase project team shall walk the site of the known excavation location to verify utility markings against known and suspected utilities. This validation measure will include the use of the markup/ redline drawings and photographs taken at the location of the excavation.
- Prior to excavating around any known underground utility, the contractor performing the excavation shall pot hole the utility at a minimum of three locations, the start of the line, the middle of the line and the end of the line to determine the depth, width and verify that the elevation of the line is consistent for the entire run. This process shall include a spotter manually hand digging with a shovel or the use of a vacuum or hydro excavator.
- All utilities shall have appropriate APWA Uniform Color Code tape buried at the proper depth over such utility. This shall be verified by LeChase site supervision prior to the backfill of all utilities whether direct bury or in a duct bank.

See Appendix A for Excavation Permit

Excavation Inspections

A daily documented inspection of excavations, the adjacent areas, and protective systems shall be made by a competent person for evidence of conditions that could result in possible cave-ins, failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by the competent person prior to the start of work and as needed throughout the shift. Inspections shall also be made after every rain/precipitation event or other hazard increasing occurrence. These inspections are only required when employee exposure can be reasonably anticipated.

See Appendix B for Excavation Inspection Form

Hazardous Atmosphere

Workers may suffer the deadly effects of suffocation, poisoning or explosion, unless suspect air is tested and regularly monitored before and during trenching.

Where oxygen deficiency or a hazardous atmosphere exists or could reasonably be expected to exist (such as in an excavation in landfill areas or excavating where hazardous substances are stored nearby) the atmosphere in the excavation shall be tested before employees enter the excavations greater than 4-feet in depth.

When needed, appropriate breathing aids must be used. They may include:

Supplied Air
Respirators
Site Ventilation

Atmospheric Oxygen Percentage and Symptoms

- **Normal 20.9% – 23.5%**

- **Symptomatic 16%-19.5%**
- **Unconscious 10%**
- **Fatal <8%**

Explosive/ Flammable/ Combustible Atmosphere

- **Concentrations greater than 10% of Lower Flammable Limit (LFL) or (LEL) Lower Explosive Limit is a hazardous atmosphere.**
- **Concentrations within the LFL/LEL and UFL/UEL are explosive.**
- **Airborne combustible dust concentrations that obscure visibility to 5-feet or less are meeting or exceeding their LFL/LEL.**

Toxic Atmosphere Symptoms

- **Hydrogen Sulfide (H_2S) 10ppm 8hr OSHA PEL**
  - **.01-10ppm rotten egg smell**
  - **10-100ppm loss of smell**
  - **200-300ppm respiratory irritation**
  - **1000-2000ppm fatal**

- **Carbon Monoxide (CO) 50ppm 8hr OSHA PEL**
  - **35ppm NIOSH 8hr TWA**
  - **200ppm frontal lobe headache**
  - **400ppm headache, nausea**
  - **3,200ppm unconsciousness, death in 30mins**
  - **12,00ppm death in 1-3 mins**

Workers must be kept out of unprotected trenches over 5-feet in depth. And it may be necessary to further protect trenching workers by use of life-lines and retrieval harnesses.

Soil Classifications

Classifying a soil's stability is an important part of evaluating the site. In general, soil is divided into four classes, from most stable to least stable:

STABLE ROCK. Solid mineral matter

TYPE A. Cohesive soils, such as clay, silly clay and hardpan

TYPE B. Granular soils, silt, sandy loan, unstable rock, any unstable or fissured Type A soil.

TYPE C. Gravel, loamy soil, submerged soil, sand and any soil that is part of a layered, steeply sloped system.

Soil Classification Testing

LeChase POLICY REQUIRES THE CLASSIFICATION OF ALL SOILS AS A CLASS "C" UNLESS OTHERWISE AGREED BY SITE PROJECT TEAM AND APPROVED BY THE REGIONAL SAFETY MANAGER/DIRECTOR.

Soils classifications must be completed by a competent person.

THE VISUAL TEST – Inspection of the entire worksite, watching for problems like fissured ground, layered soil, previously disturbed earth, seepage, vibration and poor drainage.

THE MANUAL TEST – The Standard permits requires several useful manual tests for soil conditions, plasticity, dry strength, thumb penetration as well as tests using tools such as the pocket penetrameter and hand-operated shear vane.

Warning: One soil inspection and classification may not be enough. Outside disturbances and weather during excavation may change even the best soil classification. Inspect the soil after any condition change. Reclassify and protect against cave-ins based on any new soil classification.

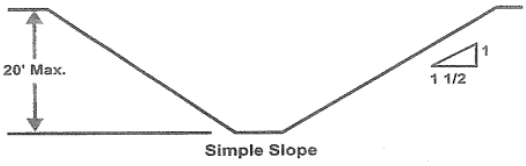
Sloping and Benching

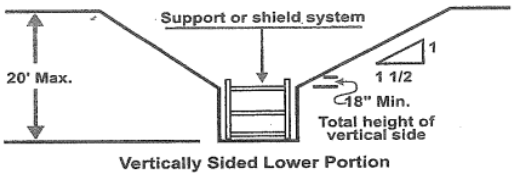
To slope and bench a site means cutting the walls of your excavation back at an angle to its floor. Sloping uses straight cuts. Benching uses a series of one or more steps. Angled casts for excavations up to 20 feet deep are allowed.

AN EXCEPTION: Excavations in TYPE A SOIL, less than 12 feet in depth and open less than 24 hours, may have a maximum slope or bench of 63 degrees.

DON'T FORGET: If the soil condition changes, re-inspect the system. Cut back the angle if slope is needed. Evacuate any excavation whose walls show signs of distress.

Class "C" Soil





Protective Systems

BE SURE TO SHORE, unless excavating entirely in stable rock or digging less than five feet down at a site thoroughly inspected and showing no potential for collapse, a protective support system is required.

Protective system must be designed by a registered professional engineer. The protective system must be accompanied with the tabulated data.

Two basic types of protective systems are permitted:

Shoring
Shielding

Use of pre-manufactured materials, such as hydraulic shoring, trench jacks, air shores or shields must follow the manufacturer's installation specifications. Any deviations from these specifications must be approved in writing by the manufacturer.

Shoring and Shielding

Shoring:

- Provides a framework
- Uses whalers, cross braces and uprights
- Supports excavation walls

Use the tables in 29 CFR 1926, Subpart P, Appendixes C, D, and E for proper shoring methods. You must know the soil type, depth and width of excavation to use the tables.

Basically, the closer shores are placed together, the greater the support. Shores placed side by side are known as close sheeting. Sheeting, too, can be pre-manufactured. Metal plates, shorform panels, sheet metal and metal plate supports are examples of pre-manufactured sheeting.

DON'T FORGET: Remove shoring from the bottom up. Pull sheeting out from above. Back fill every excavation immediately after the support system is removed.

Shielding is a structure providing sheeting and shoring in one package. Shields used in trenches are trench boxes or trench shield. Heavy equipment is always used to place shields into excavations.

- Be sure shields of the vertical trench walls project at least 18 inches above the lowest point where the excavation face begins to slope.

DON'T FORGET: No one shall enter the shield during installation or removal. If a trench needs shielding, it is not safe for you to enter until after the shielding is complete.

Moving Hazards of Foot and Vehicle Traffic

When an excavation is near moving or vibrating traffic, workers face danger from collisions, falls and cave-ins. Some methods you can use to prevent accidents:

Warn and reroute public traffic (employees directing traffic shall have DOT Flagger training)
Post signs, barricades, and flag person
Wear DOT approved reflective vest
Warn industrial traffic with stop logs, barricades, or other suitable means
Install a protective support system heavy enough to withstand the number and weight of nearby vehicles

Nearby Structures

At some sites adjacent to buildings, walls or sidewalks may increase the potential for structural collapse or cave-in. To avoid structural collapse or cave-in:

Support, protect or remove any adjacent structure
Don't dig under any structure unless you are excavating in stable rock, or a proper system is in place, or a registered professional engineer has approved the method of work.

Water Accumulation

Water can cause worker drowning or excavation cave-in. Never work in areas where water is accumulating unless:

The site is protected from accidental entry.

Water is drained by well points or pumps in such a manner that the water is being removed so as not to accumulate.

Weather

The presence of wind, rain or other weather elements can change the conditions of the excavation enough to cause drowning, cave-ins or slips and falls unless the site is re-evaluated and made safe. Workers at risk from any site condition change must be removed until corrective steps are taken. Some methods to decrease weather hazards:

Install support systems strong enough to withstand any probable weather conditions
Re-inspect the excavation site and supports after each weather change

Safety Requirements

Required for Your Safety:

Inspections must be done before each shift begins, periodically througout the shift and after any changes in the excavation environment.
Do not go underneath loads handled by heavy equipment or walk under walkways bridging a trench.
Do not work above a co-worker on a sloped or benched excavation unless your co- worker is protected from falling material.
Wear protective clothing and equipment such as hard hats, work boots and safety glasses.
Ensure walkways or bridges are protected with guard rails at any trench cross-overs or , where fall exposure of over 6’ exists.
Excavated material and other objects must be at least two feet away from the edge of an excavation or be restrained by an appropriate restraining device.
Exits, such as ramps or ladders, must be located within 25 feet of each worker in excavations more than four feet deep.
Walkable ramps must be maintained so that employees do not have to use there hands to access or exit the excavation.
Utlilites in an excavation must be either removed or supported to protect against damage to the utility or accidental collapse or connection with workers in the excavation.

Emergency

Following these procedures in case of trench/excavation emergency will make working in or around a trench safer for everyone:

Immediately call 91/Emergency Response Team and the LeChase Superintendent. Report:

- Exact location
- Number of victims
- Trench measurements
- Special hazards

Keep all life-support and de-watering systems operating.
Clear workers away from the excavation.
Shut down the heavy equipment.

Be prepared to meet and brief rescue personnel.

What Not To Do

Never try to dig the victim out with heavy equipment.
Never allow others into the trench.
Don’t panic.

REMEMBER: Always remain calm. Call Emergency Rescue Services.

Appendix A

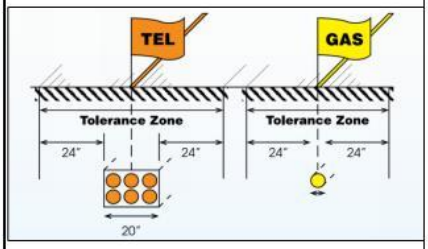
Permit to Locate Utilities & Trench/Excavate

Section 1: Application For Permit

1. This permit must be completed and approved prior to the start of any digging/boring taking place.
2. Once approved a THA must be completed and reviewed with a LeChase supervisor prior to the start of activities.
3. Once trench/excavation complete and prior to anyone entering the excavation a documented inspection must take place.

Project Name:		Name of Subcontractor:	
Subcontractor Onsite Superintendent:		Phone:	
Subcontractor Competent Person:		Phone:	
Work Location:			
Permit Start Date:	Date:_____ Time:_____ am/pm	Permit Expiration Date:	Date:_____ Time:_____ am/pm
Description of activity and equipment involved:			

Section 2: Utility Locating

Item		Comments – Explanation Required
1.	Have as-built drawings, utility drawings and logistics drawings been reviewed to identify known utilities?	
2.	Has 811 been called?	811 Locate Number:
3.	What utilities/services are located within the work space? ☐ Gas ☐ Electrical Services (Underground/overhead) ☐ Telecom/Data ☐ Water ☐ Storm Sewer ☐ Sanitary Sewer ☐ Steam ☐ Fuel ☐ Rail ☐ Other	
4.	Has GPRS located and marked known utilities? Are markings visible?	
5.	How will known utilities/services be exposed to visually confirm their location? ☐ Pot holing ☐ Vacuum Truck ☐ Other: _____ **After visually locating utilities STOP WORK and notify LeChase supervision. The subcontractor's competent person and LeChase must validate/verify and sign below.** Subcontractor Signature: LeChase Signature:	Hand digging is required if within 24" of marked utilities, to verify location. 

Section 3: Planning Considerations

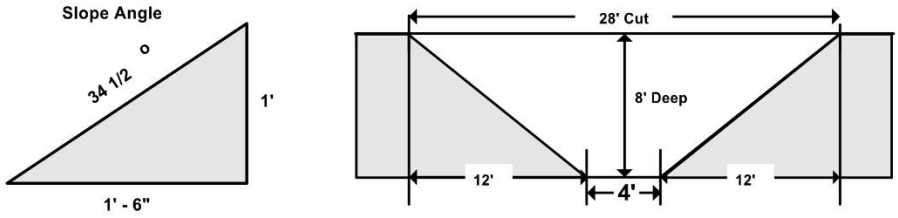
Item		Comments – Explanation Required
6.	Has an emergency action plan been developed including the location of utility shut offs?	
7.	What control measures will be utilized to prevent trench/excavation collapse - sloping, benching, shoring, etc.?	
8.	What protection for public/pedestrians/bystanders has been installed? (Fencing, jersey barricades, warning signage, etc.)	
9.	Proximity of local foot or vehicle traffic to excavation? Will additional vibration and/or pollutant monitoring be required?	
10.	What are the means of access/egress for the trench/excavation? (Access points required every 25' extending 3' above the excavation.)	
11.	Has the excavation been coordinated with other subcontractors?	
Other Special Precautions:		

Subcontractor Signature/Date:	LeChase Signature/Date:

Appendix B

Daily Excavation Checklist			
Competent Person: Date:			
Site Location: Job Number:			
Soil Type: Test Method: Visual Reading			
Type of Protective System Used:			
Excavation Depth: Excavation Width: Excavation Length:			
Indicate for each item: Yes – No – or N/A for not applicable:			
1. General Information:	**Yes**	**No**	**N/A**
A. Is excavation less than five feet in depth?			
B. Is there a potential for a cave-in? ***IF YES, excavation must be sloped, shored, or shielded.**			
C. Is excavation deeper than five feet in depth? *** IF YES, excavation must be sloped, shored, or shielded.**			
D. Is sloping used as your protective system?			

Slope information to keep in mind:



Example of a Simple 34-degree Slope commonly used around the site for cave-in protection.

2. Inspection of Job-site:	**Yes**	**No**	**N/A**
A. Excavations, adjacent areas, and protective systems inspected by a competent person daily before the start of work.			
B. Competent person has the authority to remove employees from the excavation immediately.			
C. Surface encumbrances removed or supported.			
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.			
E. Hard hats, safety glasses and gloves worn by all employees.			
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.			
G. Adequate barriers provided at all excavations, wells, pits, shafts, etc.			
H. Warning vests or other highly visible clothing provided and worn by all employees exposed to vehicular traffic. It's a good practice to wear vests always around heavy equipment.			
I. Employees required to stand away from vehicles being loaded or unloaded.			
J. Warning system established and utilized when mobile equipment is operating near or adjacent to the edge of the excavation.			
K. Employees prohibited from going under suspended loads.			
3. Utilities:	**Yes**	**No**	**N/A**
A. Location of utilities marked.			
B. Prior to the use of equipment, underground utilities have been located by hand digging.			
C. Underground utilities are protected, supported, or removed when excavation is open.			
4. Means of Access and Egress:	**Yes**	**No**	**N/A**
A. Travel distance to means of egress no greater than 25 feet in excavations four feet or more in depth.			

B. Straight ladders used in excavations extend at least three feet above the edge of the trench.			
C. Ramps being used for employee access have been designed by the competent person.			
D. Employees protected from cave-ins when entering or exiting the excavation.			
5. Wet Conditions:	**Yes**	**No**	**N/A**
A. Precautions have been taken to protect employees from the accumulation of water.			
B. Water removal equipment monitored by a competent person.			
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.			
D. Inspections have been made after every rainstorm or other hazard-increasing occurrence.			
6. Hazardous Atmosphere: **The atmosphere within the excavation must be tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard. (USE LAST PAGE TO RECORD READINGS)**	**Yes**	**No**	**N/A**
A. Are there exposed sewer or natural gas lines in excavation?			
B. Is excavation near a landfill area, or are hazardous substances being stored close to the excavation?			
If you answered YES to A or B, then treat excavation as a confined space.			
C. Employees will contact at prior to entry and in case of emergencies.			
7. Support Systems:	**Yes**	**No**	**N/A**
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.			
B. Materials and equipment used for protective systems inspected and in good condition.			
C. Materials and equipment not in good condition have been removed from service.			
D. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.			
E. Members of support system securely fastened to prevent failure.			
F. Support systems provided to ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.			
G. Excavations below the level of the base of a footing have been approved by a Registered Professional Engineer.			
H. Removal of support systems progresses from the bottom and members are released slowly so you can note any indication of possible failure.			
I. Backfilling progresses with removal of support system.			
J. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.			
K. Shield system placed to prevent lateral movement.			
M. Employees are prohibited from remaining in shield system during vertical movement.			
8. Training:	**Yes**	**No**	**N/A**
A. All employees have had Excavation Safety Awareness Training.			

ATMOSPHERIC TESTING LOG									
Acceptable Enter Conditions									
Oxygen: **19.5 - 23.5%**			Flammables/ Combustibles: **Below 10% LEL**				Other:		
Hydrogen Sulfide **0-10 PPM TLV-TWA**			Carbon Monoxide **0-10 PPM TLV-TWA**				Other:		
Testing and Monitoring Checklist									
Make, Model & Serial # of Test Equipment:									
Date Equipment Calibrated:			**Intermittent Testing**				**Continuous Monitoring**		
	Initial Test	**Test 1**	**Test 2**	**Test 3**	**Test 4**	**Test 5**	**Test 6**	**Test 7**	**Test 8**
Date									
Time									
Oxygen	%	%	%	%	%	%	%	%	%
LEL	%	%	%	%	%	%	%	%	%
CO	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
H2S	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
Toxic:									
Tester's Intials									

LeChase Construction Services, LLC
Jobsite Safety Manual

Section 22 - Steel Erection

On many of the LeChase Construction projects, steel erection is a primary function of a sub or prime contractor. Our Superintendents and Foremen shall see that the following basic rules and Subpart R of the OSHA Standards are being followed on our projects.

For fall protection requirements involving steel erection operations, refer to Section 17, Fall Protection and Prevention Policy.

LeChase Construction Services, LLC
Jobsite Safety Manual

Section 23 - Mobile Equipment Policy

Table of Contents

Equipment

The purpose of this procedure is to ensure that power mobile operators are fully trained and qualified to safely operate mobile equipment to reduce the possibility of personal injury or property damage. This policy and procedure applies to all powered mobile equipment all mobile equipment on LeChase sites or property includes forklift, lulls, scissor lifts, skid-steers and related mechanized power equipment.

General Requirements

- All equipment left unattended at night, adjacent to a highway in normal use, or adjacent to construction areas where work is in progress, shall have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, to identify the location of the equipment.
- A safety tire rack, cage, or equivalent protection shall be provided and used when inflating, mounting, or dismounting tired installed on split rims, or rims equipped with locking rings or similar devices.
- Heavy machinery, equipment, or parts thereof, which are suspended or held aloft by use of slings, hoists, or jacks shall be substantially blocked or cribbed to prevent falling or shifting before employees are permitted to work under or between them. Bulldozer and scraper blades, end-loader buckets, dump bodies, and similar equipment, shall be either fully lowered or blocked when being repaired or when not in use. All controls shall be in a neutral position, with the motors stopped and brakes set, unless work being performed requires otherwise.

  Whenever the equipment is parked, the parking brake shall be set. Equipment parked on inclines shall have the wheels chocked and the parking brake set.
- The use, care and charging of all batteries shall conform to manufacturers requirements.
- All cab glass shall be safety glass or equivalent that introduces no visible distortion affecting the safe operation of any machine covered by this section.

Training Requirements/Pre-requisites

The requirements outlined in this policy shall be followed by all LeChase employees and affiliate companies, prime subcontractors and all lower tier Subcontractors.

The following operational training/prerequisite requirements, applies to all LeChase and affiliate employees:

- Only trained and credentialed/Licensed or union/Local operators will be allowed to operate mobile equipment. In the absence of a qualified, licensed or union/locally-trained operator. Alternative operators will be considered only if appropriately trained by a recognized credentialing authority or agency.
- In the event that a situation arises on a project where a credentialed/Licensed or Qualified operator cannot be obtained or justified, the project team must select an employee to operate the equipment that has been through the LeChase mobile equipment training program. The project team must complete an exception form and submit it to the Project Manager, Project Executive, SBU leader, EHS and the QSI Hiring Manager for sign-off and approval prior to allowing the employee to operate the equipment. The exception form must be retained on site in the project office after approval has been granted.

The training requirements for all Subcontractor and lower tier subcontractors are as follows according to OSHA regulations:

- "The employer shall permit only those employees qualified by training or experience to operate equipment and machinery." (1926.20(b)(4)) and
- "The employer shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his [or her] work environment to control or eliminate any hazards or other exposure to illness or injury." (1926.21(b)(2)).

Effective operator training for all mobile equipment shall include:

- Instructions on the safe conduct of operations so that the operator knows and understands the restrictions and limitations of the equipment.
- Instructions in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury.
- Instructions in the proper maintenance and documented inspection of equipment before operating.
- Instruction on the safe operation and limitations of any aftermarket attachments (i.e. jib attachment for a Telescopic fork lift/material handler or forks on a front end loader). This training must include instructions of the effects that attachments have of the equipment operated.

Responsibilities

LeChase site management (Project Managers, Project Superintendents) are responsible and accountable for ensuring that appropriate training certifications or documentation are collected and retained on site before allowing any employee to operate any mobile equipment. The types of certification/documentation deemed acceptable are listed in each related section below.

LeChase site management (Project Managers, Project Superintendents) is responsible and accountable for ensuring that all aspects of this policy are followed.

Motor Vehicles

Coverage

Motor vehicles as covered by this section are those vehicles that operate within an off- highway jobsite, not open to public traffic.

General Requirements

- All vehicles shall have a service brake system, and a parking brake system. These systems may use common components, and shall be maintained in operable condition.
- Whenever visibility conditions warrant additional light, all vehicles, or combinations of vehicles, in use shall be equipped with at least two headlights and two taillights in operable condition.
- All vehicles, or combination of vehicles, shall have brake lights in operable conditions regardless of light conditions.
- All vehicles shall be equipped with an adequate audible warning device located at the controls of the equipment.
- No employer shall use any motor vehicle equipment having an obstructed view to the rear unless:

  - The vehicle has a reverse signal alarm audible above the surrounding noise level or;
  - The vehicle is backed up only when an observer signals that it is safe to do so.
- All vehicles with cabs shall be equipped with windshields and powered wipers. Cracked and broken glass shall be replaced. Vehicles operating under conditions that cause fogging or frosting of the windshields shall be equipped with operable defogging or defrosting devices.
- All haulage vehicles, whose pay load is loaded by means of cranes, power shovels, loaders, or similar equipment, shall have a cab shield and/or canopy adequate to protect the operator from shifting or falling materials.
- Tools and material shall be secured to prevent movement when transported in the same compartment with employees.
- Vehicles used to transport employees shall have seats firmly secured and adequate for the number of employees to be carries.
- Seat belts and anchorages meeting the requirements of 49 CFR part 571 (Department of Transportation, Federal Motor Vehicle Standards) shall be installed in all motor vehicles.
- Trucks with dump bodies shall be equipped with positive means of support, permanently attached, and capable of being locked in position to prevent accidental lowering of the body while maintenance or inspection work is being done.
- Operating levers controlling hoisting or dumping devices on haulage bodies shall be equipped with a latch or other device which will prevent accidental starting or tripping of the mechanism.
- Trip handles for tailgates of dump trucks shall be so arranged that, in dumping, the operator will be in the clear.
- All vehicles in use shall be checked at the beginning of each shift to assure that the following parts, equipment, and accessories are in safe operating condition and free of apparent damage that could cause failure while in use: service brakes, including trailer brake connections, parking system (hand brake); emergency stopping system (brakes); tires; horn; steering mechanism; coupling devices; seat belts; operating controls; and safety devices. All defects shall be corrected before the vehicle is places in service. These requirements also apply to equipment such as lights, reflectors, windshield wipers, defrosters, fire extinguishers, etc., where such equipment is necessary.

Training Requirements/Documentation

All persons operating motor vehicles on LeChase projects will hold a valid state driver's license. A copy of the driver's license will be obtained by LeChase management and retained at the job site for reference for the entire duration of the project. NOTE: This requirement does not include the use of powered industrial trucks, scrapers, loaders, crawler or wheel tractors, bulldozers, graders, agricultural and industrial tractors, compactors, rubber tired "skid-steer" equipment and similar equipment.

Power Industrial Trucks (LULLS/Forklifts)

General Requirements

Powered industrial truck operators must follow established safety rules at all times. These rules have been established to protect operators as well as other employees on the site.

- Nameplates and markings on powered industrial trucks shall remain intact and shall be maintained in legible condition.

- The manufacturer's written approval must be obtained for any modifications that effect truck capacity and/or safe operation.
- If a modification is made, the capacity operation, and maintenance instruction plates, tags, or decals shall be changed.
- The operator will conduct a pre-shift inspection of the lift. If the lift is found to be in unsafe operating condition it will be removed from service. All repairs will be made by authorized personnel.
- Operators will be required to attend a refresher course following their involvement in any unsafe action, accident or near miss or are assigned to operate a different type of lift.
- Subcontractor shall ensure that any lifting attachment used on mobile equipment has a positive locking mechanism that prevents accidental displacement or release.

Training Requirements/Documentation

- All operators shall be trained in accordance with the OSHA requirements set forth in 1910.178(l).
- All employee operators are required to have a valid training card/certificate on their person at all times during operation of powered industrial trucks.
- A copy of the employee's certification will be obtained by LeChase management and retained at the job site for reference for the entire duration of the project.
- Proof of training shall be obtained and on file before the any employee is permitted to operate equipment.

Safe Start-up Practices

- Fasten your safety belt.
- Make sure controls are in neutral and the parking brake is set.
- Clear the area of people.
- Start the engine.
- Test all controls.
  - Steering
  - Forward
  - Reverse
  - Boom
  - Attachment controls
- Check the brakes.
- Check the horn and backup alarm.
- Never try to start or operate equipment from outside the cab.
- Never operate the machine if any safety device is missing or damaged.

Skid Steers

General Requirements

Skid Steer operators must follow established safety rules at all times. These rules have been established to protect operators as well as other employees on the site.

- Nameplates and markings on Skid Steers shall remain intact and shall be maintained in legible condition.
- The manufacturer's written approval must be obtained for any modifications that effect equipment's capacity and/or safe operation.
- If a modification is made, the capacity operation, and maintenance instruction plates, tags, or decals shall be changed.
- The operator will conduct a pre-shift inspection of the equipment. If the equipment is found to be in unsafe operating condition it will be removed from service. All repairs will be made by authorized personnel.

Training Requirements/Documentation

- All operators shall be trained in the safe operation of the specific equipment they are assigned to and operating. Training shall include specific instructions on any attachments used.
- Proof of training shall come from the Sub Contractor employer in the form of a company letterhead stating the said employee has been properly trained and is qualified to operate said equipment in a competent and safe manner.
- All training documentation will be obtained by LeChase management and retained at the job site for reference for the entire duration of the project.
- Proof of training shall be obtained and on file before the any employee is permitted to operate equipment.

Safe Start-up Practices

- Fasten your safety belt.
- Lower the safety/restraining bar (if so equipped).
- Make sure controls are in neutral and the parking brake is set.
- Clear the area of people.
- Start the engine.
- Test all controls.
  - Steering
  - Forward
  - Reverse
  - Raise and lower lift arms
  - Attachment controls
- Check the brakes.
- Check the horn and backup alarm.
- Never try to start a loader from outside the cab.
- Never operate the machine if any safety device is missing or damaged.
- Never climb out of a loader with the engine running.
- Never start the engine by shorting across the starter terminals.
- Refer to the operator's manual for instructions on jump-starting if necessary.

Safe Shut-down and Exit

Many operators are killed trying to climb out of the cab without observing safe shut down procedures. Protect yourself by always following these precautions.

- Park on a level surface.
- Lower the lift arms and attachments to the ground.
- Place the controls in neutral.
- Set the parking brake.
- Turn the engine off.
- Cycle the controls to relieve hydraulic pressure.
- Make sure the controls are locked (if so equipped).
- Remove the ignition key.
- Unbuckle the safety belt and raise the safety bar.
- Exit according to manufacturer's instructions using the steps on the loader and the grab handles for support.
- Block the wheels if there is a chance the loader will roll.

Material Handling Equipment

General Requirements

- Earthmoving Equipment
  - These rules apply to the following types of earthmoving equipment: scrapers, loaders, crawler or wheel tractors, bulldozers, off-highway trucks, graders, agricultural and industrial tractors, and similar equipment.
- Access Roadways and Grades
  - No one shall move or cause to be moved construction equipment or vehicles upon any access roadway or grade unless the access roadway or grade is constructed and maintained to accommodate safely the movement of the equipment and vehicles involved.
  - Every emergency access ramp and berm used by an employer shall be constructed to restrain and control runaway vehicles.
- Brakes
  - All earthmoving equipment mentioned in this Section shall have a service braking system capable of stopping and holding the equipment fully loaded, as specified in Society of Automotive Engineers SAE-J237, Loader Dozer-1971, J236, Graders-1971, and J319b, Scrapers-1971. Brake systems for self-propelled rubber-tiered off-highway equipment manufactured after January 1, 1972, shall meet the applicable minimum performance criteria set forth in the following Society of Automotive Engineers Recommended Practices:

    Self-Propelled Scrapers.....SAE J319B-1971
    Self-Propelled Graders.....SAE J23601971
    Trucks and Wagons.....SAE J166-1971
    Front End Loaders and Dozers.....SAE J237-1971
- Fenders

  - Pneumatic-tired earth-moving haulage equipment (trucks, scrapers, tractors, and trailer units) whose maximum speed exceeds 15 miles per hour, shall be equipped with fenders on all wheels to meet the requirements of Society of Automotive Engineers SAE J321a- 1970, Fenders for Pneumatic-Tired Earthmoving Haulage Equipment.
- Audible Alarms
  - All bi-directional machines, such as rollers, compacters, front-end loaders, bulldozers, and similar equipment, shall be equipped with a horn, distinguishable from the surrounding noise level, which shall be operated as needed when the machine in moving in either direction. The horn shall be maintained in an operative condition.
  - No employer shall permit earthmoving or compacting equipment which has an obstructed view to the rear to be used in reverse gear unless the equipment has in operation a reverse signal alarm distinguishable from the surrounding noise level or an employee signals that it is safe to do so.
- Scissor Points
  - Scissor points on all front-end loaders, which constitute a hazard to the operation, shall be guarded.

Training Requirements/Documentation

- All operators shall be trained in the safe operation of the specific equipment they are assigned to and operating.
- Proof of training shall come from the Subcontractor/Contractor employer in the form of a company letterhead stating the said employee has been properly trained and is qualified to operate said equipment in a competent and safe manner.
- All training documentation will be obtained by LeChase management and retained at the job site for reference for the entire duration of the project.
- Proof of training shall be obtained and on file before the any employee is permitted to operate equipment.

Excavating and Other Equipment

General Requirements

- Tractors covered in Earth Moving Equipment; shall have seat belts as required for the operators when seated in the normal seating arrangement for tractor operation, even though back-hoes, Rock breakers, or other similar attachments are used on these machines for excavating or other work.
- For the purposes of this section, the nomenclatures and descriptions for measurement of dimensions of machinery and attachments shall be described in Society of Automotive Engineers 1970 Handbook, pages 1088 through 1103.
- The safety requirements, ratios, or limitations applicable to machines or attachment usage covered in Power Crane and Shovel Associations Standards No. 1 and No. 2 of 1968, and No. 3 of 1969, shall be complied with, and shall apply to cranes, machines, and attachments under this part.

Training Requirements/Documentation

- All operators shall be trained in the safe operation of the specific equipment they are assigned to and operating.
- Proof of training shall come from the employer in the form of a company letterhead stating the said employee has been properly trained and is qualified to operate said equipment in a competent and safe manner.
- All training documentation will be obtained by LeChase management and retained at the job site for reference for the entire duration of the project.
- Proof of training shall be obtained and on file before the any employee is permitted to operate equipment.

Pile Driving Equipment

General Requirements

- Boilers and piping systems which are a part of, or used with, pile driving equipment shall meet the applicable requirements of the American Society of Mechanical Engineers, Power Boilers (section I).
- All pressure vessels which are a part of, or used with, pile driving equipment shall meet the applicable requirements of the American Society of Mechanical Engineers, Pressure Vessels (section VIII).
- Overhead protection, which will not obscure the vision of the operator and which meets the requirements of subpart N of this part, shall be provided. Protection shall be the equivalent of 2-inch planking or other solid material of equivalent strength.
- Stop blocks shall be provided for the leads to prevent the hammer from being raised against the head block.
- A blocking device, capable of safely supporting the weight of the hammer, shall be provided for placement in the leads under the hammer at all times while employees are working under the hammer.
- Guards shall be provided across the top of the head block to prevent the cable from jumping out of the sheaves.
- When the leads must be inclined in the driving of batter piles, provisions shall be made to stabilize the leads.
- Fixed leads shall be provided with ladder, and adequate rings, or similar attachment points, so that the loft worker may engage his fall protection lanyard to the leads. If the leads are provided with loft platform(s), such platform(s) shall be protected by standard guardrails.
- Steam hose leading to a steam hammer to jet pipe shall be securely attached to the hammer with an adequate length of at least ¼-inch diameter chain or cable to prevent whipping in the event the joint at the hammer is broken. Air hammer hoses shall be provided with the same protection as required for steam lines.
- Safety chains, or equivalent means, shall be provided for each hose connection to prevent the line from thrashing around in case the coupling becomes disconnected.
- Steam line controls shall consist of two shutoff valves, one of which shall be a quick- acting level type within easy reach of the hammer operator.
- Guys, outriggers, thrust-outs, or counterbalances shall be provided as necessary to maintain stability of pile driver rigs.

- Engineers and winch men shall accept signals only from the designated signalmen.
- All employees shall be kept clear when piling is being hoisting into the leads.
- When piles are being driven in an excavated pit, the walls of the pit shall be sloped to the angle of repose or sheet-piled and braces.
- When steel tube piles are being “blown out”, employees shall be kept well beyond the range of falling materials.
- When it is necessary to cut off the tops of driven piles, pike driving operations shall be suspended except where the cutting operations are located at least twice the length of the longest pile from the driver.
- When driving jacked piles, all access pits shall be provided with ladders and bulkhead curbs to prevent material from falling into the pit.

Training Requirements/Documentation

- All operators shall be trained in the safe operation of the specific equipment they are assigned to and operating.
- Proof of training shall come from the subcontractor/employer in the form of a company letterhead stating the said employee has been properly trained and is qualified to operate said equipment in a competent and safe manner.
- All training documentation will be reviewed by LeChase management and retained at the job site for reference.
- Proof of training shall be obtained and on file before the any employee is permitted to operate equipment.

Site Clearing

General Requirements

- Employees engaged in site clearing shall be protected from hazards of irritant and toxic plants and suitably instructed in the first aid treatment available.
- All equipment used in site clearing operations shall be equipped with rollover guards meeting the requirements of this subpart. In addition, rider-operated equipment shall be equipped with seat belts and with an overhead and rear canopy guard meeting the following requirements.
  - The overhead covering on this canopy structure shall be of not less than 1/8-inch steel plat or ¼-inch woven wire mesh with openings no greater than 1 inch, or equivalent.
  - The opening in the rear of the canopy structure shall be covered with not less than
  - ¼-inch woven wire mesh with openings no greater than 1 inch.

Appendix A: Mobile Equipment Operator Exception Form

Project Name	**Project Number**
Address	**SBU**
	Superintendent
Date	**PM**

Equipment to be operated:

_____
_____
_____

Employee Names:

_____
_____

Reason Exception Required:

_____
_____
_____
_____
_____

Approved by:

_____ _____
PX/QSI Hiring Manager Date **SBU Leader/ QSI President Date**

_____
LeChase ES&H Date

LeChase Construction Services, LLC
Jobsite Safety Manual

Section 24 - Crane Safety Policy

Table of Contents

Purpose

LeChase Construction's Crane Safety Policy is designed to ensure the safe operations of all cranes, rigging, and signaling activities. LeChase Construction, its affiliates, and subcontractors will meet or exceed current federal, state, and local safety/regulatory requirements.

Each lift is unique, requiring evaluation onsite-specific activities, soil/ground conditions, weather (including wind), weight of material, people, processes, fall zones, work area control, and rigging and signaling. Parties who use crane services on LeChase sites must follow:

- This Crane Safety Policy
- Manufacturers' requirements
- All OSHA and ASME crane and rigging standards

Scope

This policy applies to all LeChase Construction, QSI, Conifer-LeChase operations, affiliate companies, employees, subcontractors, vendors, and visitors.

Process

A preplanning meeting is required to address all pertinent elements of this policy and as required by 29 CFR 1926.1400. A crane pre-planning meeting agenda is provided in this policy.

Before the pre-planning meeting, the crane contractor/operator must submit to the LeChase superintendent/project manager a complete list of required documentation, including, but not limited to the following:

- Completed **Crane Lift Plan** or equivalent document (see "Appendix A: Crane Lift Plan").
- Completed **Annual Inspection Certificate** before the crane arrives on site. Any identified deficiencies must be corrected with documentation of corrections provided to LeChase before the crane is put into operation. The crane inspection decal on the unit is a way to determine if the inspection is current; however, the complete documented annual inspection must be reviewed in accordance with OSHA 1926.1412. Confirmation of the Annual/Comprehensive inspection shall include the following documentation;
  - The results of the inspection
  - The name and signature of the person who conducted the inspection
  - The date and documentation for any recommendations and/or deficiencies that were corrected, in any

  Equipment that has been idle for three months or more must be inspected by a qualified person in accordance with 29 CFR 1926.1412(e).
- **Operator license or certification** as required by local, state, or federal government regulations in accordance with 29 CFR 1926.1427. "Operator Qualification and Certification" for the type and capacity of the crane to be operated must also be provided.
- Documentation of **load charts and load weights** that are specific to the crane in use. This must be available for review and located inside of the crane cab at all times.

- Documentation of maximum **crane radius and capacity**.

General Requirements

- Cranes must be used on firm, drained, and graded surfaces that can support all crane functions and travel.
- For each crane setup, the property owner must sign off that there are no underground utilities, structures, or stability concerns in the crane setup locations. All underground hazards will be identified and communicated to subcontractor and communicated to the crane operator/owner and crew for each crane setup, including the location of outrigger pads for underground utilities, voids, or surface soft spots.
- The subcontractor/crane vendor shall identify the Assembly/Disassembly Director (A/D Director). The A/D Director must be a qualified and competent individual or a competent individual assisted by a qualified individual.
- The subcontractor must submit the names of competent and qualified person(s) for both rigger and signal-person positions before arrival of the crane and provide copies of individual certifications to the LeChase management team before mobilization.
- All items identified by 29 CFR 1926.1404 will be reviewed with the assembly/disassembly crew and by the A/D Director before work begins. Fall protection is required as defined by LeChase site requirements for the project (not the 15-foot assembly/disassembly standard defined by OSHA).
- Shift, monthly, and annual written inspection reports are to be submitted to the LeChase Superintendent or Safety Manager. Any recommendations or deficiencies noted on any shift, monthly, or annual inspection reports will be investigated by the LeChase Superintendent or Safety Manager and the crane cannot be used until LeChase has verified that items have been addressed or corrected.
- All FAA determinations regarding a crane on LeChase sites will be strictly adhered to when a crane is present.
- Landing areas must be identified and communicated to all workers who might be affected.
- No part of the crane equipment, load line, or load (including rigging and lifting accessories) can be used within 20 feet of any electrical lines up to 350 kV, except where lines have been de-energized or visually grounded at the worksite. Voltages higher than 350 kV require greater distances as defined in 29 CFR 1926.1407, 1408 and 1409. Working closer than 20 feet in accordance with Table A of OSHA 1926.1408 will be allowed only with special permission by LeChase management and ES&H, and additional planning and documentation will be required. Table T and procedures in OSHA 1926.1411 will be followed for traveling cranes under or near power lines with no loads.
- The crane vendor or subcontractor will secure a street closure permit, if needed.
- When necessary, local helicopter rescue units will be modified and procedures defined for shutdown, lay down, downdraft, two-way communication, etc.
- Signal-persons and riggers must be trained and evaluated by their employer in accordance with 29 CFR 1926.1430. This training record will be documented and available on site, and will specify the type of signaling (e.g., hand signals, radio signals or both) for which they have been trained. The Lift Director will verify that rigger and signal person training is in place and will verify this on lift plans.
- Slings, points of attachment, hooks, spreaders, shackles, material and personnel baskets, and all lifting hardware and gear will be inspected as required.

- Identify and establish methods of communications during picks.
- A positive acting anti-two-block device is required on all cranes.
- Suspended personnel platforms require additional inspections and pre-planning as defined in 29 CFR 1926.1431 and must be approved by the lift plan authorizer and supervisor and the LeChase ES&H Regional Safety Manager or the Vice President of ES&H. Additional state requirements must also be followed where applicable.
- The cabs of cranes cannot have cracked or broken glass.
- Use of helicopters requires prior approval from LeChase Management and ES&H. Approval requires a completed lift plan and a pre-planning meeting.
- Helicopter picks will comply with all applicable regulations of the FAA and per 1926.551.

Critical Lifts

The following categories are considered **critical lifts** and require the contractor/subcontractor to **submit a detailed lift plan for review and acceptance by LeChase management and ES&H**:

- Lifts exceeding 75% of crane-rated capacity.
- Lifts requiring two or more cranes or additional equipment to assist in lifting simultaneously (in tandem).
- Lifts using any type of equipment to transport a worker, including personnel baskets.
- Lifts with helicopters over areas defined by the FAA as "congested areas" (areas people utilize or inhabit, such as non-wilderness areas).
- Unusual or complex lifts that exceed any site-specific or owner requirements.
- Lifts involving lifting of sensitive or critical equipment that can delay the schedule, or equipment with long lead order times.
- Lifts over personnel-occupied areas (e.g., buildings. sidewalks, etc.).
- Lifts requiring the crane to be set up over or adjacent to underground building structures, transportation tunnels, or retaining walls (e.g., parking garages, etc.).
- Lifts where any part of the crane or load encroaches onto or over highway, roadway, or railroad rights of way (unless the corridor is shut down to traffic).
- Lifts in the vicinity of power lines.

  NOTE: See also “Tower Cranes.”

Lift Plans

Lift plans must include but are not limited to:

- Position and configuration of the crane.
- Location of loads from start to finish.
- Details on rigging equipment, lifting devices, hardware. etc.
- Details on load, how to rig it, what rigging is needed, and stamped drawing (if needed)
- Timeline of the sequences of all lifts.
- How the weight of the equipment to be lifted was verified (e.g. shop drawings, certified scales, allowed maximum wind speed, etc.)

- Verification of ground conditions including underground utilities.
- Copies of any FAA determinations.
- Any crane computer overrides require written prior authorization from LeChase management and ES&H. The raising or lowering of most luffing jibs will fall in this category.

Safety

References

- OSHA 1926.1424 — Work Area Control
- OSHA 1926.1425 — Keeping Clear of the Load

OSHA 1926.1424 and OSHA 1926.1425 requirements must be met on all projects plus the following:

- Any employee assigned to work on or near the equipment ("authorized personnel") must be trained in recognizing pinch/crush hazard areas posed by the rotating superstructure.
- All employees must wear the proper PPE, including hard hats.
- Complete substantial control lines, railings or similar barriers to mark the boundaries of the hazard areas posed by the rotating superstructure must be maintained. Red danger tape, warning signs, and substantial barricades must be maintained by the subcontractor in accordance with posting and housekeeping requirements.
- Hoisting routes that minimize the exposure of employees to hoisted loads must be used.
- Before any employee goes to a hazard area that is out of the view of the operator, the employee (or someone instructed by the employee) must ensure that the operator is informed that he/she is going to that location. If the operator knows that an employee went to a hazard area that is out of their view, the operator must not rotate the crane until the operator is informed that the employee is in a safe position in accordance with the prearranged system of communication.
- While the operator is not moving a suspended load, no employee must be within the fall zone except for employees who are:
  - Engaged in hooking, unhooking, or guiding a load
  - Engaged in the initial attachment of the load to a component or structure
  - Operating a concrete hopper or concrete bucket
- No load **including working gear** can be left suspended and unattended. In the rare event that a crane operator needs to leave his cab while a load is suspended to check setup, verify measurement, or service the crane, etc., procedures will be implemented including:
  - Restricting access to the crane and fall zone with barricades
  - Ensuring the operator maintains visual contact with the crane while not in the cab
  - Any other procedures applicable to the specifics of the setup, load and lift

  These procedures will be reviewed and approved by LeChase management and ES&H before any operator may leave the cab while a load is suspended.
- All materials must be rigged by a qualified rigger (see "Rigging Requirements").
- Only employees needed to receive a load can be in the fall zone when a load is being landed.
- OSHA 1926.1425(e) requirements for tilt-up or tilt-down operations must be followed.

- All operational aids and safety devices must be in proper working order, including but not limited to crane level indicator, boom/jib stops, outrigger stabilization, and horns. Temporary alternative measures are not allowed for defective, damaged, or non- operational safety devices.
- Safety devices and operational aids cannot be used as a substitute for professional judgment.
- Lift routes must be designed to avoid lifting over personnel.
- Any crane computer/technology overrides require written prior authorization from LeChase management and ES&H. The raising or lowering of most luffing jibs will fall in this category.
- Cranes will only be operated in accordance with the manufacturer's specifications for the current configuration of the crane.
- Before any lift, the crane operator will sound the crane horn to warn of overhead load. The rigger will walk the path of the swing and use a whistle to alert all personnel of overhead load.
- A tag line will be used to control the swing of every load, including cribbing, counterweights, crane components, loads, etc., and to allow the person(s) receiving the load to remain at a safe distance.
- Each hook will have functioning safety latches. At no time can the latch be rendered inoperable or secured in the open position.
- If the crane experiences a shock load, is involved in an accident, or suffers other damage, it is to be taken out of service immediately and inspected by a qualified service technician capable of recognizing defects from the shock load. A third-party inspection is also required.
- If a rescue plan for a crane operator is needed, the subcontractor/crane vendor must develop and implement the plan and supply any needed rescue equipment.
- If lightning is seen, crane work must stop and commence only after 30 minutes have passed since the last lightning sighting.

Tower Cranes

- Tower cranes require OSHA pre- and post-erection inspection by a qualified person with documentation before jobsite usage. The crane owner or user conducts a pre-erection inspection to review key components, especially those connection points that cannot be inspected after the crane is erected, as they are not visible at the connection point when tower sections or components are connected.
- A third-party post-erection inspection is required any time a crane is assembled on site, reconfigured, repaired, or modified onsite, and if the crane is involved in an accident.
- Tower cranes require shift, daily, monthly, and annual written inspections per 29 CFR 1926.1435(f) and LeChase policy.
- A job hazard analysis work plan is required for the assembly, disassembly, and any tower section jumps.

Crane Pre-planning Agenda

- Scope of activity and date of pick(s)
- Crane Documentation Submittal Review:
  - OSHA 3rd-Party Annual Inspection

  - Crane Lift Plan or equivalent (see “Appendix A: Crane Lift Plan”)
  - Operator certifications, license, or documentation as required (only certified operators shall operate mobile or tower cranes on LeChase Projects)
  - Load Chart: Highlight the capacity at the furthest radius on the load chart
  - Verified Load Weights: Maximum radius and capacity
  - Site Plan/Sketch of crane location and adjacent hazards
- Name of Assembly/Disassembly Director (both qualified and competent person)
- Crane configuration:
  - Type or model of crane
  - Size of crane
  - Length of boom
  - Length of jib attachments
  - Maximum radius of pick
  - Configuration for side, back, rubber, etc.
  - Anti-two-block device
  - Weight of ball and deducts
  - Capacity of crane at stated configuration
- Setup (number of setups):
  - Locations of setups
  - Crane travel on site for initial setup or any other movement will be in accordance with the manufacturer’s specifications and applicable OSHA standards. The travel path and plan will be reviewed by LeChase management before any crane movement or travel. Factors to consider include: travel plan provided by subcontractor/vendor; travel surface, path and levelness; weights of equipment and travel surfaces (roads, bridges, etc., must support manufacturer specifications for traveling at any grades); proximity to overhead power lines; presence of underground utilities; proximity to excavations; or requirements for jibs to be stowed or other securement procedures.
  - Arrival date
  - Arrival time
  - Police presence (verified)
  - Street closure and permits, if applicable (verified)
  - Pedestrian control and signage (verified)
  - Duration
  - Underground utilities (identified and located on sketch)
  - Overhead utilities:
    - Voltage of overhead power lines
    - Verified by utility owner/operator
    - Height distance of overhead power lines during travel
    - Distance during setup
    - Distance during operation
    - Distance during travel

    - All crew, including dedicated spotter(s) and flaggers (must be trained)
  - Mat size and location (identified on site plan/sketch)
  - Any special staging requirements
  - Truck holding areas
  - Special truck permits or routing requirements
  - Barricades for pinch points of the rotating superstructure and swing radius in accordance with LeChase requirements
  - Method of communication to keep affected workers clear of landing zones and travel paths
  - Emergency procedures and procedures when deviation from documented plan is required (written approval by LeChase management and ES&H is required before any deviation or modification from the initial plan)
- Rigging:
  - Weight of picks: Verified by cut sheets of submittals, data plates.

    Note: Shipping labels or information from shipping/packing slips is not acceptable as the **sole** form of verification. Such documentation shall be verified by supporting documents such as load description (name, size, lengths, shape) and load weight (from manufacturer, design drawing, trucking company scale).Type of slings
  - Identification of points of attachment
  - Use of hooks, spreaders, shackles, etc.
  - Names of qualified riggers with copies of certifications
  - Signaling:
    - Name of qualified signal person. Provide copies of training records that specify the name of the person trained, date training was completed, expiration date, name and signature of the qualified instructor, and if the person was trained in hand signal communication, radio signal communication, or both. This documentation must be available on site.
    - Types of signals (voice or hand)
    - Method of signals (radio, squawk box, etc.)

      Note: All radios must be tested prior to use to ensure that the transmission is clear and readable. Each crane must use a separate channel if frequencies are available. The operator's radio must be equipped with a hands-free system. Radios cannot be used for personal communication or discussions not related to the operation at hand. Verification that the crane operator and other ground personnel communicating with the crane operator have been trained on how to properly use the radio equipment must be provided to the LeChase superintendent.
- Coordination with Air Traffic (if necessary):
  - Unit (Emergency Air Transport, etc.)
  - Flight path
  - ETA for incoming
  - FAA permit
  - Flag, light, etc.

- Method of communication for lay down/shutdown, by whom

Required Documentation

Before on site crane operation can begin, the following documentation must be provided to LeChase site management:

- Annual third-party inspections, including cover sheet if applicable and complete checklist with any recommendations or deficiencies documented as resolved.
- Calibration records for crane computer (provided before crane arrival on site). Crane computer shall be calibrated in accordance with manufacturer's specifications.
- Operator certification.
- Any state-mandated operator requirements, such as current physicals.
- Post-assembly written inspection completed by a qualified person
- A completed third-party inspection
- Street closure permits, if required. All DOT flaggers must have documented training.
- Specific OSHA-required documentation for all training and evaluation of operators, signal persons, riggers, the A/D Director, and competent/qualified personnel.
- A letter stating the following have been qualified or certified:
  - Crane operator (certified/licensed)
  - A/D (Assembly/Disassembly) Director
  - Rigger (qualified)
  - Competent person for shift inspection of rigging hardware and slings
  - Signal person (qualified)
  - Competent person for crane inspection (in some cases, this may be the crane operator)
  - Competent person for wire rope (crane hoisting line) inspection (in some cases this may be the crane operator)

  Note: See also "Tower Cranes."

Ongoing Documentation

Ongoing documentation is required for:

- Shift/daily inspections (see "Appendix B: Crane Operator Daily Inspection Checklist")
- Updated annual OSHA inspection
- Monthly crane inspections

Suspended Personnel Platforms Requirements

Reference: 29 CFR 1926.1431 Subpart CC- Cranes and Derricks in Construction

A pre-lift meeting with the operator, signal person, employees to be hoisted, and the person responsible for the task to be performed must be held and documented with sign-off and submitted to the LeChase construction superintendent. This meeting must recur if any crew members are added or replaced, and all crew changes must be documented on the meeting form.

A Crane Lift Worksheet and test pick must be completed for each configuration change or new setup and submitted to the LeChase superintendent and ES&H. The trial lift and proof test must be conducted for each setup and repeated when:

- There is a shift change
- The crane is left in the same setup overnight
- There is change in weather or supporting surfaces that would warrant repeat of a trial lift and proof test
- LeChase management and ES&H requires this for other reasons

In addition:

- Pre-lift plans showing boom angle and maximum intended load must be prepared for each group of lifts.
- Personnel platform plans must be approved in advance by the lift authorizer, LeChase site management, LeChase ES&H, and the designated lift supervisor.
- Personnel platforms must have current annual inspections documented by a third party.
- Personnel platforms can be considered only after determination by contractor that at no less hazardous means of access to the work are available or practical. Local regulations may require further restrictions.

Employee work platforms hoisted by cranes and derricks must meet the following requirements:

- Platforms can only be used during wind speeds (sustained or gusts) of less than 15 miles per hour. Personnel platforms cannot be lifted if wind speeds (sustained or gusts) are 15 miles per hour or greater.
- Platforms cannot be used during high winds, electrical storms, snow or other adverse weather conditions which could endanger workers.
- The platform load must not exceed 50 percent of the crane's lowest gross capacity for the current setup.
- A firm footing, uniformly level within one percent or one foot in 100 feet should be provided for cranes. Outriggers for cranes will be appropriately used during hoisting.
- The load line on which the platform is suspended will have control load lowering. A "free fall option" cannot be used with suspended work platforms.
- Lifting bridles for platforms must consist of four attached legs to ensure platform stability. The bridle must be secured to the lockable crane hook by a locking shackle or master link, and the lockable crane hook cannot be opened due to the load position on the hook. Eyes in wire rope slings must have thimbles. Each individual leg of the bridal must have the capacity marked. Bridles and associated rigging for suspending the personnel platform can be used only for the platform and the necessary employees, their tools, and materials necessary to do their work. Bridles and associated rigging must not have been used for any other purpose other than hoisting personnel.
- The platform must be enclosed with a guardrail system, including a top rail of approximately 42 inches, a mid-rail, and a toe board. The guardrail system must withstand a load of at least 200 pounds applied in any direction. The basket must be enclosed from at least the toe board to the mid-rail of the basket with either solid construction or expanded metal not having openings greater

than one-half inch. If test weights are attached with rods, they cannot create an opening in the base of the basket or in an area below the mid-rail that is more than one-half inch.

- The suspension system must be designed to minimize platform tipping when employees move on it.
- Signals must be visible or audible to the crane operator at all times. Durable and legible hand signal charts must be posted in the personnel platform.
- Use of a crane to hoist personnel is only allowed when other means are more hazardous or impossible (due to structural design, worksite conditions or other criteria as defined by LeChase management or ES&H).
- When the crane is stationary, all brakes must be engaged.
- Equipment must have properly functioning devices including boom angle indicators, hoist limiting devices, automatic anti-two-block devices, and controlled load lowering devices. Equipment must not be operated if these devices are not working (temporary alternative measures are not allowed on LeChase projects).
- The platform must support its own weight plus five times the maximum load and meet other structural requirements (e.g., guardrails, welds, grab rails, access gates/doors, headroom, and overhead protection). Access gates/doors must not swing outward and must be equipped with a device that prevents accidental opening. Grab rails must be installed inside the entire perimeter of the personnel platform except for access gates/doors.
- The weight of the platform and its rated capacity must be conspicuously posted on the work platform.
- Fall protection must be in accordance with OSHA 1926.1431 including the requirement for a personal fall arrest system (PFAS) to be attached to a structural member within the personnel platform, except when working over water. Over water, the requirements of 1926.106 apply.
- Hoisting must be in a slow, controlled, cautious manner with no sudden movements.
- All body parts must be kept inside the platform during hoisting.
- The platform must be secured to the structure before personnel exit or enter.
- When the signal person is not in the platform, employees being hoisted must be in direct communication with the operator or signal person.
- Hoisting personnel is prohibited:
  - Within 20 feet of a power line that is up to 350kv
  - Within 50 feet of a powerline that is over 350kv

  See 29 CFR 1926.1431(n) for details.
- A personnel platform cannot be directly attached to a luffing jib or any jib or other lifting device if the manufacturer does not allow it.
- No lifts must be made on any other of the equipment's load lines while personnel are being hoisted.
- Hoisting of employees while the equipment is traveling is prohibited.

Rigging Requirements

References

- 29 CFR 1926 Subpart CC — Cranes and Derricks in Construction

- 29 CFR 1910.184 — Slings
- 29 CFR 1926.552 — Material Hoists, Personal Hoists, and Elevators
- 29 CFR 1926.753 — Hoisting and Rigging
- 29 CFR 1926.251 — Material Handling
- 29 CFR 1926.251 — Rigging Equipment for Material Handling
- OSHA Publication 3072 — Sling Safety
- OSHA Publication 2236 — Material Handling and Storage
- OSHA Guidance on Safe Sling Use
- OSHA Standard Interpretations — Rigging Equipment/ Custom Designed Accessories
- OSHA Standard Interpretations — Load-Testing Custom Design Rigging Accessories & ASME Standards
- OSHA eTool — General Requirements Gear and Equipment for Rigging and Materials
- OSHA e-Tool — Steel Erection/Hoisting and Rigging

General

- Review job and task requirements prior to lift.
- Use only approved slings, chains, cables, and accessories.
- Know the weight of each pick, the heaviest pick, and the rated capacity of the slings.
- Use only slings that exceed the weight of the heaviest pick.
- Use custom designed lifts, clamps or lifting accessories that are designed and marked to indicate the safe working load, and proof-test them to 125 percent of their rated load.
- Use approved and rated skip pans for loose parts and small material. Ratings must be conspicuously posted on the skip pan.
- Do not overload skip pans so that loose parts can dislodge during the lift.
- Store rigging equipment properly.
- Use rigging equipment only for the activity for which it was intended.
- Remove defective equipment from service.
- Do not load rigging equipment in excess of its recommended safe working load.
- Remove rigging equipment that is not in use from the immediate work area to avoid tripping employees.
- Do not use makeshift fasteners formed from bolts, rods, wire, etc.
- Verify that wire rope cables used in hoisting, lowering, or pulling loads consist of one continuous piece without knots or splices.
- Follow manufacturer recommendations for the minimum number of clips to use when using U-bolt wire rope clips to form eyes or loops in any load bearing cable. Clips must be applied so the "saddle" portion of the clip does not contact the dead end of the cable.
- Equip hooks used for lifting with a safety latch.

Inspections

- Follow 29 CFR 1926.251 for all inspection criteria.
- Inspect all materials and rigging equipment before each use for safety.
- Assign a competent person to inspect slings, shackles, attachments, and rigging equipment for damage or defects before each use.
- Remove damaged or defective slings from service. This includes nylon slings where the colored safety thread is exposed or when chains or chokers are cracked or split, kinked, etc., or any sling with excessive damage as deemed by the competent person.
- Verify that hooks, rings, links, couplings, shackles, and attachments have a rated capacity at least equal to the slings, chain or cables.
- Do not use homemade or makeshift equipment unless documentation from a certified professional engineer is provided with rated capacity and testing requirements.
- Verify that the rated capacity is marked by the manufacturer on the sling, chain, cable, shackle or hook.
- Verify that all rigging equipment lists the use, capacity, and manufacturer via a tag or OSHA tables. Chain slings must also have a log book with periodic and annual inspections recorded.
- Do not use wire rope if the total number of visible broken wires exceeds ten percent of the total number of wires, or if the rope shows other signs of excessive wear, corrosion or defect.
- Verify that wire rope slings have permanently affixed, legible identification markings stating size, rated capacity for the type(s) of hitch(es) used, the angle upon which it is based, and the number of legs if more than one.
- Do not shorten nylon slings with knots, bolts, or other makeshift devices.
- Protect nylon slings from sharp edges.
- Do not use shock loading.

Raising and Landing Materials

- Know the weight of the material to be lifted, the capacity of the crane, the appropriate slings and rigging hardware, and the structural integrity of the landing zone.
- Truck motors/engines shall be in the off position and wheels chocked before rigging.
- Materials shall be rigged is stable and evenly distributed before lifting.
- Hands, feet, and fingers must remain clear of the load as the slings are being tightened.
- Only one worker will signal the operator at a time. If the operator, signal person or any crew member has a question as to safety at any time during any lift, a stop signal shall be given. If the operator recognizes the hazard or has a concern, the operator shall stop operations, and crane use cannot resume until all issues have been abated.
- Always land materials on blocking without pinching or catching the slings.
- Maintain and store rigging properly. For example, do not store synthetic slings in gang boxes where they may be damaged by tools, saw blades, etc.
- Keep walkways and egress clear when landing materials.
- Be sure the load is stable before removing the slings (chock pipe if necessary).

- Do not pull a sling from under a load if the load is resting on a sling.
- Use tag lines to move and position loads.
- Do not stand or walk under loads or direct loads over other workers.

Training

- Qualified riggers must be trained on the materials, methods, equipment, communications, and other items as necessary for safe performance of their tasks.
- All local criteria for cranes and rigging must be applied. Each employer must submit in writing a list of qualified riggers to LeChase management.
  - According to 29 CFR 1926.1401, a qualified rigger is “a rigger who meets the criteria for a qualified person. The definition for a ‘qualified person’ is a person who is identified by their employer and by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, successfully demonstrated the ability to solve/resolve problems relating to the subject matter the work, or the project.”
- A qualified rigger is required:
  - When cranes are assembled/disassembled
  - When employees are engaged in hooking, unhooking, or guiding the load
  - When a load is initially connected to a component or structure
  - When employees are within the fall zone
- A certified rigger, verified by an accredited agency, must meet the definition of a qualified rigger.
- The employer must verify that each rigger meets the definition of a qualified rigger by one of these methods:
  - The rigger has received oral or written and practical testing by a third party such as the local Joint Apprentice Training Committee (JATC) or other qualified training organization/trainer.
  - The rigger is certified by an accredited agency, such as NCCCO, NCCER or CIC.
- The employer must verify the competence of the qualified rigger. Documentation must be available upon request.
- If a rigger demonstrates lack of knowledge, the employer must not allow the employee to continue working as a signal person until the rigger is retrained and reassessed to confirm that the rigger meets the qualification requirements.
  - Training records must be available at the job site, and the lift director must verify and document on the lift plan that the rigger training record has been reviewed and is current.

Signaling Requirements

Reference: 29 CFR 1926.1419-.1422 Subpart CC — Cranes and Derricks in Construction

General

- A qualified signal person is required for every lift with a tower or mobile crane on any LeChase project.

- Qualified signal persons can use hand signals, voice, and audible signals.
- OSHA standard signals will be used at all times unless they do not meet the needs of the lift. In the rare event that non-standard hand signals are to be used, they must be agreed upon ahead of time by the signal person, operator, lift director, LeChase management and ES&H. Non-standard hand signals must be authorized by LeChase management and ES&H before use and documented on the lift plan. Signals must be appropriate to the conditions, and the ability to transmit them must be maintained at all times.
- Operations must stop if interference interrupts transmission of a signal, if any signal is unclear, or if the operator has safety concerns. If the operator becomes aware of a safety problem and needs to communicate with the signal person or any other crew member, the operator must safely stop operations. Operations must not resume until the operator and signal person agree that the problem has been resolved.
- Only one person can provide signals at a time. However, anyone who becomes aware of a potential safety problem must alert the operator or signal person by giving the stop or emergency stop signal.
- All signal directions must be given from the operator's perspective.
- If one signal person is signaling for more than one crane/derrick, he/she must use a clear, defined, and agreed upon system to identify the one to which they are signaling according to 29 CFR 1929.1419(m).
- Signaling devices must be tested before operations and use dedicated channels.
- Operators must be able to receive signals hands-free.
- Voice signals must be coordinated and include three elements in this order:
  - Function, direction
  - Distance and/or speed
  - Function, stop command
- Communication must be in a common language.
- Hand signal charts must be posted on the equipment or conspicuously posted in the vicinity of hoisting operations.

Training

- A qualified signal person must:
  - Know and understand the types of signals used, including hand signals.
  - Be competent in applying the signals used.
  - Understand equipment operation and limitations, including the crane dynamics involved in swinging and stopping loads and boom deflection from hoisting loads.
  - Know and understand the relevant requirements of 29 CFR 1926.1419 through 1926.1422 and 29 CFR 1926.1426.
  - Demonstrate, through an evaluation process, that he/she meets the requirements above through an oral or written test and a practical exam. Training records must be available at the job site and the lift director must verify and document that the signal person training record has been reviewed and is current on the lift plan. The training record will specify if the signal person has been trained in hand or radio signal communication or both.

- The employer/contractor must verify the training and evaluation of each signal person either through:
  - **Third Party Qualified Evaluator**: A worker who has been trained and demonstrated competence through oral or written and practical testing by a third party such as the local Joint Apprentice Training Committee (JATC) or other qualified training organization/trainer must meet the definition of a qualified signal person after the employer verifies the training and evaluation. Documentation must be available at the jobsite.
  - **Employer Qualified Evaluator**: The employer's qualified evaluator assesses the employee and determines that he/she meets the qualification requirements. (The results of these evaluations are non-portable and other employers are not permitted to use them to satisfy the requirements.) In addition:
    - Documentation of such evaluations/assessments must be available upon request.
    - Each employer must submit in writing the list of qualified signal persons to LeChase management.
    - Signal persons certified by an accredited agency (such as NCCCO, NCCER or CIC), must meet the definition of a qualified signal person.

If a signal person demonstrates lack of knowledge, the employer cannot 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.

Appendix A: Crane Lift Plan

The Lift Plan may be valid for more than one day, as long as the configuration, location, maximum expected load, and maximum expected radius do not change from the Lift Plan as submitted. The responsible contractor must also provide a drawing, rendering, or 3D lift plan in addition to this form.

Date Submitted:	Proposed Date(s) For Lift Start: Complete:
Contractor/ Rigging Company:	
Crane Company:	Crane Operator:
Qualified Rigger:	Certified Signal Person:
Project:	Lift Location/Nearest Building(s):
Description of Lifting Work to be done	
Description of Lifting Scope: number of days _____, number of items to be picked_____	

1. Crane Information			
Make	Model	Capacity (tons)	
Crane Total Boom Length for this Configuration (Boom only)	Jib Used?	Length	Offset, if Used
Will outriggers be fully extended? _____If not, please explain setting:			
Will the Lift be based on 360° crane use and chart? _____If not, please explain:			
Maximum Boom Length Required	Maximum Pick Radius Required		

2. Load Characteristics		
Description of Max Load		
Dimensions of Max Load		Provide sketch
Weight of Max Load	How was this determined?	Please attach calculations
What is the maximum safe wind speed allowed for the picks covered under this lift plan?		
Will the load be unbalanced? Y N If so, how will it be leveled during pick?		

3. Rigging Information
List Rigging Components (Please be specific – number, type, size, length, lift beam, capacity, etc.)
Worst Case Weight of Line, Block, and All Rigging:

4. Other Weights to be Considered to Determine Total Gross Load of Item to be Lifted	
a. Weight of Max Load	
b. Weight of Rigging:	
c. Added weight for factor of safety (minimum 20% of line a for uncertified weight)	

Total Gross Load:	

5. Crane Location/Clearances
Has Subcontractor developed a plan to control and protect vehicular and pedestrian traffic?
Will a full road blockage or partial road blockage be required?
Has PCC provided the contractor/crane company with locations of underground utilities or voids?
Has Subcontractor completed a to-scale elevation sketch or drawing depicting crane, adjacent structures, and load?
Has Subcontractor surveyed the area for overhead power lines and other hazards?
Will the load or any part of the crane be over any active or operating equipment, piping, etc.?
Will load be within 20 feet of active electrical lines, pipes, or process system at any time during pick?

6. Summary "Worst Case" Lift Scenario			
a. Max Pick Radius:	b. Total Gross Load:	c. Crane Chart Capacity @ Max Pick Radius:	d. % of Crane Capacity (line 6b/6c):

7. Critical Pick	**Yes**	**No**
Will crane(s) need to "walk" with loads?		
Will pick require more than one crane?		
Is total gross load more than 75% of rated capacity of crane at the max radius (line 6d)?		
Will pick lift/carry personnel?		
Will pick be made over occupied building or facility?		

8. Attachments Provided				
Plot Plan w/Crane Location etc.	Elevation Sketch	Weight Calculations for Max Load	Rigging List/Sketch	Appropriate Crane Charts
Traffic Control Plan		Other information contractor/rigger or crane operator deems appropriate		

Crane Company Competent Person	Signature: Date:
Subcontractor/Rigger Competent Person	Signature: Date:

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Appendix B: Crane Operator Daily Inspection Checklist

Crane name/number:	Crane type:	Crane capacity:	Date of inspection:
Location:	Hour Meter: Start:_____ Stop:	Total hours operated:	
Operator's name:		Oiler's name:	

INSTRUCTIONS: *Check all items indicated. Inspect and indicate as satisfactory (S), unsatisfactory (U), or not applicable (N/A).*

Walkaround Inspection	U	S	N/A
Safety guards and plates			
Carrier frame, rotate base			
General hardware			
Wire rope			
Reeving			
Block			
Hook			
Sheeves			
Boom/Jib			
Gantry, pendants, boom stops			
Walks, ladders, handrails			
Wind locks, chocks, stops			
Tires, wheels, tracks			
Leaks (fuel, oil, lube, water)			
Radius indicator			
Outrigger/locking device			

Operation Inspection	U	S	N/A
Area safety			
Unusual noises			
Control Action			
Brakes/boom/load/ rotate			
Crane stability			
No load test			
Fleeting sheeve			
Limit switches			

Operator Cab Inspection	U	S	N/A
Gauges			
Warning and indicator lights			
Control/brakes			
Visibility			
Load rating charts			
Safety devices			
Emergency stops			
List/trim indicators			
Boom Angle/Radius Indicator			

Machinery House Inspection	U	S	N/A
Housekeeping			
Engine/Compressor			
Leaks (fuel, lube, oil, Water)			
Lubrication			
Battery			
Lights			
Glass			
Clutch/Brake linings			
Electric motors			
Warning tags			
Fire extinguisher			

Comments:

LeChase Construction Services, LLC
Jobsite Safety Manual

Section 25 - Demolition

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Preparatory Operations

- ENGINEERING SURVEY. Prior to permitting employees to start demolition operations, a competent person shall conduct an engineering survey of the structure to determine the condition of the framing, floors, and walls, and the possibility of unplanned collapse of any portion of the structure. Any adjacent structure where employees may be exposed shall also be similarly checked. Determination shall be made of any exposure to hazardous material (i.e.: silica, lead, asbestos, fluorescent lights, mercury, PCB's, blood borne pathogens). The employer shall have in writing evidence that such a survey has been performed.
- No employee shall be permitted in any area that can be adversely affected when demolition operations are being performed. Only those employees necessary for the performance of the operations shall be permitted in these areas.
- When employees are required to work within a structure to be demolished which has been damaged by fire, flood, explosion, or other cause, the walls or floor shall be shored or braced.
- All electric, gas, water, steam, sewer, and other service lines shall be shut off, capped, or otherwise controlled, outside the building line before demolition work is started. In each case, any utility company which is involved shall be notified in advance.
- If it is necessary to maintain any power, water, or other utilities during demolition, such lines shall be temporarily relocated, as necessary, and protected.
- It shall also be determined if any type of hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous substances have been used in any pipes, tanks, or other equipment on the property. When the presence of any such substances is apparent or suspected, testing and purging shall be performed and the hazard eliminated before demolition is started.
- Where a hazard exists from fragmentation of glass, such hazards shall be removed.
- Where a hazard exists to employees falling through wall openings, the opening shall be protected to a height of approximately 42 inches.
- When debris is dropped through holes in the floor without the use of chutes, the area onto which the material is dropped shall be completely enclosed with barricades not less than 42 inches high and not less than 6 feet back from the projected edge of the opening above. Signs, warning of the hazard of falling material, shall be posted at each level. Removal shall not be permitted in this lower area until debris handling ceases above.
- All floor openings not used as material drops, shall be covered over with material substantial enough to support the weight of any load which may be imposed. Such material shall be properly secured to prevent its accidental movement.
- Except for the cutting of holes in floors for chutes, holes through which to drop materials, preparation of storage space, and similar necessary preparatory work, the demolition of exterior walls and floor construction shall begin at the top of the structure and proceed downward. Each story of exterior wall and floor construction shall be removed and dropped into the storage space before commencing the removal of exterior walls and floors in the story next below.
- Employee entrances to multi-story structures being demolished shall be completely protected by sidewalk sheds or canopies, or both, providing protection from the face of the building for a minimum of 8 feet. All such canopies shall be at least 2 feet wider than the building entrances or openings (1 foot wider on each side thereafter), and shall be capable of sustaining a load of 150 pounds per square foot.

Stairs, Passageways, and Ladders

- Only those stairways, passageways, and ladders designated as means of access t the structure of a building, shall be used. Other access ways shall be entirely closed at all times.
- All stairs, passageways, ladders, and incidental equipment thereto, which are covered by this section, shall be periodically inspected and maintained in a clean, safe condition.
- In a multi-story building when a stairwell is being used, it shall be properly illuminated by either natural or artificial means, and completely and substantially covered over at a point not less than two floors below the floor on which work is being performed. Access to the floor where the work is in progress shall be through a properly lighten, protected, and separate passageway.

Chutes

- No material shall be dropped to any point lying outside the exterior walls of the structure unless the area is effectively protected.
- All materials, chutes, or sections thereof, at an angle of more than 45 degrees from the horizontal, shall be entirely enclosed, except for opening equipped with closure at or about floor level for the insertion of materials. The openings shall not exceed 4 inches in height measured along the wall of the chute. At all stories below the top floor, such openings shall be kept closed when not in use.
- A substantial gate shall be installed in each chute at or near the discharge end. A competent employee shall be assigned to control the operation of the gate, and the backing and loading of trucks.
- When operations are not in progress, the area surrounding the discharge end of a chute shall be securely closed off.
- Any chute opening into which workers dump debris, shall be protected by a substantial guardrail approximately 42 inches above the floor or other surface no which the workers stand to dump the material. Any space between the chute and the edge of openings in the floors through which it passes shall be solidly covered over.
- Where the material is dumped from mechanical equipment or wheelbarrows, a securely attached toe board or bumper, not less than 4 inches thick and 6 inches high, shall be provided at each chute opening.
- Chutes shall be designed and constructed of such strength as to eliminate failure due to impact of materials or debris load therein.

Removal of Materials Through Floor Openings

Any openings cut in a floor for the disposal of materials shall be no longer in size than 25 percent of the aggregate of the total floor area, unless the lateral supports of the removed flooring remain in place. Floors weakened or otherwise made unsafe by demolition operations shall be shored to carry safely the intended imposed load from demolition operations.

Removal of Walls, Masonry Sections, and Chimneys

- Masonry walls, or other sections of masonry, shall not be permitted to fall upon the floors of the building in such masses as to exceed the safe carrying capacities of the floors.

- No wall section which is more than one story in height, shall be permitted to stand alone without lateral bracing, unless such wall was originally designed and constructed to stand without such lateral support, and is in a condition safe enough to be self-supporting. All walls shall be left in a stable condition at the end of each shift.
- Employees shall not be permitted to work on the top of a wall when weather conditions constitute a hazard.
- Structural or load-supporting members on any floor shall not be cut or removed until all stories above such a floor been demolished and removed. This provision shall not prohibit the cutting of floor beams for the disposal of materials or for the installation of equipment.
- Floor openings within 10 feet of any wall being demolished shall be planked solid, except when employees are kept out of the area below.
- In buildings of “skeleton-steel” construction, the steel framing may be left in place during the demolition of masonry. Where this done, all steel beams, girders, and similar structural supports shall be cleared of all loose materials as the masonry demolition progresses downward.
- Walkways or ladders shall be provided to enable employees to safely reach or leave any scaffold or wall.
- Walls which serve as retaining walls to support earth or adjoining structures, shall not be demolished until such earth has been properly braced or adjoining structures have been properly underpinned.
- Walls which are to serve as retaining walls against which debris will be piled, shall not be so used unless capable of safely supporting the imposed load.

Manual Removal of Floors

- Openings cut in a floor shall extend the full span of the arch between supports.
- Before demolishing any floor arch, debris and other material shall be removed from such arch and other adjacent floor area. Planks not less than 2 inches by 10 inches in cross section, full size undressed, shall be provided for, and shall be used by employees to stand on while breaking down floor arches between beams. Such planks shall be so located as to provide a safe support for the workers should the arch between the beams collapse. The open space between planks shall not exceed 16 inches.
- Safe walkways not less than 18 inches wide, formed of planks not less than 2 inches thick (if wood), or equivalent strength (if metal), shall be provided and used by workers when necessary to enable them to reach any point without walking upon exposed beams.
- Stringers of amply strength shall be installed to support the flooring planks, and the ends of such stringers shall be supported by floor beams or girders, and not by floor arches alone.
- Planks shall be laid together over solid bearings with the ends overlapping at least 1 foot.
- When floor arches are being removed, employees shall not be allowed in the area directly underneath, and such an area shall be barricaded to prevent access to it.
- Demolition of floor arches shall not be started until they and the surrounding floor area, for a distance of 20 feet, have been cleared of debris and any other unnecessary materials.

Removal of Walls, Floors, and Material with Equipment

- Mechanical equipment shall not be used on floors or working surfaces unless such floors or surfaces are of sufficient strength to support the imposed load.
- Floor openings shall have curbs or stop-logs to prevent equipment from running over the edge.

Storage

- The storage of waste material and debris on any floor shall not exceed the allowable floor loads.
- In buildings having wooden floor construction, the flooring boards may be removed from not more than one floor above grade to provide storage space for debris, provided falling material is not permitted to endanger the stability of the structure.
- When wood floor beams serve to brace interior walls of free-standing exterior walls, such beams shall be left in place until other equivalent support can be installed to replace them.
- Floor arches (to an elevation of not more than 25 feet above grade) may be removed to provide storage area for debris provided that such removal does not endanger the stability of the structure.
- Storage space into which material is dumped shall be blocked off, except for openings necessary for the removal of material. Such openings shall be kept closed at all times when material is not being removed.

Removal of Steel Construction

- When floor arches have been removed, planking shall be provided for the workers engaged in razing the steel framing.
- Cranes, derricks, and other hoisting equipment used shall meet the requirements specified in Section 23.
- Steel construction shall be dismantled column length by column length, and tier by tier (columns may be in two-story lengths).
- Any structural member being dismembered shall not be overstressed.

Mechanical Demolition

- No workers shall be permitted in any area, which can be adversely affected by demolition operations, when balling or clamming is being performed. Only those workers necessary for the performance of the operations shall be permitted in this area at any other time.
- The weight of the demolition shall not exceed 50 percent of the crane's rated load, based on the length of the boom and the maximum angle of operation at which the demolition ball will be used, or it shall not exceed 25 percent of the nominal breaking strength of the line by which it is suspended, whichever results in a lesser value.
- The crane boom and load line shall be as short as possible.
- The ball shall be attached to the load line with a swivel-type connection to prevent twisting of the load line, and shall be attached by positive means in such manner that the weight cannot become accidentally disconnected.
- When pulling over walls or portions thereof, all steel members affected shall have been previously cut free.

- All roof cornices or other such ornamental stonework shall be removed prior to pulling walls over.
- During demolition, continuing inspections by a competent person shall be made as the work progresses to detect hazards resulting from weakened or deteriorated floors, or walls, or loosened material. No employee shall be permitted to work where such hazards exist until they are corrected by shoring, bracing, of other effective means.

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Section 26 - Materials Handling, Use, Storage and Disposal

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General Requirements for Storage

- All materials stored in tiers shall be stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, falling, or collapse.
  - Maximum safe load limits of floors within buildings and structures, in pounds per square foot, shall be conspicuously posted in all storage areas, except for floor or slab on grade. Maximum safe loads shall not be exceeded.
  - Aisles and passageways shall be kept clear to provide for the free and safe movement of material handling equipment or employees. Such areas shall be kept in good repair.
  - When a difference in road or working levels exists, means such as ramps, blocking, or grading shall be used to ensure the safe movement of vehicles between the two levels.
- **MATERIAL STORAGE.** Material stored in buildings under construction shall not be placed within 6 feet of any hoistway or inside floor openings, nor within 10 feet of an exterior wall which does not extend above the top of the material stored.
  - Each employee required to work on stored material in silos, hoppers, tanks, and similar storage areas shall be equipped with personal fall arrest equipment.
  - Non-compatible materials shall be segregated in storage.
  - Bagged materials shall be stacked by stepping back the layers and cross-keying the bags at least every 10 bags high.
  - Materials shall not be stored on scaffolds or runways in excess of supplies needed for immediate operations.
  - Brick stacks shall not be more than 7 feet in height. When a loose brick stack reaches a height of 4 feet, it shall be tapered back 2 inches in every foot of height above the 4-foot level.
  - When masonry blocks are stacked higher than 6 feet, the stack shall be tapered back one-half block per tier above the 6-foot level.
  - Lumber:
    - Used lumber shall have all nails withdrawn before stacking.
    - Lumber shall be stacked on level and solidly supported sills.
    - Lumber shall be so stacked as to be stable and self-supporting.
    - Lumber piles shall not exceed 20 feet in height provided that lumber to be handled manually shall not be stacked more than 16 feet high.
  - Structural steel, poles, pipe, bar stock, and other cylindrical materials, unless racked, shall be stacked and blocked so as to prevent spreading or tilting.
- **HOUSEKEEPING.** Storage areas shall be kept free from accumulation of materials that constitute hazards from tripping, fire, explosion, or pest harborage. Vegetation control will be exercised when necessary.
- **DOCK BOARDS (BRIDGE PLATES).** Portable and powered dock boards shall be strong enough to carry the load imposed on them.
  - Portable dock boards shall be secured in position, either by being anchored or equipped with devices which will prevent their slipping.
  - Handholds, or other effective means, shall be provided on portable dock boards to permit safe handling.

- Possible protection shall be provided to prevent railroad cars from being moved while dock boards or bridge plates are in position.

Rigging Equipment for Material Handling

- **GENERAL.** Rigging equipment for material handling shall be inspected prior use on each shift and as necessary during its use to ensure that it is safe. Defective rigging equipment shall be removed from service.
  - Rigging equipment shall not be loaded in excess of its recommended safe working load, as prescribed in Tables H-1 through H-20.
  - Rigging equipment, when not in use, shall be removed from the immediate work area so as not to present a hazard to employees.
  - Special custom design grabs, hooks, clamps, or other lifting accessories, for such units as modular panels, pre-fabricated structures and similar materials, shall be marked to indicate the safe working loads and shall be proof-tested prior to use to 125 percent of their rated load.
  - **Scope.** This section applies to slings used in conjunction with other material handling equipment for the movement of material by hoisting, in employments covered by this part. The types of slings covered are those made from alloy steel chain, wire rope, metal mesh, natural or synthetic fiber rope (conventional three strand construction), and synthetic web (nylon, polyester, and polypropylene).
  - **Inspections.** Each day before being used, the sling and all fastenings and attachments shall be inspected for damage or defects by a competent person designed by the employer. Additional inspections shall be performed during sling use, where service conditions warrant. Damage or defective slings shall be immediately removed from service.
- **ALLOY STEEL CHAINS.** Welded alloy steel chain slings have permanently affixed durable identification starting size, grade, rated capacity, and sling manufacturer.
  - Hooks, rings, oblong links, pear-shaped links, welded or mechanical coupling links, or other attachments, when used with alloy steel chains, shall have a rated capacity at least equal to that of the chain.
  - Job or shop hooks and links, or make-shift fasteners, formed from bolts, rods, etc., or other such attachments, shall not be used.
  - Rated capacity (working load limit) for alloy steel chain slings shall conform to the values shown in Table H-1.
  - Whenever wear at any point of any chain link exceeds that shown in Table H-2, the assembly shall be removed from service.
  - **Inspections.** In addition to the inspection required by other paragraphs of this section, a thorough periodic inspection of alloy steel chain slings in use shall be made on a regular basis, to be determined on the basis of:
    - Frequency of sling use
    - Severity of service conditions
    - Nature of lifts being made
    - Experience gained on the service life of slings used in similar circumstances

    Such inspections shall in no event be at intervals greater than once every 12 months.

- The employer shall make and maintain a record of the most recent month in which each alloy steel chain sling was thoroughly inspected, and shall make such record available for examination.

- **WIRE ROPE.** Tables H-3 through H-14 shall be used to determine the safe working loads of various sizes and classifications of improved plow steel wire rope and wore rope slings with various types of terminals. For sizes, classifications, and grades not includes in these tables, the safe working load recommended by the manufacturer for specific, identifiable products shall be followed, provided that a safety factor of not less than 5 is maintained.
  - Protruding ends of strands in splices on slings and bridles shall be covered or blunted.
  - Wire rope shall not be secured by knots, except on haul back lines on scrapers.
  - The following limitations shall apply to the use of wire rope:
    - An eye splice made in any wire rope shall have not less than three full tucks. However, this requirement shall not operate to preclude the use of another form of splice or connection which can be shown to be as efficient and which is not other prohibited.
    - Except for eye splices in the ends of wires and for endless rope slings, each wire rope used in hoisting or lowering, or in pulling loads, shall consist of one continuous piece without knot or splice.
    - Eyes in wire rope bridles, slings, or bull wired shall not be formed by wire rope clips or knots.
    - Wire rope shall not be used if, in any length of 8 diameters, the total number of visible broken wires exceeds 10 percent of the total number of wires, or if the rope shows other signs of excessive wear, corrosion, or defect.
  - When U-bolt wire rope clips are used to form eyes, Table H-20 shall be used to determine the number and spacing of clips. When used for eye splices, the U-bolt shall be applied so that the “U” section is in contact with the dead end of the rope.
  - Slings shall not be shortened with knots or bolts or other makeshift devices.
  - Sling legs shall not be kinked.
  - Slings used in a basket hitch shall have the loads balanced to prevent slippage.
  - Slings shall be padded or protected from the sharp edges of their loads.
  - Hands or fingers shall not be placed between the sling and its load while the sling is being tightened around the load.
  - Shock loading is prohibited.
  - Minimum Sling Lengths.
    - Cable-laid and 6 x 19 and 6 x 37 slings shall have minimum clear length of wire rope 10 times the component rope diameter between splices, sleeves, or end fittings.
    - Braided slings shall have a minimum clear length of wire rope 40 times the component rope diameter between the loops or end fittings.
    - Cable laid grommets, strand laid grommets, and endless lings shall have a minimum circumferential length of 96 times their body diameter.
  - **Safe Operating Temperatures.** Fiber core wire rope slings of all grades shall be permanently removed from service if they are exposed to temperatures in excess of 200°F (93.33°C). When non-fiber core wire rope slings of any grade are used at temperatures above 400°F (204.44°C),

or below minimum 60°F (15.55°C), recommendations of the sling manufacturer regarding use at that temperature shall be followed.

- **End Attachments.** Welding of end attachments, except covers to thimbles, shall be performed prior to the assembly of the sling. All welded end attachments shall not be used unless proof tested by the manufacturer or equivalent entity at twice their rated capacity prior to initial use. The employer shall retain a certificate of proof test, and make it available for examination.

- **NATURAL ROPE AND SYNTHETIC FIBER.** When using natural or synthetic fiber rope slings, Tables H-15, H-16, H-17, and H-18, shall apply.
  - All spices in rope slings provided by the employer shall be made in accordance with fiber rope manufacturer's recommendations.
    - In manila rope, eye splices shall contain at least three full tucks, and short splices shall contain at least six full tucks (three on each side of the center line of the splice).
    - In laid synthetic fiber rope, eye splices shall contain at least four full tucks, and short splices shall contain at least eight full tucks (four on each side of the center line of the splice).

      Strand-end tails shall not be trimmed short (flush with the surface of the rope) immediately adjacent to the full tucks. This precaution applies to both eye and short splices and all types of fiber rope. For fiber ropes under 1-inch diameter and larger, the tails shall project at least 6 inches beyond the last full tuck. In applications where the projecting tails may be objectionable, the tails shall be tapered and spliced into the body of the rope using at least two additional tucks (which will require a tail length of approximately six rope diameters beyond the last full tuck).
    - For all eye splices, the eye shall be sufficiently large to provide an included angle of not greater that 60° at the splice when the eye is placed over the load or support.
    - Knots shall not be used in lieu of splices.
  - **Safe Operating Temperatures.** Natural and synthetic fiber rope slings, except for wet frozen slings, may be used in a temperature range from minus 20°F.

    (-28.88°C), to plus 180°F (82.2°C) without decreasing the working load limit. For operations outside this temperature range and for wet frozen slings, the sling manufacturer's recommendations shall be followed.
  - **Splicing.** Spliced fiber rope slings shall not be used unless they have been spliced in accordance with the following minimum requirements and in accordance with any additional recommendations of the manufacturer:
    - In manila rope, eye splices shall consist of at least three full tucks, and short splices shall consist of at least six full tucks, three on each side of the splice center line.
    - In synthetic fiber rope, eye splices shall consist of at least four full tucks, and short splices shall consist of at least eight full tucks, four on each side of the center line.
    - Strand end tails shall not be trimmed flush with the surface of the rope immediately adjacent to the full tucks. This applies to all types of fiber rope and both eye and short splices. For fiber rope under one inch (2.54cm) in diameter, the tail shall project at least six rope diameters beyond the last full tuck. For fiber rope one inch (2.54cm) in diameter and larger, the tail shall project at least 6 inches (15.24cm) beyond the last full tuck. Where a projecting

tail interferes with the use of the sling, the tail shall be tapered and spliced into the body of the rope using at least two additional tucks (which will require a tail length of approximately six rope diameters beyond the last full tuck).
    - Fiber rope slings shall have a minimum clear length of rope between eye splices equal to 10 times the rope diameter.
    - Knots shall not be used in lieu of splices.
    - Clamps not designed specifically for fiber ropes shall not be used for splicing.
    - For all eye splices, the eye shall be of such size to provide an included angle of not greater than 60 degrees at the splice when the eye is placed over the load or support.
  - **End Attachments**. Fiber rope slings shall not be used if end attachments in contact with the rope have sharp edges or projections.
  - **Removal from Service.** Natural and synthetic fiber rope slings shall immediately be removed from service is any of the following conditions are present:
    - Abnormal Wear
    - Powdered fiber between strands
    - Broken or cut fibers
    - Variations in the size or roundness of strands
    - Discoloration or rotting
    - Distortion of hardware in the sling
- **SYNTHETIC WEBBING (NYLON, POLYESTER, AND POLYPROPYLENE).** The employer shall have each synthetic web sling marked or coded to show:
  - Name and trademark of manufacturer
  - Rated capacities for the type of hitch; and
  - Type of material

  Rate capacity shall not be exceeded.
  - **Webbing.** Synthetic webbing shall be of uniform thickness and width and selvage edges shall not be split from the webbing's width.
  - Fittings shall be:
    - Of a minimum breaking strength equal to that of the sling
    - Free of all sharp edges that could in any way damage the webbing
  - **Attachment of End Fittings to Webbing and Formation of Eyes.** Stitching shall be the only method used to attach end fittings to webbing and to form eyes. The thread shall be in an even pattern and contain a sufficient number of stitches to develop the full breaking strength of the sling.
  - **Environmental Conditions.** When synthetic web slings are used, the following precautions shall be taken:
    - Nylon web slings shall not be used where fumes, vapors, sprays, mists, or liquids of acids or phenolics are present.
    - Polyester and polypropylene web slings shall not be used where fumes, vapors, sprays, mists, or liquids of caustics are present.

  - Web slings with aluminum fittings shall not be used where fumes, vapors, sprays, mists, or liquids of caustics are present.
- **Safe Operating Temperatures.** Synthetic web slings of polyester and nylon shall not be used at temperatures in excess of 180°F (82.2°C). Polypropylene web slings shall not be used in temperatures in excess of 200°F (93.33°C).
- **Removal from Service.** Synthetic web slings shall be immediately removed from service if any of the following conditions are present:
  - Acid or caustic burns
  - Melting or charring of any part of the sling surface
  - Snags, punctures, tears, or cuts
  - Broken or worn stitches
  - Distortion of fittings

- **SHACKLES AND HOOKS.** Table H-19 shall be used to determine the safe working loads of various sizes of shackles, except that higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products, provided that a safety factor of not less than 5 is maintained.

  The manufacturer's recommendations shall be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks. All hooks for which no applicable manufacturer's recommendations are available shall be tested to twice the intended safe working load before they are initially put into use. The employer shall maintain a record of the dates and results of such tests.

Disposal of Waste Materials

- Whenever materials are dropped more than 20 feet to any point lying outside the exterior walls of the building, an enclosed chute of wood, or equivalent material, shall be used. For the purpose of this paragraph, an enclosed chute is a slide, closed in on all sides, through which material is moved from a high place to a lower one.
- When debris is dropped through holes in the floor without the use of chutes, the area onto which the material is dropped shall be completely enclosed with barricades not less than 42 inches high and not less than 6 feet back from the projected edge of the opening above. Signs warnings of the hazard of falling materials shall be posted at each level. Removal shall not be permitted in this lower area until debris handling ceases above.
- All scrap lumber, waste material, and rubbish shall be removed from the immediate work area as the work progresses.
- Disposal of waste materials or debris by burning shall comply with local fire regulations.
- All solvent waste, oily rags, and flammable liquids shall be kept in fire resistant covered containers until removed from the work site

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Section 27 - Environmental Safety and Health

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Introduction

The dumping of hazardous waste poses a significant threat to the environment. Hazardous waste – discarded chemicals that are toxic, flammable or corrosive – can cause fires, explosions, and pollution or air, water, and land. Unless hazardous waste is properly treated, stored, or disposed of, it will continue to do great harm to all living things that come into contact with it now or in the future.

This Section covers workers involved in cleanup operations at uncontrolled hazardous waste sites and at EPA-licensed waste treatment, storage and disposal (TSD) facilities; as well as workers responding to emergencies involving hazardous materials (e.g., spills). In other words, if you have chemicals on-site and you have the possibility of a leak or spill you may fall under the emergency response requirements.

This Section discusses requirements for hazardous waste operations and emergency response at uncontrolled hazardous waste site and TSD facilities and summarizes that steps that must take to protect the health and safety of workers in these environments.

Received written program must include specific and detailed information on the following topics:

- An organization work plan.
- Site evaluation and control.
- A site-specific program.
- Information and training program.
- Personal protective equipment program.
- Monitoring.
- Medical surveillance program.
- Decontamination procedures.
- Emergency response program.

Work Plan

Planning is the key element in a hazardous waste control program. Proper planning will greatly reduce worker hazards at waste sites. A work plan should support the overall objectives of the control program and provide procedures for implementation and should incorporate a standard operating procedure for safety and health. Establishing a chain of command will specify responsibilities in carrying out the plan.

For example, the plan should include the following:

- Supervisor and employee responsibilities and means of communication.
- Name of person who supervises all of the hazardous waste operations.
- The site supervisor with responsibility for an authority to develop and implement the site safety and health program and to verify compliance.

In addition to this organizational structure, the plan should define the tasks and objectives of site operation as well as the logistics and resources required to fulfill these tasks. For example, the following topics should be addressed:

- The anticipated clean-up and/or operating procedures.
- A definition of work tasks and objectives and methods of accomplishment.
- The established personnel requirements for implementing the plan.

- Procedures for implementing training, informational programs, and medical surveillance requirements.

Site Evaluation and Control

Site evaluation, both initial and periodic, is crucial to the safety and health of workers. Site evaluation proves the information needed to identify site hazards so they can select appropriate protection methods for employees.

It is extremely important, and a requirement that a trained person conduct a preliminary evaluation of an uncontrolled hazardous waste site before entering the site. The evaluation must include all suspected conditions that are immediately dangerous to life or health or that may cause serious harm to employees (e.g., confined space entry, potentially explosive or flammable situation, visible vapor clouds, etc.). As available, the evaluation must include the location and size of the site, site topography, site accessibility by air and roads, pathways for hazardous substances, to disperse, a description of worker duties, and the time needed to perform a given task, as well as the present status and capabilities of the emergency response teams.

Periodic re-evaluations should also be conducted for treatment, storage, and disposal facilities, as conditions or operations change.

Controlling the activities of workers and the movement of equipment is an important aspect of the overall plan. Effective control of the site will minimize potential contamination of workers, protect the public from hazards, and prevent vandalism. The following information is useful in implementing the site control program: a site map, site work zones, site communication, safe work practices, and the name, location, and phone number of the nearest medical assistance.

The use of a “buddy system” is also required as a protective measure to assist in the rescue of an employee who becomes unconscious, trapped, or seriously disabled on site. In the buddy system, two employees must keep an eye on each other and only one should be in a specific dangerous area at one time, so that if one gets in trouble, the second can call for help.

Site-Specific Safety and Health Plan

A site-specific safety and health plan is a complementary program element that aids in eliminating or effectively controlling anticipated safety and health hazards. The site-specific plan must include all of the basic requirements of the overall safety and health program, but with attention to those characteristics unique to the particular site. For example, the site-specific plan may outline procedures for confined space entry, air and personal monitoring and environmental sampling, and a spill containment program to address the particular hazards present at the site.

The site safety and health plan must identity the hazards of each phase of the specific site operation and must be kept on the work site. Pre-entry briefings must be conducted prior to site entry and at other times as necessary to ensure that employees are aware of the site safety and health plan and its implementation. LCS must also ensure that periodic safety and health inspections are made of the site and that all known deficiencies are corrected prior to work at the site.

Information and Training Program

As a part of the safety and health program, there are requirements to develop and implement a program to inform workers (including subcontractors) performing hazardous waste operations of the

level and degree of exposure they are likely to encounter. An emergency response team should be selected and trained to handle any foreseeable chemical emergency.

There also are requirements to develop and implement procedure for introducing effective new technologies that provide worker protection in hazardous waste operations. Examples include foams, absorbents, adsorbents, neutralizers, etc.

Training makes workers aware of the potential hazards they may encounter and provides the necessary knowledge and skills to perform their work with minimal risk to their safety and health. A training program for all employees exposed to safety and health hazards during hazardous waste operations must be developed. Both supervisors and workers must be trained to recognize hazards and to prevent them; to select, care for and use respirators properly as well as other types of personal protective equipment; to understand engineering controls and their use; to use proper decontamination procedures; to understand the emergency response plan, medical surveillance requirement, confined space entry procedures, spill containment program, and any appropriate work practices. Workers also must know the names of personnel and their alternates responsible for site safety and health. The amount of instruction differs with the nature of the work operations, as indicated in Tables 1 and 2.

Employees at all sites must not perform any hazardous waste operation unless they have been trained to the level required by their job function and responsibility and have been certified by their instructor as having completed the necessary training. All emergency responders must receive refresher training sufficient to maintain or demonstrate competency annually. Employee training requirements are further defined by the nature of the work (e.g., temporary emergency response personnel, fire fighters, safety officers, HAZMAT personnel, incident commanders, etc.).

These requirements may include recognizing and knowing the hazardous materials and their risks, knowing how to select and use appropriate control, containment, or confinement procedures and how to implement them. For a brief summary of training requirements, see Tables 1 and 2.

Employees who receive the training specified (Table 1) must be given a written certificate upon successful completion of that training. That training need not be repeated if the employee goes to work at a new site; however, the employee must receive whatever additional training is needed to work safety at the new site.

Table 1 – Training Requirements – Hazardous Waste Clean-Up Sites

Routine site employees	40	Hour initial
	24	Hour field
	8	Hours annual refresher
Routine site employees	24	Hours initial
(minimal exposure)	8	Hours field
	8	Hours annual refresher
Non-routine site employees	24	Hours initial
	8	Hours field
	8	Hours annual refresher
Supervisor/Managers of		
Routine site employees	40	Hours initial
	24	Hours field
	8	Hours hazardous waste management
	8	Hours annual refresher
Routine site employees	24	Hours initial
(minimal exposure)	8	Hours field
	8	Hours hazardous waste management
	8	Hours annual refresher
Non-routine site employees	24	Hours initial
	8	Hours field
	8	Hours hazardous waste management
	8	Hours annual refresher
Treatment, Storage, and Disposal Sites Staff		
General Site Employees	24	Hours initial refresher
	8	Hours annual refresher
Emergency response personnel		Trained to level of competency Annual refresher

Table 2 – Training Requirements – Other Emergency Response Staff

Level 1	First responder (awareness) level[1]	Sufficient training or proven experience in specific competencies Annual refresher
Level 2	First responder (operations) level[2]	Level 1 competency and 8 hours initial or proven experience in specific competencies Annual refresher
Level 3	HAZMAT technician[3]	24 Hours of Level 2 and proven experience in specific competencies Annual refresher
Level 4	HAZMAT specialist[4]	24 Hours of Level 3 and proven experience in specific competencies Annual refresher
Level 5	On-the-scene Incident commander[5]	24 Hours of Level 2 and additional competencies Annual refresher

1 Witness or discovers a release of hazardous materials and who are trained to notify the proper authorities.

2 Responds to releases of hazardous substances in a defensive manner, without trying to stop the releases.

3 Responds aggressively to stop the release of hazardous substances.

4 Responds with an in support of HAZMAT technicians, but who have specific knowledge of various hazardous substances.

5 Assumes control of the incident scene beyond the first-responder awareness level.

Personal Protective Equipment Program

This Section further requires development of a written personal protective program for all employees involved in hazardous waste operations. As mentioned earlier, this program is also part of the site-specific safety and health program. The personal protective equipment program must include an explanation of equipment selection and use, maintenance and storage, decontamination and disposal, training and proper fit, donning and doffing procedures, inspection, in-use monitoring, program evaluation, and equipment limitations.

The use of personal protective equipment where engineering control methods are infeasible to reduce worker exposures at or below the permissible exposure limit are also required. Personal protective equipment must be selected that is appropriate to the requirements and limitations of the site, the task-specific conditions and duration, and the hazards and potential hazards identified at the site.

Monitoring

Airborne contaminants can present a significant threat to employee safety and health, thus making air monitoring an important component of an effective safety and health program. Monitoring before site entry at uncontrolled hazardous waste sites to identify conditions immediately dangerous to life and health, such as oxygen-deficient atmospheres and areas where toxic substance exposures are above

permissible limits must be conducted. Accurate information on the identification and quantification of airborne contaminants is useful for the following:

- Selecting personal protective equipment.
- Delineating areas where protections and controls are needed.
- Assessing the potential health effects of exposure.
- Determining the need for specific medical monitoring.

After a hazardous waste cleanup operation begins, periodic monitoring for those employees who are likely to have higher exposures to determine if they have been exposed to hazardous substances in excess of permissible exposure limits is required.

Medical Surveillance

A medical surveillance program will help to assess and monitor the health and fitness of employees working with hazardous substances. A medical surveillance program for the following must be established.

- All employees exposed or potentially exposed to hazardous substances or health hazards above the permissible exposure limits for more than 30 days per year.
- Workers exposed above the published exposure levels (if there is no permissible exposure limit for these substances) for 30 days or more a year.
- Workers who wear approved respirators for 30 or more days per year on site.
- Workers who are exposed to unexpected or emergency releases of hazardous wastes above exposure limits (without wearing appropriate protective equipment) or who show signs, symptoms or illness that may be resulted from exposure to hazardous substances.
- Members of hazardous materials (HAZMAT) terms.

All examinations must be performed under the supervision of a licensed physician, without cost to the employee, without loss of pay and at a reasonable time and place. Examinations must include a medical and work history with special emphasis on symptoms related to the handling of hazardous substances and health hazards and to fitness for duty including the ability to wear any required personal protective equipment under conditions that may be expected at the work site. These examinations must be given as follows:

- Prior to job assignment and annually thereafter (or every 2 years if a physician determines that is sufficient).
- At the termination of employment.
- Before re-assignment to an area where medical examinations are not required.
- If the examining physician believes that a periodic follow-up is medically necessary.
- As soon as possible for employees injured or becoming ill from exposure to hazardous substances during an emergency, or who develop signs or symptoms of overexposure from hazardous substances.

The examining physician must have a copy of the standard and its appendices, a description of the employee's duties relating to his/her exposure, the exposure level or anticipated exposure level, a description on any personal protective and respiratory equipment used or to be used, and any information for previous medical examinations.

A written opinion from the physician that contains the results of the medical examination and any detected medical conditions that would place the employee at an increased risk from exposure, any recommended limitations on the employee or upon the sue of personal protective equipment, and a statement that the employee has been informed by the physician of the results of the medical examination must be obtained. The physician is not to reveal in the written opinion specific findings or diagnoses unrelated to employment.

Decontamination Procedures

Decontamination procedures are a component of the site-specific safety and health plan and, consequently, must be developed, communicated to employees, and implemented before workers enter a hazardous waste site. As necessary, the site safety and health officer must require and monitor decontamination of the employee or decontamination and disposal of the employee's clothing and equipment, as well as the solvents use for decontamination, before the employee leaves the work area.

If an employee's non-impermeable clothing becomes grossly contaminated with hazardous substances, the employee must immediately remove that clothing and take a shower.

Impermeable protective clothing must be decontaminated before being removed by the employee.

Protective clothing and equipment must be decontaminated, cleaned, laundered, maintained, or replaced to retain effectiveness. Any person who launders or cleans such clothing or equipment of the potentially harmful effects of exposure to hazardous substances must be informed.

Emergency Response

Proper emergency planning and response are import elements of the safety and health program that help minimize employee exposure and injury. The standard requires that the employer develop and implement a written emergency response plan to handle possible emergencies before performing hazardous waste operations. The plan must include, at uncontrolled hazardous waste sites and at treatment, storage, and disposal facilities, the following elements:

- Personnel roles, lines of authority, and communication procedures.
- Pre-emergency planning.
- Emergency recognition and prevention.
- Emergency medical and first-aid treatment.
- Methods of procedures for alerting onsite employees.
- Safe distances and places of refuge.
- Site security and control.
- Decontamination procedures.
- Critique of response and follow-up.
- Personal protective and emergency equipment.
- Evacuation routes and procedures.

In addition to the above requirements, the plan must include site topography, layout, and prevailing weather conditions; and procedures for reporting incidents to local, state, and federal government agencies.

The procedures must be compatible with and integrated into the disaster, fire and/or emergency response plans of the sites nearest local, state and federal agencies. Emergency response organizations may use the local or state emergency response plans, or both, as part of their emergency response plan to avoid duplication of federal regulations.

The plan requirements also must be rehearsed regularly, reviewed periodically, and amended, as necessary, to keep them current with new or changing site conditions or information. A distinguishable and distinct alarm system must be in operation to notify employees or emergencies. The emergency plan also must be made available for inspection and copying by employees, their representatives, and other governmental agencies with relevant responsibilities.

When deemed necessary, employees must wear positive-pressure self-contained breathing apparatus and approved self-contained compressed-air breathing apparatus with approved cylinders. In addition, back-up and first-aid support personnel must be available for assistance or rescue.

Engineering Controls and Work Practices

To the extent feasible, the employer engineering controls and work practices to help reduce and maintain employee exposure at or below permissible exposure limits must be instituted. To the extent not feasible, engineering and work practice controls may be supplemented with personal protective equipment.

Examples of suitable and feasible engineering controls include the use or pressurized cabs of control booths on equipment, and/or remotely operated materials handling equipment. Examples of safe work practices include removing all non-essential employees from potential exposure while opening drums, wetting down dusty operations, and placing employees upwind of potential hazards.

Sanitation of Temporary Workplaces

Each temporary worksite must have a supply of potable water that is stored in tightly closed and clearly labeled containers and equipped with a tap. Disposal cups and a receptacle of cup disposal must also be provided. The employer must also clearly mark all water outlets that are unsafe for drinking, washing, or cooking. Temporary worksites must be equipped with toilet facilities. If there are no sanitary sewers close to or on the hazardous waste site, the employer must provide privies, chemical toilets, re-circulating or combustion toilets unless prohibited by local codes.

Heated, well-ventilated, and well-lighted sleeping quarters must be provided for workers who guard the worksite. In addition, washing facilities for all workers must be near the worksite, within controlled work zones, and so equipped to enable employees to remove hazardous substances.

Record Keeping

“Access to Employee Exposure and Medical Records” permits direct access to these records by employees exposed to hazardous materials, or by their designated representatives, and by OSHA. Exposure records for 30 years and medicals records for at least the duration of employment plus 30 years must be kept. Records of employee who have worked for less than 1 year need not be retained after employment, but the employer must provide these records to the employee upon termination of employment. First-aid of one-time treatment need not be retained for any specified period.

Each employee must be informed of the existence, location, and availability of these records.

Under the hazardous waste standard, at a minimum, medical records must include that following information:

- Employee's name and social security number.
- Physician's written opinions.
- Employee's medical complaints related to exposure to hazardous substances.
- Information provided to the treating physician.

Summary

Hazardous wastes and/or spilled chemicals, when not handled properly, can pose a significant safety and health risk. This section provides the information and training necessary to improve work place safety and health, thereby greatly reducing the number of injuries and illnesses resulting from exposure to hazardous waste.

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Section 28 - Mold

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Mold

Mold (fungi) is present everywhere – indoors and outdoors. There are more than 100,000 species of mold. There are thousands of types of molds and yeast; the two groups of plants in the fungus family. Yeasts are single cells that divide to form clusters. Molds consist of many cells that grow as branching threads called hypae. Although both groups can probably cause allergic reactions, a smaller number of molds are widely recognized offenders. Some of the most commonly found are species of Cladosporium, Penicillium, and Aspergillus. The seeds or reproductive particles of fungi are called spores. They differ in size, shape, and color among species. Each spore that germinates can give rise to new mold growth, which in turn can produce millions of spores. Mold is most likely to grow where there is water or dampness such as bathrooms and basements.

Health Effects

Most types of mold that are routinely encountered are not hazardous to healthy individuals. However, too much exposure to mold may cause or worsen conditions such as asthma, hay fever, or other allergies. The most common symptoms of overexposure are cough, congestion, runny nose, eye irritation, and aggravation of asthma. Depending on the amount of exposure and a person's individual vulnerability, more serious health effects such as fevers and breathing problem can occur, but are unusual.

- **Mold Allergy** – When inhaled, microscopic fungal spores or sometimes fragments of fungi may cause allergic rhinitis. Because they are so small, mold spores may evade the protective mechanisms of the nose and upper respiratory tract to reach the lungs. In a small number of people, symptoms of mold allergy may be brought on or worsened by eating certain foods such as cheeses, process with fungi. Occasionally, mushrooms, dried fruits, and foods containing yeast like soy sauce, or vinegar will produce allergic symptoms. There is no known relationship however between a respiratory allergy to the mold Penicillium and an allergy to the drum penicillin made from the mold. Along with pollen from trees, grasses, and weeds, molds are an important cause of seasonal allergic rhinitis. People allergic to molds may have symptoms from spring to late fall. The mold season often peaks from July to late summer. Unlike pollens, molds may persist after the first killing frost. Some however can grow at subfreezing temperatures, but most become dormant. Snow cover lowers the outdoor mold count dramatically but does not kill molds. After the spring thaw mold thrive on the vegetation that has been killed by the winter cold. In the warmest areas of the United States though, molds thrive all year and can cause year-round (perennial) allergic problems. In addition, molds growing indoors can cause perennial allergic rhinitis even in the coldest climates. Like pollens, mold spores are important airborne allergens only if they are abundant, easily carried by air currents, and allergenic in their chemical makeup. Found almost everywhere, mold spores in some areas are so numerous they often outnumber the pollens in the air. Fortunately, only a few dozen different types are significant allergens. In general, Alternaria and Cladosporium (Hormodendrum) are the molds most commonly found both indoors and outdoors throughout the United States. Aspergillus, Penicillium, Helminthosporium, Epicoccum, Fusarium, Mucor, Rhizopus, and Aureobasidium (Pullularia) are also common.

- **Mold-related disorders** – Fungi or microorganisms related to them may cause other health problems similar to allergic diseases. Some kinds of Apergillus may cause several different

illnesses, including both infections and allergy. These fungi may lodge in the airways or a distant part of the lung and grow until they form a compact sphere known as a “fungus ball.” In people with lung damage or serious underlying illnesses, Aspergillus may grasp the opportunity to invade the lungs or the whole body. In some individuals, exposure to these fungi also can lead to asthma or to a lung disease resembling sever inflammatory asthma called allergic brochopulmonary aspergillosis. This condition which occurs only in a minority of people with asthma is characterized by wheezing, low-grade fever, and coughing up of brown-flecked masses or mucus plugs.

- **Stachybotrys chartarum** – also known as Stachybotrys atra is a type of mold that has been associated with health effects in people. It is a greenish-black mold that can grow on materials with high cellulose content such as drywall sheetrock, dropped ceiling tiles, and wood that become chronically moist or water-damaged due to excessive humidity, water leaks, condensation, or flooding. Many molds are black in appearance but are not Stachybotrys. Only specially trained professionals (i.e. mycologists) through a microscopic exam can positively identify Stachbotrys.

  Typically, indoor air levels of Stachybotrys are low, however with other types of molds at higher level effects can occur. These include allergic rhinitis (cold-like symptoms), dermatitis (rashes), sinusitis, conjunctivitis, and aggravation of asthma. Some related symptoms are more general such as inability to concentrate and fatigue. Usually, symptoms disappear after the contamination is removed. There has been some evidence linking Stachybotrys with pulmonary hemosiderosis in infants who are generally less than six months old. Pulmonary hemosiderosis is an uncommon condition that results from bleeding in the lungs. In studied cases of pulmonary hemosiderosis, the exposure to Stachybotrys came from highly contaminated dwellings, where the infants were continually exposed over a long period of time.

Mold Allergy

When moldy material becomes damaged or disturbed, spores (reproductive bodies similar to seeds) can be released into the air. Exposure can occur if people inhale the spores, directly handle moldy materials, or accidentally ingest it. Also, mold can sometimes produce chemicals called mycotoxins. Mycotoxins may cause illness in people who are sensitive to them or if they are exposed to large amounts in the air. Large exposures are typically associated with certain occupations (i.e., agricultural work).

Mold Growth

All molds need water to grow. Mold can grow almost anywhere there is water damage, high humidity, or dampness. Most often molds are confined to areas near the source of water.

Removing the source of moisture such as through repairs or dehumidification is critical to preventing mold growth. Molds can be found wherever there is moisture, oxygen, and a source of the few other chemicals they need. In the fall they grow on rotting logs and fallen leaves, especially in moist, shady areas. In gardens they can be found in compost piles and on certain grasses and weeds. Some molds attach to grains such as wheat, oats, barley, and corn, making farms, grain bins, and silos likely places to find mold. Bakeries, breweries, barns, dairies, and greenhouses are also favorite places for molds to grow. Loggers, mill workers, carpenters, furniture repairers, and upholsterers often work in moldy

environments. Nutrients are readily available on construction sites like cellulose or other organic materials such as wood, carpet, ceiling tile, insulation, and drywall. Most buildings provide plenty of nook, walls, and other areas in which mold can grow such as dark areas behind walls, the interior of ducts, and beneath floors and carpet. Dampness can be created by water intrusion like floods, leaks, rain, condensation, or high humidity above 60%.

- The key to controlling mold growth is to control water and moisture.
  - Control during design to allow efficient and adequate water and moisture management in the finished product.
  - Control during construction to prevent entrapment of moisture or water in the building.
- If there is a water intrusion:
  1. Dry materials within 48 hours.
  2. Discard porous materials – paper, drywall, and carpet.
  3. Remove contaminated drywall 24” past growth.
  4. Wash non-porous materials such as brick, concrete, and glass with non-ammonia soap and hot water.
  5. Rinse with clean water.
  6. Apply dilute bleach solution (1/4 cup per gallon) and allow drying naturally.
  7. Provide plenty of ventilation.

Mold Counts

Similar to pollen counts, mold counts may suggest the types and relative quantities of fungi present at a certain time and place. For several reasons these counts probably cannot be used as a constant guide for daily activities. One reason is that the number of types of spores actually present in the mold count may have changed considerably in 24 hours because weather and spore dispersal are directly related. Many of the common allergenic molds are of the dry spore type.

They release their spores during dry, windy weather. Other fungi need high humidity, fog or dew to release their spores. Although rain washes many larger spores out of the air, it also causes some smaller spores to be shot into the air. In addition to the effect of day-to-day weather changes on mold counts, spore populations may also differ between day and night. Day favors dispersal by dry spore types and night favors wet spore types.

Steps to Minimize the Dangers of Mold

- Store materials away from moisture.
- Try to inspect building material prior to installation, particularly insulation and insulated ductwork.
- Keep the interior of the building dry.
- Face reality – if there’s mold, deal with it up front and keep out of the courts.
- Educate your field staff – hiding the problem worsens it in this case.

- Insist on proper maintenance of structures and educate your owners and clients.
- Review scheduling and sequencing on your jobs.

Mold Remediation Policy

This policy has been established for the proper disposal and remediation of suspected mold contaminated building materials.

- Identify the type of contaminated building material (drywall, wood, insulation, ceiling tiles, etc.).
- Notify the Superintendent of its existence; the Superintendent will notify the Owner.
- The Owner will decide to remediate in place or remove contaminated material.
- There are two levels of remediation and removal.
  - Level I – 100 ft^2 or less
  - Level II – over 100 ft^2
- **Level I** remediation to be completed by a trained labor force.
  - Minimal containment – plastic door flaps
  - Worker to wear the following PPE:
    - Impervious gloves
    - Safety glasses
    - NP 95 respirator
- Porous materials – discard porous materials, i.e. paper, drywall, and carpet.
  1. Spray contaminated material with 1:10 bleach solution 24 hours prior to removal, if possible.
  2. Remove contaminated drywall 24" past growth.
  3. Remove contaminated material and bag or seal in 6-ml plastic.
  4. Transport to construction dumpster.
  5. If the material is wood and it will not be removed, the area must be HEPA vacuumed, sprayed with the 1:10 bleach solution, abraded and encapsulated with "Kilz" or a clear shellac.
  6. Provide ventilation of bleach vapors.
- Non-porous materials can be cleaned using the following procedures:
  1. Wash non-porous materials (brick, concrete, and glass) with non-ammonia soap and hot water.
  2. Rinse with clean water.
  3. Apply dilute bleach solution (1/4 cup per gallon) and allow drying naturally.
  4. Provide ventilation of bleach vapors.
- **Level II** remediation will be conducted after consultation with a third party abatement expert.
- Air monitoring can be conducted if necessary after remediation is completed.

IMPORTANT – Mold is present because of water intrusion. The water intrusion must be corrected!

If there are any questions or concerns about the recognition or remediation of mold, contact the Safety Department.

Appendix A: Moisture Control Checklist

Location of Work: Building_____Floor_____ Area_____Room_____

Project Mgr:_____Project Supt:_____Project No: _____

Project Description: _____

Item	Yes	No	Comment
Any standing water within building?			
Any finish materials exposed to moisture?			
Building dried in: Building skin complete Roof complete			
Proper ventilation provided.			
Any contaminated material in place?			
Is there any mold visible?			
Has Supervision been notified of deficiencies?			
Has the caulking around the window frames, window joints/miters, door frames, door joints /miters as well as other breaches or flat accents, soffit, frieze and facia boards been checked?			
Has the kickout flashings/roof/wall, deck flashings, other attachment flashings, porches/ stoop flashing, window head flashing, door head flashing and column flashing been checked?			
Was EIFS terminated above grade, sealed at bottom?			
Is there exterior evidence of pest infestation?			
If the slope of grade away adequate?			
Rain Water Penetration Control: Construction details Potential leak sources Protect non-vertical surfaces			
Condensation Control: Continuous air barrier system Install vapor barriers correctly Water Vapor Transmission Analysis Vent or remove excess humidity			
Mechanical Controls: Pressurize interior space in hot humid climates. Maintain interior relative humidity			

Reviewer:_____ Date: _____

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Section 29 - Task Hazard Analysis (THA)

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Purpose and Summary

This procedure provides the instructions and explanations regarding the LeChase Construction Task Hazard Analysis (THA) process.

The Task Hazard Analysis (THA) is a management process for identifying and correcting potentially hazardous or unsafe conditions. The THA is intended to serve as a guide in determining the individual steps or activities, which together create a task or specific work duty, and to detect/anticipate any actual or potential hazards that may be present. This process can identify less obvious potential hazards that may go undetected during routine management observations.

A new THA must be completed every day and before commencement of any work activity. It should be understood that a change in tasks or conditions during a work period or shift (inclement weather, another contractor began work in area, etc.) requires that the THA be modified to address the new hazards. The new THA should be changed to reflect new conditions in the task being performed.

Once a THA is completed for a specific task, it is to remain in the work area while the work is being performed. This will allow employees/crew members to reference the document and to make modifications if the job steps or conditions change. It will also allow others to be able to read the THA and understand how to protect themselves from the hazards of any task being performed around them and in the area.

The LeChase Superintendent or safety representative may review the THA's during field walks. The THA's will be turned in to the LeChase project office at the end of the day, or by 8:00 am the following scheduled work day for signature and file.

Scope

This policy applies to all LeChase Construction employees, subsidiaries, subcontractors, vendors, and visitors.

Responsibilities

- **VICE PRESIDENT, ENVIRONMENTAL, SAFETY, HEALTH AND QUALITY / REGIONAL ES&H MANAGERS**
  The Vice President, Environmental, Safety, Health, and Quality or designee, and the Regional ES&H Managers are responsible for the issuance, revision, and maintenance of this procedure.
- **SUPERINTENDENT / SITE MANAGER**
  The Superintendent / Site Manager, Project Manager, and Project Executives are responsible for implementing the provisions of this procedure on their respective sites.
- **SITE SUPERVISORS / FORMEN / ENGINEERS**
  Supervisors / Foremen / Engineers are responsible for implementing the requirements of this procedure within their areas of responsibility. Supervisor / Foremen Engineers are also responsible to review any applicable THA's prior to initiating any task or work activity.
- **SITE ENVIRONMENTAL, SAFETY AND HEALTH MANAGER / SUPERVISOR / REPRESENTATIVE**

The Site Environmental, Safety and Health Manager / Supervisor / Representative and Superintendent are responsible for monitoring adherence to this procedure.

- **EMPLOYEES**
  All LeChase and subcontractor employees are responsible for complying with the requirements of this procedure along with all rules, regulations and contract terms as provided by LeChase Construction.

Definitions

Accident	An unplanned event that may result in injury, loss, or damage. Example – slipping on oil is an accident.
Hazard	A potential danger. Example – oil on the floor is a hazard.
Injury	The result of an accident. Example – a sprained wrist from a fall would be an injury.
THA	An interactive process for joint review and elimination of potential hazards associated with work activities.

Procedures

General Requirements

Task Hazard Analysis (THA) is a process used to review and define work activities, identify and mitigate/eliminate any associated hazards.

Project teams will always utilize a “hierarchy of control measures” approach to develop safe work procedures and processes. These controls are in order of preference:

- Eliminate the hazard if at all possible
- Use Engineering controls to mitigate the hazard
- Use Administrative controls to minimize exposure
- Use PPE

Methods of Conducting a THA

The THA is designed to be a group and participative process and activity. Under ideal circumstances the foreman, lead person, or superintendent will facilitate the THA process. All employees who will participate in the task/work activity should participate in developing the THA. Employees who are familiar with the task will be valuable sources of information. The steps will include:

- Specifically identify the task to be executed
- Identify any potential hazards; solicit employee input
- Identify the safe work methods and practices; solicit employee feedback
- Identify necessary PPE and its location
- Assure employee comprehension

- Have all employees sign the THA form indicating that they understand the task, all safe work practices, and PPE requirements

Four Common Errors

Four common errors that are often made when performing a THA can be:

- Making the task so detailed that an unnecessary number of steps are listed
- Making the job so generic that basic steps are omitted
- Failure to relate to the education and experience level of the target audience
- Failure to involve employees/crew members in the THA development

Valuable Questions

When evaluating a THA instruction, ask the following question:

> **"What should the employees do, or not do, to eliminate or control this particular hazard?"**

Answers should be specific and concrete.

The following recommendation is incomplete; it does not illustrate how to prevent the wrench from slipping:

> **"Make certain the wrench does not slip or cause loss of balance."**

Here is an example of a more complete recommendation:

> **"Set the wrench securely. Test grip by exerting slight pressure. Stand with feet wide apart before exerting full pressure."**

Develop Solutions

The final step in conducting a THA is to consider safe work practices to prevent the occurrence of potential accidents. The principle solutions are:

- Identifying a new way to do the job
- Changing the physical conditions
- Modifying work methods or procedures to eliminate unnecessary risk

Specific Requirements

Sequence of Basic Job Steps

Break the task down into steps (3-5 are ideal). Each task will consist of a set of transitions used to perform the task.

For example, the job might be to move a box from a shelf in the receiving area to a shelf in the storage area. How does that break down into job steps? Picking up the box from the shelf and putting it onto a hand-truck is one logical set of movements; therefore, it is step one.

Everything related to that one logical set of movements is part of that job step. The next logical set of movements might be pushing the loaded hand truck to the storeroom. Removing the boxes from the

truck and placing them on the shelf is another logical set of movements. And finally, returning the hand truck to the receiving area might be the final step in this type of job, if appropriate.

The idea is to identify the specific hazards associated with each task.

Be sure to list all the steps in a job. Each is a separate task component.

Ask the Following Questions

The purpose is to identify all hazards, both physical and environmental. To do this, ask yourself these questions about each step:

- Is there a danger of striking against, being struck by, or otherwise making harmful contact with an object?
- Can the employee be caught in, on, by or between objects?
- Is there a potential for a slip, trip or fall?
- Can an employee suffer a strain by pushing, pulling, lifting, bending or twisting? Will two or more people be required for the task?
- Are there hazards that may be caused by others in the vicinity?

Key Considerations

<table>
<tr><th>Struck By (in line of fire)</th><th>Struck Against</th><th>Caught</th><th>Contact With</th><th>Fall To (Loss of Balance, Traction/Grip)</th><th>Overexertion/ Repetitive</th><th>Rubbed or Abraded By</th></tr>
<tr><td rowspan="2">Moving or flying objects</td><td rowspan="2">Stationary or moving objects</td><td rowspan="2">In</td><td>Acid</td><td rowspan="3">Same level</td><td>Lifting</td><td rowspan="2">Friction</td></tr>
<tr><td>Electricity</td><td>Pulling</td></tr>
<tr><td rowspan="3">Falling material</td><td rowspan="2">Protruding objects</td><td rowspan="2">On</td><td>Heat</td><td>Pushing</td><td rowspan="2">Pressure</td></tr>
<tr><td>Cold</td><td rowspan="3">Lower level</td><td>Reaching</td></tr>
<tr><td>Sharp or jagged edges</td><td rowspan="2">Between</td><td>Radiation</td><td rowspan="2">Twisting</td><td rowspan="2">Vibration</td></tr>
<tr><td></td><td></td><td>Toxic</td></tr>
</table>

The THA should always be changed to reflect new conditions in the task being performed or new hazards not identified previously.

Supporting Documents

The THA Form/worksheet is available on each LeChase job site and the employee intranet under “Safety Forms.” This THA form will replace all previous releases. The form will be completed at the start of each shift and before any new task. A task can be defined as any activity requiring supervisory instruction. Upon completion, the THA should be placed in the immediate work area of the assigned activity.

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Section 30 - Respiratory Protection Policy

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Purpose

The objective of this policy is to prevent adverse health effects from the inhalation of hazardous airborne contaminants through the administration of a comprehensive Respiratory Protection Program. This document outlines the minimal acceptable requirements for a respiratory protection program, details responsibilities, provides criteria in determining respiratory protection needs, and lists approved respiratory protective devices.

Scope

This policy and program apply to all LeChase Construction, QSI, Conifer-LeChase, and Platinum-LeChase employees, joint venture, affiliates.

Subcontractors, vendors, and visitors will provide evidence of their company's documented respiratory protection program, which must comply with OSHA 1910.134 & 1926.103 to include Appendix D.

References/Related Documents

- 29 CFR 1926.103
- 29 CFR 1910.134
- 29 CFR 1910.1020
- Title 30, Part II of the Code of Federal Regulations - NIOSH Respirator Certification Requirements 42 CFR 84 and 30 CFR 11
- American National Standards Institute - Practices for Respiratory protection Z88.2- 1992

Definitions

Filter or Air Purifying Element	A component used in respirators to remove solid or liquid aerosols from the inspired air.
Filtering Face Piece	Means a negative pressure particulate respirator with a filter as an integral part of the face piece or with the entire facepiece composed of the filtering medium.
Fit Test	Means a use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on and individual.
Immediately Dangerous to Life or Health (IDLH)	Means an atmosphere that poses an immediate threat to life, would irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.
Maximum Use Concentration (MUC) of Filter, Cartridge, or Canister	The maximum concentration of a contaminant for which an air-purifying filter, cartridge, or canister is approved for use.

Negative Pressure Respirator (tight fitting)	A respirator in which air pressure inside the respirator is negative during inhalation in respect to the ambient air pressure outside the respirator.
Oxygen Deficiency	Means an atmosphere with an oxygen content below 19.5% by volume.
Self-Contained Breathing Apparatus (SCBA)	Means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.
Service Life	The period of time that a respirator, filter or sorbent, or other respiratory equipment provides to the wearer. For example, the period of time that an air-purifying device is effective in removing a harmful substance from inspired air.

Procedures

General

- Every consideration will be given to the use of effective engineering controls to eliminate or reduce exposure to respiratory hazards to the point where respirators are not required. However, when feasible engineering controls are not effective in controlling toxic or harmful substances, the employer, at no charge, will provide appropriate respiratory protective equipment to impacted employees.
- Employees exposed to toxic or harmful substances must use respiratory protective devices as a condition of employment. Employees required to use respirators must be properly fitted, tested, medically screened, and trained in their use.

Written Plan

- A written Respiratory Protection Plan will be developed for the specific respiratory hazards of each project or operation. The written plan will also include information that is to be included in training: provisions for controlling the distribution of respirators, the method to be used for cleaning, inspection, maintenance, storage and proper wear of respirator maintenance, and how the requirements of this practice will be met.
- The LeChase Superintendent, Project Manager, ES&H Manager, and subcontractors are responsible for the development and implementation of site-specific respiratory protection programs and document their plan in their Site Specific Safety Plan.

Training

- Selecting the appropriate respirator for a given hazard is important. LeChase has established an annual training requirement for the use of respirators in the company. Using it properly is equally

important. Proper use is ensured by carefully training safety personnel, supervisors and the employees in the selection, use and maintenance of respirators.

The training must include the following:

- Handling the respirator.
- Demonstrations and practice in wearing, adjusting and determining the fit of the respirator.
- Testing of face piece to face seal.
- Wearing in normal air.
- Wearing the respirator in a test atmosphere.
- Discussions of the engineering and administrative controls in use and why respirators are needed.
- Explanation of the nature of the respiratory hazard and what happens when the respirator is not used properly.
- Explanation of why a particular type of respirator has been selected.
- Discussion of how to recognize and handle emergencies.

Selection of Respirators for Routine Use

- Approved Respirators – Only NIOSH approved respirators shall be used. Any change or modification to the respirator, however minor, will void the respirator approval and significantly affect the performance of the respirator.
- Selection – The potential hazard exposure determines what kind of respirator is used. Respirator face piece and cartridge selection requires a review of each operation to:
- a) determine the potential airborne containment and personal exposure.
- b) determine proper respirator selection.
- c) determine the proper respirator cartridge to mitigate the hazard.
- If a question exists concerning the type of respirator required, please contact the Regional ES&H Manager or competent person.

Purchase of Approved Equipment

- These requirements apply to all NIOSH/MSHA approved respirators used on LeChase projects. NIOSH/MSHA approved “dust masks” may be used on LeChase projects only after a hazard assessment has been conducted and has shown only nuisance levels of contaminants. Any air monitoring shall be coordinated through the Regional ES&H Manager or through an independent vendor specializing in air monitoring. In all cases, NIOSH/MSHA approved dust masks shall be maintained and issued by site management.

- The warehouse will stock the respirtory equipment reviewed and approved by the EHS department for use based on typical task hazards. If a hazard assessment of a new product determines new hazards exist, the EHS department will be consulted for the proper selection of new equipment prior to purchase.

Comfort
Once an appropriate respirator has been selected, consideration is given to the fit and comfort of the respirator.

Medical Assessment Requirements
- Prior to issuance and use of respiratory protection devices, a medical evaluation shall be provided to all affected personnel. The medical evaluation shall be under the direct supervision of a licensed physician and shall be provided at no cost to the employee.
- When applicable, medical surveillance, including biological assessment, shall be carried out every year, unless deemed otherwise by licensed physician, to determine if respirator wearers are receiving adequate respiratory protection. The licensed physician shall determine the requirements of the surveillance program.

Medical Forms
- LeChase currently uses 3M Online Respirator Medical Evaluations, when conducting initial and annual medical evaulations. In cases where this service is not available, the below will be followed with a designated local medical provider.
- When conducting the initial medical evaluation, the Medical Questionnaire for Respirator Use must be completed (see Appendix A).
- In addition to the medical questionnaire, the physician must also be furnished a copy of the latest OSHA Standard governing the type of exposure to which the employee may be subjected. A description of the employee's duties as they relate to the exposure, the anticipated exposure level, a description of the respiratory protective equipment to be used, and any available information from previous medical evaluations of the employee must also be furnished to the physician on the “Request for Medical Evaluation for Respirator Use” (See Appendix B)
- At the conclusion of the evaluation, the physician will provide a written opinion containing the results of the evaluation and any recommendations regarding the employee's limitations Findings will be noted on the “Request of Medical Evaluation for Respirator Use” (Appendix B).
- The employer must provide a copy of the physician’s opinion to the employee within thirty (30) days of its receipt by the company.

Issuing Respirators
- Respirators will not be issued to any individual who has not been medically cleared by a licensed physician. Respirators will not be fit tested or issued to individuals who have facial hair (including stubble) or any other condition which interferes with the sealing surface of the respirator.
- Respirators will not be fit tested nor issued to individuals who have not received appropriate respirator training in addition to fit testing and a medical clearance.

Fit-Testing Requirements
- Respirators will be fitted properly and be tested for their face piece-to-face seal. The two acceptable methods for conducting these tests are: Qualitative and Quantitative fit testing.
  - **Qualitative fit testing** is based on the wearer's subjective response to atmospheric tests.

  - **Quantitative fit testing** uses a machine to measure the actual amount of leakage into the face piece and does not rely upon the wearer's sense of taste, smell, or irritation in order to detect leakage.
- Each fit test is valid only for respirators of the same model and size tested.
- Fit tests are valid for one year from the date of the test.
- Upon testing, employees will be required to complete the "Respirator Training and Fit Test Record" signifying basic respirator training and acknowledgement of fit-testing (see Appendix C).

Fit Test Card

The respirator wearer shall be issued an employee fit test card containing the following information (see Appendix F):

- Name.
- Date of fit test.
- Manufacturer, model, and size of each successfully tested respirator.
- Name and signature of the person that conducted the test.
- Fit test challenge agent used.
- Fit factor if a quantitative fit test was performed.

Fit Checks

Positive and negative Fit Checks are used to verify the seal of the respirator. Each of these tests must be performed every time a respirator is put on and prior to entering a potentially contaminated area.

A positive Fit Check requires the user to exhale gently into the face piece, creating a slight positive pressure within the face piece. If there is no outward leakage detected, the fit is considered satisfactory.

A negative Fit Check requires the wearer to inhale gently so that the face piece collapses slightly; if after ten seconds the face piece remains in a slightly collapsed condition and no inward leakage is detected, the fit is considered satisfactory.

Care and Maintenance

All personnel involved in respirator maintenance must be trained. Substitution of parts from different brands or types of respirators invalidates approval of the device. Repairs and adjustments should never be made beyond the manufacturer's recommendations.

Cleaning the Respirator

- Respirators must be cleaned and disinfected after each day's use or as often as necessary to be maintained in a sanitary condition per manufacturer recommendations.
- Individual respirator users are responsible for the cleaning and disinfecting of respirators.
  Note: Respirator-freshening wipes are not an adequate substitute for this cleaning and disinfecting process.
- Clean respirators according to the manufacturer's guidelines. Specific OSHA guidance is listed in 1910.134 Appendix B-2, Respirator Cleaning Procedures.

Storing the Respirator
When not in use, respirators shall be individually sealed in plastic bags to protect against dust, sunlight, extreme temperatures, excessive moisture, or damaging chemicals. Respirators should not be stored (thrown) in toolboxes or gang boxes. All respirators shall be stored in such a way that the face piece and exhalation valve are not distorted.

Inspecting the Respirator
All respirators shall be inspected by the individual user before and after each use to ensure that they are in satisfactory working condition.

Inspections shall be in accordance with the manufacturer's user guide and the OSHA 1910.134(h)(3) Inspection standard.

Identify and Evaluate the Respiratory Hazard(s)
Evaluation of the workplace shall include a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form. Where the hazard cannot be identified or employee exposure cannot be reasonably estimated, the area shall be considered an IDLH atmosphere.

Work Area Surveillance
Appropriate surveillance of the work area conditions, and degree of employee exposure or stress shall be maintained. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, there shall be a reevaluation of the continued effectiveness of the respirator.

IDLH Atmosphere Requirements
The LeChase Superintendent, Project Manager, ES&H Manager, and subcontractor leads are responsible for the development and implementation of a site-specific respiratory protection program prior to entering an IDLH (Immediate Danger to Life or Health) atmosphere. This plan should include: protocol for measuring the level of airborne contamination, determination of appropriate respiratory protection, other PPE requirements, applicability of confined space entry permit, and requirement for rescue if required.

Prior to this plan being implemented and used, it must be reviewed and approved by the Regional EHS Manager.

Breathing Air Quality and Use
- The employer shall ensure that compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration meet the following specifications:
  - Compressed and liquid oxygen shall meet the United States Pharmacopoeia requirements for medical or breathing oxygen; and
  - Compressed breathing air shall meet at least the requirements for Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:

  - Oxygen content (v/v) of 19.5-23.5%;
  - Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less;
  - Carbon monoxide (CO) content of 10 ppm or less;
  - Carbon dioxide content of 1,000 ppm or less; and
  - Lack of noticeable odor.
  - All breathing air must be checked with anO2 meter prior to use.
- The employer shall ensure that compressed oxygen is not used in atmosphere- supplying respirators that have previously used compressed air.
- The employer shall ensure that oxygen concentrations greater than 23.5% are used only in equipment designed for oxygen service or distribution.

Voluntary Use

Where respirator use is not necessary or required, the company or subcontractor may provide respirators at the request of employees or permit employees to use their own respirators. This decision may be made by an appropriately trained and designated LeChase employee or subcontractor management; if it is determined that such respirator use will not create a hazard. If management determines that voluntary respirator use is permissible, the respirator user shall be provided with necessary information regarding use (see “OSHA Appendix D”).

Each employee using a respirator voluntarily must be deemed medically able to use that respirator, and the respirator must be cleaned, stored, and maintained so that its use does not present a health hazard to the user.

Exception: This does not apply to the voluntary use of filtering face pieces (dust masks).

Program Evaluation

The company shall ensure that the program is periodically evaluated to determine effectiveness during all phases of operation in which respirators are being used. Walk-through inspections shall be conducted to monitor and document worker compliance with the requirements of the program.

The Site-Specific Safety Plan addresses whether a respirator will be needed on a project for a specific task. Each subcontractor is instructed to comply with the 1910.134 Respiratory Protection standard and provide the appropriate documentation.

Record Retention

Respirator Training Records

- Upon completion of the basic Respirator Training Program, the employee will be required to read and sign a Respirator Training & Fit Test Record attesting to the fact they have received the basic training and are confident in their ability to properly use the respirator.
- The signed and dated Respirator Training Record will become a part of the employee’s medical records and maintained at the project.

Recordkeeping of Fit Test Results

The employer will maintain qualitative/quantitative fit testing records to include employee name or id, type of fit test conducted, specific make/model/style of respirator, date of the fit test, and pass/fail results. All fit test records will be maintained by the employer for users until the next fit test is administered. These records shall also be retained as a medical record. Once the employee successfully completes the respirator fit test, the fit test administrator/clinic will record the fit test results. This information will be kept on file with the training record.

Medical Records

The Company must retain all records pertaining to the employee's medical examination and evaluation for a period of thirty (30) years plus the duration of employment.

Mandatory Information for Employees Using Respirators When NOT Required Under Standard

Certain precautions must be taken to be sure that the respirator itself does not present a hazard (see Appendix D.)

Supporting Documents

- Appendix A: Medical Questionnaire for Respirator Use
- Appendix B: Request for Medical Evaluation for Respirator Use
- Appendix C: Respirator Training and Fit Test Record
- Appendix D: "OSHA Appendix D"
- Appendix E: Selection Table for Respiratory Protection
- Appendix F: Employee Fit Test Card

Appendix A: Medical Questionnaire for Respirator Use

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee: Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date: _____
2. Your name: _____
3. Your age (to nearest year): _____
4. Sex (circle one): Male Female
5. Your height: _____ ft. _____ in.
6. Your weight: _____ lbs.
7. Your job title: _____
8. Phone number where you can be reached by the health care professional who will review this questionnaire (including area code): _____
9. Best time to reach you at this number: _____
10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): ..... Yes No
11. Check the type of respirator you will use (you can check more than one category):
    a. _____ N, R, or P disposable respirator (filter-mask, non-cartridge type only)
    b. _____ Other type (e.g., half- or full-facepiece type, powered air-purifying, supplied-air, self-contained breathing apparatus)
12. Have you worn a respirator (circle one):..... Yes No

    If "yes," what type(s): _____

I understand that failure to advise my employer of a medical condition may result in harm to me during my respirator use.

Employee Signature: _____

Witness: _____

Part A. Section 2. (Mandatory) Questions 1 through 9 must be answered by every employee who has been selected to use any type of respirator (please circle “yes” or “no”).

1. Do you currently smoke tobacco, or have you smoked tobacco in the last month? ..... Yes No

2. Have you ever had any of the following conditions?
   a. Seizures (fits): ..... Yes No
   b. Diabetes (sugar disease): ..... Yes No
   c. Allergic reactions that interfere with your breathing: ..... Yes No
   d. Claustrophobia (fear of closed-in places): ..... Yes No
   e. Trouble smelling odors (except when you had a cold): ..... Yes No

3. Have you ever had any of the following pulmonary or lung problems?
   a. Asbestosis: ..... Yes No
   b. Asthma: ..... Yes No
   c. Chronic bronchitis: ..... Yes No
   d. Emphysema: ..... Yes No
   e. Pneumonia: ..... Yes No
   f. Tuberculosis: ..... Yes No
   g. Silicosis: ..... Yes No
   h. Pneumothorax (collapsed lung): ..... Yes No
   i. Lung cancer: ..... Yes No
   j. Broken ribs: ..... Yes No
   k. Any chest injuries or surgeries: ..... Yes No
   l. Any other lung problem that you've been told about: ..... Yes No

4. Do you currently have any of the following symptoms of pulmonary or lung illness?
   a. Shortness of breath: ..... Yes No
   b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: ..... Yes No
   c. Shortness of breath when walking with other people at an ordinary pace on level ground: ..... Yes No
   d. Have to stop for breath when walking at your own pace on level ground: ..... Yes No
   e. Shortness of breath when washing or dressing yourself: ..... Yes No
   f. Shortness of breath that interferes with your job: ..... Yes No
   g. Coughing that produces phlegm (thick sputum): ..... Yes No
   h. Coughing that wakes you early in the morning: ..... Yes No
   i. Coughing that occurs mostly when you are lying down: ..... Yes No
   j. Coughing up blood in the last month: ..... Yes No
   k. Wheezing: ..... Yes No
   l. Wheezing that interferes with your job: ..... Yes No
   m. Chest pain when you breathe deeply: ..... Yes No
   n. Any other symptoms that you think may be related to lung problems ..... Yes No

5. Have you ever had any of the following cardiovascular or heart problems?
   a. Heart attack: ..... Yes No
   b. Stroke: ..... Yes No
   c. Angina: ..... Yes No
   d. Heart failure: ..... Yes No
   e. Swelling in your legs or feet (not caused by walking): ..... Yes No
   f. Heart arrhythmia (heart beating irregularly): ..... Yes No
   g. High blood pressure: ..... Yes No
   h. Any other heart problem that you've been told about ..... Yes No

6. Have you ever had any of the following cardiovascular or heart symptoms?
   a. Frequent pain or tightness in your chest: ..... Yes No
   b. Pain or tightness in your chest during physical activity: ..... Yes No
   c. Pain or tightness in your chest that interferes with your job: ..... Yes No
   d. In the past two years, have you noticed your heart skipping or missing a beat: ..... Yes No
   e. Heartburn or indigestion that is not related to eating: ..... Yes No
   f. Any other symptoms that you think may be related to heart or circulation problems: ..... Yes No

7. Do you currently take medication for any of the following problems?
   a. Breathing or lung problems: ..... Yes No
   b. Heart trouble: ..... Yes No
   c. Blood pressure: ..... Yes No
   d. Seizures (fits): ..... Yes No

8. Has your wearing a respirator caused any of the following problems?
   (If you've never used a respirator, check this box and go to question 9.) ☐
   a. Eye irritation: ..... Yes No
   b. Skin allergies or rashes: ..... Yes No
   c. Anxiety that occurs only when you use the respirator: ..... Yes No
   d. Unusual weakness or fatigue: ..... Yes No
   e. Any other problem that interferes with your use of a respirator: ..... Yes No

9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire? ..... Yes No

Questions 10 to 15 must be answered by every employee who has been selected to use either a full- facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you ever lost vision in either eye (temporarily or permanently? ..... Yes No

11. Do you currently have any of the following vision problems?
   a. Wear contact lenses: ..... Yes No
   b. Wear glasses: ..... Yes No
   c. Color blind: ..... Yes No
   d. Any other eye or vision problem: ..... Yes No

12. Have you ever had an injury to your ears, including a broken ear drum? ..... Yes No

13. Do you currently have any of the following hearing problems?
   a. Difficulty hearing: ..... Yes No
   b. Wear a hearing aid: ..... Yes No
   c. Any other hearing or ear problem: ..... Yes No

14. Have you ever had a back injury? ..... Yes No

15. Do you currently have any of the following musculoskeletal problems?
   a. Weakness in any of your arms, hands, legs, or feet: ..... Yes No
   b. Back pain: ..... Yes No
   c. Difficulty fully moving your arms and legs: ..... Yes No
   d. Pain or stiffness when you lean forward or backward at the waist: ..... Yes No

e. Difficulty fully moving your head up or down: ..... Yes No
f. Difficulty fully moving your head side to side: ..... Yes No
g. Difficulty bending at your knees: ..... Yes No
h. Difficulty squatting to the ground: ..... Yes No
i. Difficulty climbing a flight of stairs or a ladder carrying more than 25 lbs.: ..... Yes No
j. Any other muscle or skeletal problem that interferes with using a respirator: ..... Yes No

Part B. Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen? ..... Yes No

   If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions? ..... Yes No

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals? ..... Yes No

   If "yes," name the chemicals if you know them:

   _____
   _____
   _____

3. Have you ever worked with any of the materials, or under any of the conditions, listed below?
   a. Asbestos: ..... Yes No
   b. Silica (e.g., in sandblasting): ..... Yes No
   c. Tungsten/cobalt (e.g., grinding or welding this material): ..... Yes No
   d. Beryllium: ..... Yes No
   e. Aluminum: ..... Yes No
   f. Coal (e.g., mining): ..... Yes No
   g. Iron: ..... Yes No
   h. Tin: ..... Yes No
   i. Dusty environments: ..... Yes No
   j. Any other hazardous exposure: ..... Yes No

   If "yes," describe these exposures:

   _____
   _____
   _____

4. List any second jobs or side businesses you have: _____

5. List your previous occupations: _____

6. List your current and previous hobbies: _____

7. Have you been in the military services? ..... Yes No

   If "yes," were you exposed to biological or chemical agents (either in training or combat)? ..... Yes No

8. Have you ever worked on a HAZMAT team? ..... Yes No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications)? ..... Yes No

   If "yes," name the medications if you know them:

   _____

   _____

   _____

10. Will you be using any of the following items with your respirator(s)?
    a. HEPA Filters: ..... Yes No
    b. Canisters (e.g., gas masks): ..... Yes No
    c. Cartridges: ..... Yes No

11. How often are you expected to use the respirator(s)?
    (Circle "yes" or "no" for all answers that apply to you.)
    a. Escape only (no rescue): ..... Yes No
    b. Emergency rescue only: ..... Yes No
    c. Less than 5 hours per week: ..... Yes No
    d. Less than 2 hours per day: ..... Yes No
    e. 2 to 4 hours per day: ..... Yes No
    f. Over 4 hours per day: ..... Yes No

12. During the period you are using the respirator(s), is your work effort:

    a. Light (less than 200 kcal per hour): ..... Yes No

       If "yes," how long does this period last during the average shift? _____ hrs. _____ mins.

       Examples of a light work: Sitting while writing, typing, drafting; performing light assembly work; standing while operating a drill press (1-3 lbs.) or controlling machines.

    b. Moderate (200 to 350 kcal per hour): ..... Yes No

       If "yes," how long does this period last during the average shift? _____ hrs. _____ mins.

       Examples of moderate work: Sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; walking on a level surface about 2 mph or down a 5-degree grade about 3 mph; pushing a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

    c. Heavy (above 350 kcal per hour): ..... Yes No

       If "yes," how long does this period last during the average shift? _____ hrs. _____ mins.

       Examples of heavy work: Lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and or equipment (other than the respirator) when you're using your respirator? ..... Yes No

If “yes,” describe this protective clothing and or equipment:

_____

14. Will you be working under hot conditions (temperature exceeding 77° F)? ..... Yes No

15. Will you be working under humid conditions? ..... Yes No

16. Describe the work you'll be doing while you're using your respirator(s):

_____

_____

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):

_____

_____

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

Name of the first toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the second toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the third toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of any other toxic substances that you'll be exposed to while using your respirator:

_____

_____

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):

_____

_____

Completed by (Patient/Employee Signature):_____ Date: _____

Action:

___None - Cleared for Respirator Fit Testing based on this questionnaire alone.
___Schedule physical exam (respirator clearance)
___Schedule PFTs/Spirometry
___Schedule CXR
___Schedule EKG
___Schedule cardiac treadmill test
___Schedule other: _____

Reviewed by (Program Medical Director Signature):_____ Date:_____

**If physical examination is required:

Examining Medical Provider:_____ Date:_____

Appendix B: Request for Medical Evaluation for Respirator Use

This form is to be used by LeChase and QSI employees only.

LeChase Construction or _____ requests a medical evaluation for:

_____ _____
Employee Name Date

Who may need to wear a (negative / positive) pressure respirator during his/her employment at:

Project Name: _____ Project Number: _____

Project Location: _____

This form is designed to provide you, the examining physician, with information concerning this employee's duties, potential exposures, and the applicable regulations so that your examination may adequately address the hazards to which this employee is exposed.

The employee's job title is: _____

A list of chemical and physical hazards to which exposure may be anticipated (including exposure levels if monitoring has been conducted) includes:

_____
_____
_____
_____
_____

The personal protective equipment that will be required for the employee includes:

_____
_____
_____

Based upon the information provided above, the employee medical questionnaire, and my examination of the employee:

☐ **YES** The employee is medically qualified to wear a respirator without endangering his/her health.

☐ **NO** The employee is medically unqualified to wear a respirator.

☐ **Limited** The employee may wear a respirator with the following limitations:

Physician's Signature: _____ Date: _____

Physician's printed name or stamp: _____

Physician's phone number: _____

Please return this form to LeChase Construction: _____

If you need additional information, please call: _____

Date the completed form was returned to LeChase Construction or subcontractor: _____

Appendix C: Respirator Training and Fit Test Record

This sheet to be used for LeChase and QSI employees only.

Employee Name (Last, First, MI): _____

Date:_____ Company: _____

Craft or job title:_____ SSN (last four): _____

Project name:_____ Project #: _____

I received basic respirator training consisting of the following elements:

- The reason for requiring respiratory protection.
- The nature, extent, and effects of respiratory hazards to which I may be exposed.
- An explanation of why engineering controls are not being applied or are not adequate and the effort being made to reduce or eliminate the need for respirators.
- An explanation of why a particular type of respirator has been selected for a specific respiratory hazard.
- An explanation of the operation, capabilities, and limitations of the respirator selected.
- Instruction in inspecting, donning, checking the fit of, and wearing the respirator.
- An opportunity to handle the respirator, learn how to don and wear it properly, check its seals, and wear it in a safe atmosphere.
- An explanation of how to maintain and store the respirator.
- Instructions in how to recognize and cope with emergency situations.
- Instructions as needed for special respirator use.
- Regulations concerning respirator use.

I was also given the opportunity to wear the respirator described below in a test atmosphere in order to test the fit of the respirator.

Brand:_____ Model:_____Size: _____

☐ Half Mask ☐ Full Face ☐ Air Purifying ☐ PAPR ☐ N-95
☐ Escape ☐ Airline ☐ SCBA

Brand:_____ Model:_____Size: _____

☐ Half Mask ☐ Full Face ☐ Air Purifying ☐ PAPR ☐ N-95
☐ Escape ☐ Airline ☐ SCBA

Fit Test Results – Qualitative Parameter

Positive/Negative	☐ Pass	☐ Fail	Isoamyl acetate	☐ Pass	☐ Fail
Irritant Smoke	☐ Pass	☐ Fail	Saccharin solution	☐ Pass	☐ Fail
			Bittrex solution	☐ Pass	☐ Fail

Quantitative Fit Factor: _____

Person administering the test:

_____ Date:_____
Print Signature

Employee acknowledgement of training and fit test:

_____ Date:_____
Print Signature

Appendix D: “OSHA Appendix D”

- Part Number: 1910
- Part Title: Occupational Safety and Health Standards
- Subpart: I
- Subpart Title: Personal Protective Equipment
- Standard Number: 1910.134 App D
- Title: (Mandatory) Information for Employees Using Respirators When notRequired Under Standard.

Appendix D to Sec.1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator’s limitations.

2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.

3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.

4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

[63 FR 1152, Jan. 8, 1998; 63 FR 20098, April 23, 1998]

I, _____, hereby acknowledge my receipt of the OSHA Appendix 'D' titled "Information for Employees Using Respirators When Not Required Under Standard" and agree to abide by its outlined procedures and recommendations.

_____
Project Name

_____
Type of Mask/Respirator (e.g., 3M N95, etc.)

Task/Activity:

_____
_____
_____

_____ _____
Employee Signature Date

_____ _____
Supervisor Signature Date

Appendix E: Fit Test Card

Front

EMPLOYEE* Fit TEST CARD

LeChase Construction _____ QSI _____

EMPLOYEE NAME: _____

BADGE#: _____ SSN (last four) _____

DATE OF FIT TEST: _____ EXP. DATE: _____

CHALLENGE AGENT: _____

FIT FACTOR (quantitative): _____

MANUFACTURER: _____ MODEL: _____

SIGNATURE OF PERSON ADMISTRTING TEST:

_____

Back

EMPLOYEE* Fit TEST CARD

*This card to be used for LeChase & QSI ONLY

_____

Has been medically qualified to wear a respirator

DATE: _____

Name of Physician providing medical clearance:

_____

Expiration Date: _____

LeChase Construction Services, LLC
Jobsite Safety Manual

Section 31 - Unmanned Aircraft System (UAS)

Potential Hazard and Risk Control Policy, Program & Procedure

Table of Contents

Introduction

The program outlines company and regulatory requirements for safe work execution in accordance with FAA's standard for the commercial use of UAS's under 14 CFR Part 107.

Purpose

This policy applies to all LeChase Construction and all affiliate companies, subcontractors, vendors, and visitors. LeChase Construction is committed to providing a safe and healthy workplace to our employees, recognizing the right of workers to work in a safe and healthy work environment and ensuring that LeChase Construction activities do not adversely affect the health and safety of any other persons.

This commitment includes ensuring every reasonable precaution is taken to protect our employees, and others from the potential hazards and risks of UAS use.

Prerequisites (All prerequisites must be approved by Risk Management before anyone is authorized)

- Ensure the Pilot-in-Command (PIC) is properly qualified by verifying that they have obtained a remote pilot certificate under Part 107
- The aircraft has been registered with the FAA and is marked with a registration number. See https://registermyuas.faa.gov for registration and guidelines.
- Third Party Consultant/Subcontractor- An insurance review should be conducted for UAS coverage. Required Type/limit: Aircraft Liability Coverage $1,000,000 per occurrence. Coverage can be provided on a separate UAS policy or endorsed to the CGL policy with specific UAS liability coverage. Any Third Party Consultants/Subcontractors are required to fully comply with the LeChase Safety Program.

Operating Procedure

- All planned UAS deployments must be approved by a LeChase Project Executive and notification to the Regional Safety Representative.
- Complete a Task Hazard Analysis (THA) prior to each flight to determine and assess project/area specific hazards and risks and insure compliance in support of our common goals for a safe and successful project outcome. Pay particular attention to the potential legal liability for injuries and invasion of privacy.
- Go to Kittyhawk App (see attached instructions) and get Laanc authorization to fly and check weather conditions.
- Complete a Preflight Checklist and Inspection.
- Record missions on a Flight Log for each project site.

In accordance with FAA's standard for the commercial use of UAS's under 14 CFR Part 107, ***operating rules include, but are not limited to:***

- Each flight must have a flight specific Laanc authorization (see Kittyhawk instructions)
- UAS must weigh less than 55 pounds.

- Aircraft must remain within visual-line-of-sight (VLOS).
- Daylight operations only.
- Maximum ground speed of 10 mph.
- Maximum altitude of 400 feet above ground level or if over a structure maximum altitude is 400 feet above the structure.
- May **not** operate over persons **not** directly involved in UAS operations unless covered structure or inside stationary vehicle.
- Must yield operations to manned aircraft.
- Operations in Class G airspace are allowed without air traffic control permission.
- Preflight inspection required.

Typical UAS Missions

- Surveying (subject to supplemental technologies in conjunction with UAS operation).
- Roof top inspections.
- Exterior envelope inspections.
- Visual documentation of existing conditions.
- Quality control/Quality assurance inspections.
- Construction progress photography.
- Aerial photos and/or video for marketing purposes.

Appendix A: Drone Pre-Flight Checklist and Inspection

Drone Pre-Flight Checklist and Inspection

DATE:_____

PILOT:_____

PROJECT:_____

Drone Pre-Flight Checklist

A "YES" TO ANY OF THE BELOW IS A NO GO TO FLY

Yes/No Were you denied approval to fly on the Kittyhawk App?
Verification:

Yes/No Is there inclement weather that could cause the pilot to lose control of the drone?
Verification:

Yes/No Is the wind speed greater than 20 MPH?
Verification:

Yes/No Are there planes or helicopter's flying overhead?
Verification:

Yes/No Is the Drone flight path within 5 miles of an airport or heliport?
Verification:

Yes/No Are there power lines, buildings, or other objects in the flight path?
Verification:

Yes/No Are there multiple people in the vicinity of the flight path?
Verification:

Yes/No Are there any vehicles or cranes in the flight path?
Verification:

Drone Inspection

- ☐ Check Kittyhawk App to see if there are any flight restrictions in flight area.
- ☐ No visible cracks in the structure or propellers.
- ☐ Propellers tight.
- ☐ All screws and mounts are tight.
- ☐ Batteries are fully charged (Drone, Controller, and Cell Phone).
- ☐ Camera and gimbal are securely attached.
- ☐ Drone is on firm level ground for take-off.
- ☐ Ensure that S1 Switch on Controller is in the up position.
- ☐ Turn on Drone, Controller, and Launch App on Phone.
- ☐ Ensure that controller is communicating with drone.
- ☐ Set Home Point.
- ☐ Set Return to Home Altitude (must be higher than all objects in the vicinity).

Appendix B: Drone Flight Log

LECHASE

Drone Flight Log

Company/Subcontractor: _____

Project Number: _____

Project Name: _____

Date	Lance Authorization #	Pilot	Co-Pilot	Observer	Drone Make/Model	Drone Registration #	Time of Takeoff	Time of Landing	Weather	Notes

Appendix C: Task Hazard Analysis Form

LECHASE

Task Hazard Analysis

Project Name:	Date:	Subcontractor Name:
Jobsite Address:	Task to be performed:	Number of Employees:

Questions to ask for an effective THA	Please consider the following for work to be performed	Consider use of or potential for the following	
1 What am I about to do?	☐ Does every crew member know how to use assigned tools & equipment?	☐ Ladders	☐ Barricades/ Signage
2 How am I going to do it?	☐ Does this work require special training?	☐ Scaffolding	☐ Welding/Cutting/Grinding
3 What do I need to do the job?	☐ Do you need additional or special materials and tools to do the job?	☐ Elevated work	☐ Traffic Control
4 What are the hazards?	☐ Do you need to review an SDS to proceed with this work?	☐ Fall Protection PPE/PFAS	☐ Hearing Protection
5 What preventative measures will I take?	☐ Is there adequate lighting and access?	☐ Confined Space	☐ Heat/Cold Factors
Safety Access	☐ Is a shutdown of systems or equipment required?	☐ Critical Lift Plans, Rigging	☐ SDS/ HazCom
Location of Fire Extinguishers:	☐ Are there occupied spaces adjacent or below?	☐ Excavations	☐ Pressurized Systems
Emergency Evacuation Area:	☐ Are there power lines nearby? Overhead, buried, in slab, ceilings, or wall?	☐ Electrical Hazards, Lock-Out/ Tag-Out	☐ Shield, Welding PPE, Goggles
Location of Eyewash and First Aid Kit:	☐ Does work involve awkward positions, heavy or repetitive lifting?	☐ Life Saving Commitments	☐ Other:_____
	☐ Is there any potential to impact existing Owner or other subcontractors?		
	☐ Are other subcontractors in my work area and can we work safely together?	Will the task require a deviation from any safety policy?	
	☐ Is mobile equipment operator certified?	☐ Yes ☐ No	
	☐ Will weather affect the safety or quality of this work?		

I confirm by my name below, that I have attended a briefing on the requirements of the attached THA and agree to perform the work safely.
I confirm that copies of the relevant permits, inspections, checklists, SDS's, etc. have been reviewed.

	PRINT NAME	CRAFT/TRADE		PRINT NAME	CRAFT/TRADE
1			8		
2			9		
3			10		
4			11		
5			12		
6			13		
7			14		

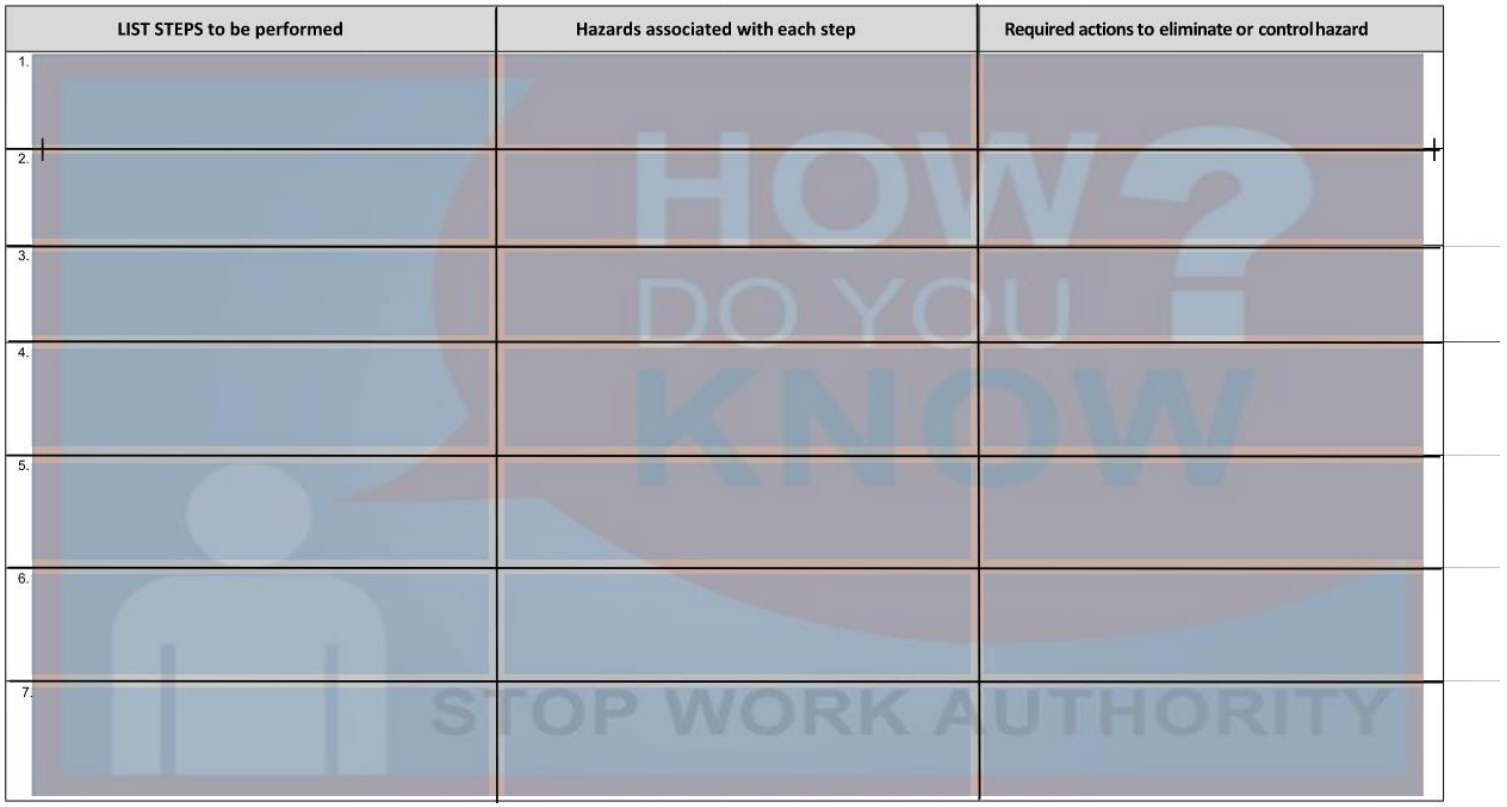
YOU ARE EMPOWERED TO STOP UNSAFE WORK!

Always *Validate and Verify* and ask *How Do You Know?*

NOTE: EACH TASK REQUIRES A SEPERATE TASK HAZARD ANALYSIS

If a deficiency in the plan is discovered, or if the task/condition changes, work shall stop and the current THA will be modified or a new one created. Additional Permits/Checklists are required for equipment, confined space, trenches, excavations, hot work, line breaks, lock-out/tag-out, cranes, scaffolds, pressure test, etc. See your supervisor if unsure.

LIST STEPS to be performed	Hazards associated with each step	Required actions to eliminate or control hazard
1.		
2.		
3.		
4.		
5.		
6.		
7.		



This pre task plan was conducted by:

Foreman/Supervisor/Superintendent (Print Name) _____ **Signature** _____

LeChase Management (Print Name) _____ **Signature** _____

To be completed at end of shift:
Was anyone injured today?
☐ Yes ☐ No
If so, was it reported?
☐ Yes ☐ No

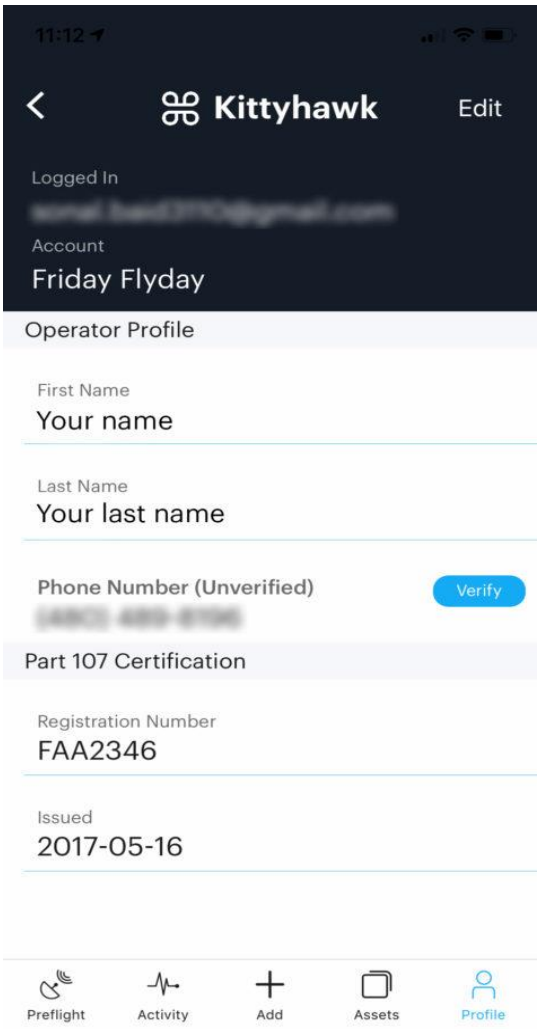
Task Hazard Analysis

Revised 3/23/2022

Appendix D – Kittyhawk Instructions

Submitting Your First LAANC Request

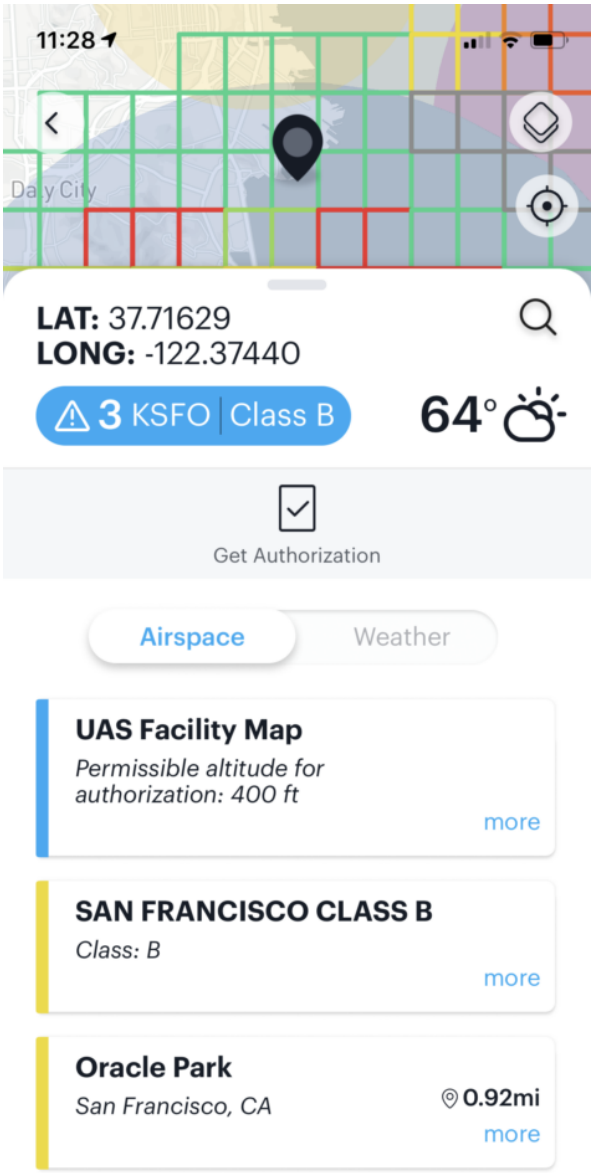
MARCH 20, 2019



Fill out pilot profile.

To obtain a LAANC authorization, add the following information under "Operator Profile" section:

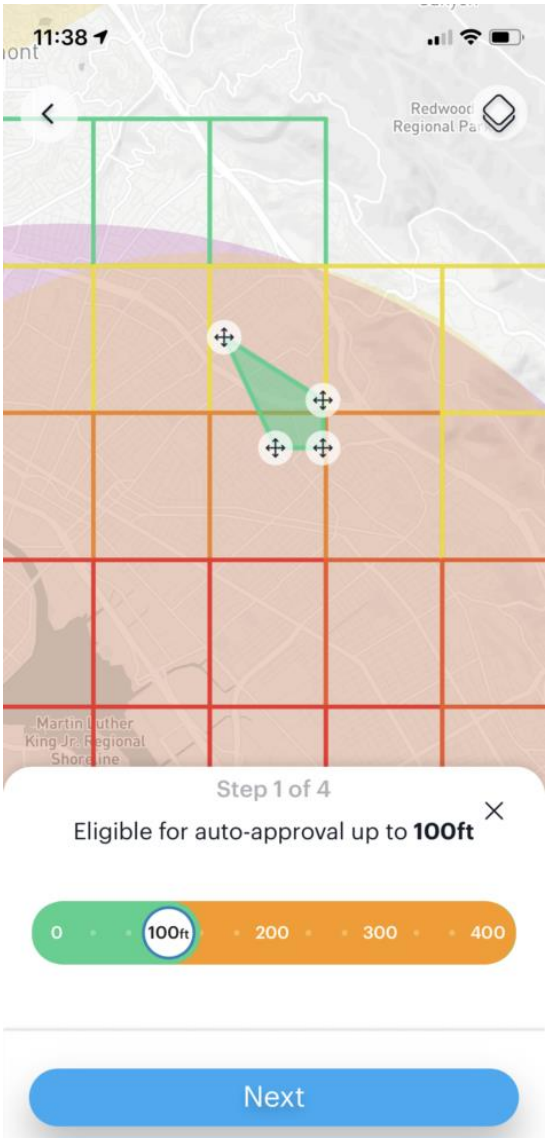
- Verified phone number
- Part 107 certification information: Registration Number – Issue Date



Request a LAANC Authorization

You can now request a LAANC authorization directly from the airspace view.
Drop the pin at the desired location and tap on "Get Authorization" to begin the request process.

Note: "Get Authorization" functionality to request LAANC is available only in the areas where LAANC is available.

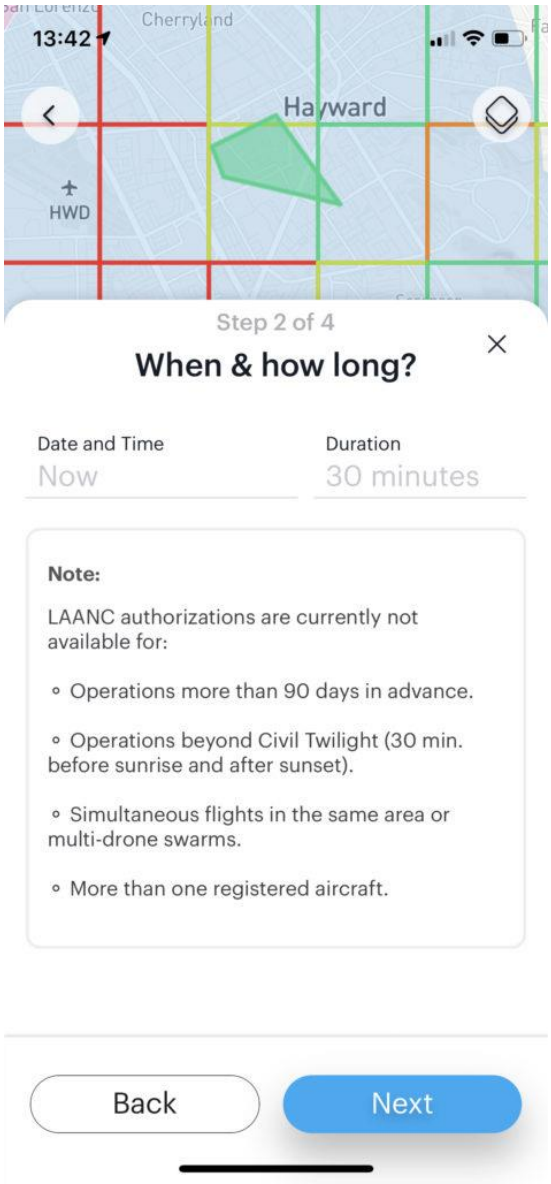


LAANC Step 1

Select the area of interest and the desired altitude.

- You can use anchors to alter the shape and size of the area of interest.
- Move the slider to select the desired altitude.

Note: The green section on the slider indicates the altitude up to which auto approval is available. Orange section indicates altitudes for which further coordination* will be required.



LAANC Step 2

Select the "Date and Time" and "Duration" for the LAANC request.

- LAANC can be requested for up to 90 days in advance.

LAANC Step 3

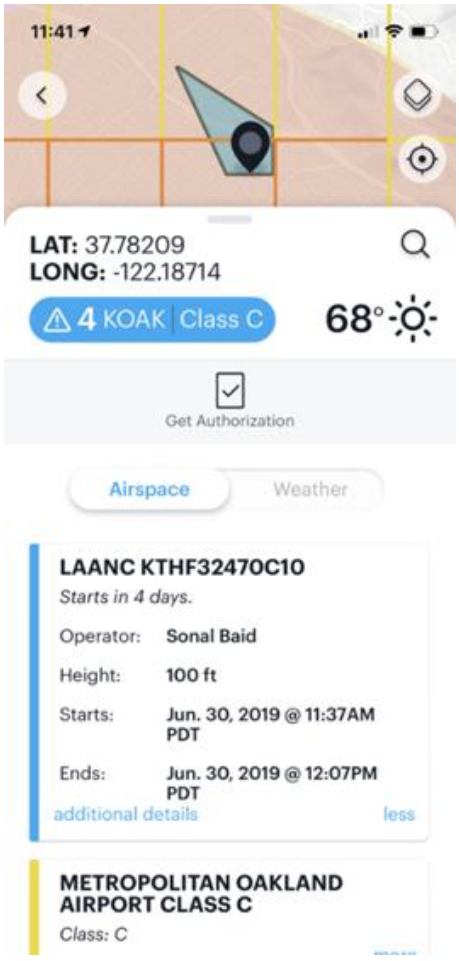
The information for the LAANC request is then checked to determine if the request is eligible for approval.
Not seeing Green? See the sections on "Pre- Check Fail."

Click link below to view video on procedure
https://kittyhawk.io/wp-content/uploads/2019/03/UuSn1W0rRgqDE1rYNrfA.mp4?_=1

LAANC Step 4

Before the request can be submitted to the FAA, you are required to acknowledge the terms of operation associated with a LAANC authorization.

- Accept terms of operations
- Agree and submit



- **You are all set!**

You can view your authorization on the airspace map.
The area of interest of the authorization will also appear as a layer on the airspace.

Pre- Check Fails

Certain flights details might be flagged during the flight plan analysis in the step 3.

Some common reasons for Pre-Check fails:

- Request requiring further coordination should be submitted within 48 hours of the start time of the operation.
- LAANC authorizations are not available for night operations.
- There exists a flight restriction in the planned operation area during the designated flight plan.

Information taken from link on Kittyhawk site: https://kittyhawk.io/help/submitting-your-first-laanc-request/

Updated 2-2-2020

LeChase Construction Services, LLC
Jobsite Safety Manual

Section 32 - Lead Exposure Control Policy, Program & Procedure

Table of Contents

General

This program applies to all work where employees and subcontractors may be occupationally exposed to lead in accordance with OSHA's Lead standard for construction, 29 CFR 1926.62. The forms of lead which are covered included metallic lead, all inorganic lead compounds and inorganic lead soaps. The scope of work covered (but not limited to) includes the following:

- Demolition or salvage of structures where lead or materials containing lead is present.
- Removal or encapsulation of materials containing lead.
- New construction, alteration, repair or renovation of structures, substrates or portions thereof that contain lead or materials containing lead.
- Installation of products containing lead.
- Lead contamination/emergency clean up.
- Transportation, disposal, storage or containment of lead or materials containing lead on a LeChase site or project.
- Any maintenance operation that exposes any LeChase employee or subcontractor to lead.

Exposure Assessment & Permissible Exposure Limit

- PERMISSIBLE EXPOSURE LIMIT. No employee will be exposed to lead at concentrations greater than fifty (50) micro grams per cubic meter of air (50 ug/m3) averaged over an eight (8) hour period. For any employee exposed to lead for more than eight (8) hours in any work day, the employees or subcontractors allowable exposure (as a TWA for that day) shall be reduced accordingly.

$$\text{Allowable employee exposure} = \frac{400}{\text{\# of hours worked in a day}}$$

- RESPIRATOR USE will be handled accordingly (see Section 30- Respiratory Protection Procedure for respiratory use details).
- EXPOSURE ASSESSMENT. LeChase Management will determine and provide documentation if any of LeChase employees or subcontractors may be exposed to lead at or above the action level (30 micrograms – 8 hrs. TWA, without regard to use of respirator). Where lead is present and until an exposure assessment is complete and documented, all employees and subcontractors will be treated as if exposed above the PEL and not in excess of ten (10) times the PEL.
- TASKS COVERED.
  - Where lead containing coatings or paint are present:
    - Manual demolition of structures
    - Manual scraping
    - Heat gun applications
    - Manual sanding
    - Power tool cleaning
  - Spray painting with lead paint/lead containing coatings are present:
    - Rivet boating
    - Abrasive blasting
    - Welding

  - Cutting
  - Torch burning
- LeChase will place a broad reliance on respirators to comply with lead policy and procedures where mechanical ventilation is used to control employee exposure to lead. Evaluating the performance of the system in controlling exposure as necessary to maintain effectiveness will be required.
- When administrative controls are used to lower employee exposure, a rotation schedule is to be kept and followed. This will enable us to determine the effectiveness of the program.

Note : When working immediately adjacent to a lead abatement activity and exposed to lead due to the inadequate containment of such job, LeChase shall either remove the employees from the area until the enclosure breach is repaired or perform an initial exposure assessment to ensure the area is within acceptable exposure limits.

Training

All employees working with or in proximity must be trained on lead hazards according to the requirement of OSHA's Hazard Communication standard for the construction industry, 29 CFR 1926.59, including-- but not limited to--the requirements for warning signs and labels, safety data sheets (SDSs), and employee information and training. (Refer to 29 CFR 1910.1200.)

Program Requirements

Employers must institute an information and training program and ensure that all employees subject to exposure to lead or lead compounds at or above the action level on any day participate. Also covered under information and training are employees who may suffer skin or eye irritation from lead compounds. Initial training must be provided before the initial job assignment. Training must be repeated at least annually and, in brief summary, must include:

- The content of the OSHA lead standard and its appendices;
- The specific nature of operations that could lead to lead exposure above the action level;
- The purpose, proper selection, fit, use, and limitations of respirators;
- The purpose and a description of the medical surveillance program, and the medical removal protection program;
- Information concerning the adverse health effects associated with excessive lead exposure;
- The engineering and work practice controls associated with employees' job assignments;
- The contents of any lead-related compliance plan in effect;
- Instructions to employees that chelating agents must not be used routinely to remove lead from their bodies and when necessary only under medical supervision and at the direction of a licensed physician; and 29
- The right to access records under "Access to Employee Exposure and Medical Records," 29 CFR 1910.1020. All materials relating to the training program and a copy of the standard and its appendices must be made readily available to all employees.

Training should be done after appropriate IH assessments and sampling have been made.

Training shall be documented to include the date(s) of training, employee(s) name and signature, and trainer’s name and signature.

Signage

The following signage will be appropriately placed in areas where employee exposure to lead is above the PEL:

- WARNING
- LEAD WORK AREA
- POISON
- NO SMOKING OR EATING

All signs must be well lighted and kept clean so that they are easily visible. Statements that contradict or detract from the signs' meaning are prohibited.

Signs required by other statutes, regulations, or ordinances, however, may be posted in addition to, or in combination with, this sign.

Employees must abide by any signs/labels/assessment reports indicating the presence of lead containing materials. Appropriate work practices must be followed to ensure lead containing materials are not disturbed.

Record Keeping

All records of exposure monitoring and other data used in conducting the employee exposure assessment will be maintained by the site management along with all medical records.

Hygiene Facilities

All employees and subcontractors exposed to lead above the PEL will be provided clean areas for changing clothes, eating, hand washing and if feasible shower facilities. Smoking, eating, applying cosmetics, and/or presence of tobacco products, food stuffs or cosmetics in work areas where exposure to lead is above the PEL will be prohibited. Also, separate storage facilities in change areas for street and work clothing will be provided.

Employees hands and faces shall be washed, if the employee comes in contact with lead containing materials.

Medical Removal & Surveillance

Employees and subcontractors will be removed from work having an exposure to lead at or above the action level on each occasion that a periodic blood test, followed up with a blood sampling test indicate that the employee's blood lead level is at or above 50ug/dl. A periodic test revealing blood level above 50ug/dl requires a follow up test within two (2) weeks.

All medical examinations and procedures are to be performed by or under the supervision of a licensed physician at no cost to the employee and will be maintained.

Monitoring Activities

Monitoring activities (i.e. exposure monitoring, personal sampling, etc.) shall be conducted at each site where lead exposure exists.

Any employee or their representative may observe monitoring, including an explanation of the measurement procedure and to record the results obtained.

All monitoring activities for each specific project/site will be documented.

Housekeeping

All surfaces must be maintained as free as practical of accumulation of lead dust. This may be accomplished primarily by vacuuming floors, rafters and other surfaces or by methods equally effective in preventing the dispersal of lead into the work place.

Health Hazards

Lead can be absorbed into the body by inhalation and ingestion absorption in certain doses. This Classifies it is as a toxic substance. A significant portion of lead that is inhaled or ingested gets into the blood stream, as exposure to lead continues, the amount stored in the body will increase. Even though no immediate symptoms of disease are present, lead stored in tissues can slowly cause irreversible damage, first to individual cells, then to organs and whole-body systems.

Policies and procedures have been set forth to be followed so any exposure to lead will not be accompanied by acute (short-term) or chronic (long-term) effects.

Definitions

Abrasive Blasting	Removes scale, paint and dirt from surfaces prior to repainting; abrasive media includes sand, steel grit, steel shot, aluminum oxide, “Black Beauty” (processed boiler slag) and other.
Abrasive Blasting Enclosure Movement and Removal	Involves movement and removal of blasting enclosure or containment units as work proceeds on structures; such units are often comprised of flexible nylon, plastic or burlap tarpaulins upon which lead dust will accumulate and be re-entrained when movement of the structure occurs.
Action Level	Airborne concentration of lead of 30 ug/m3 of air calculated as an eight (8) hour TWA.
Clean Up Activities Where Dry Expendable Abrasive Are Used	Pertains to the use of non-recycled dry abrasives during abrasive blasting operations on structures where lead containing paint is found.
Heat Gun Application	Involves use of a heat gun that produces a stream of hot air which is directed to surfaces to melt lead paint which is subsequently scraped off.
Lead	Means metallic lead, all inorganic lead compounds, and organic lead soaps.

Lead Burning	Involves torch melting or fusing of lead or alloyed lead to another lead object.
Lead Containing Mortar	Typically used in high pressure acid tanks lined with specialized tile or lead brick held in place with specialized lead-containing mortar or grout; these tank linings periodically required repainting, repairing or relining involving lead containing mortar.
Manual Demolition of Structures	Involves removal of walls (plaster, gypsum) or building components coated with lead based paint by sledge hammer or similar tool.
Manual Scraping and Sanding	Associated with lead paint removal and involves the application of hand-held scraping or sanding tool to the painted surface containing lead.
Permissible Exposure Limit (PEL)	An eight (8) hour average of exposure for any work day.
Power Tool Cleaning	Involves the use of power tools (grinders, brushes, needle guns, sanders, etc.) to remove dirt, scale, or paint from structures where lead based paint is present.
Rivet Busting	Involves removal of rivets from steel structures where lead containing paints are present; rivet busting can involve use of torches and mechanical means for rivet extraction.
Welding, Cutting, and Burning on Steel Structures	Involves the process of heating coated steel to its melt temperature typically by using an oxyacetylene torch or an arc welder.

LeChase Construction Services, LLC
Jobsite Safety Manual

Section 33 – Bloodborne Pathogens Program & Exposure Control Plan

Table of Contents

General

LeChase Construction Services (LCS) is committed to providing a safe and healthy work environment for our entire staff. In pursuit of this goal, the following exposure control plan (ECP) is provided to eliminate or minimize occupational exposure to bloodborne pathogens in accordance with OSHA standard 29 CFR 1926.50, “Medical Services and First Aid” and OSHA standard 29 CFR 1910.1030, “Occupational Exposure to Bloodborne Pathogens”.

OSHA enacted 1910.1030 to protect employees engaged in medical procedures and emergency response operations. While these standards largely target the health care industry, it also covers industries incorporating formal medical emergency response such as CPR and first aid.

The ECP is a key document to assist our organization in implementing and ensuring compliance with the standard and best practices, thereby protecting our employees. This ECP Key Elements include:

- Exposure Determination
- Implementation of various methods of exposure control, including:
  - Universal precautions
  - Engineering and work practice controls
  - Personal protective equipment
  - Housekeeping and Waste Disposal
- Hepatitis B Vaccinations
- Post-exposure evaluation and follow-up
- Interaction with Healthcare Professionals
- Communication of hazards to employees and training
- Recordkeeping
- Procedures for evaluating circumstances surrounding exposure incidents.

Implementation methods for these elements of the standard are discussed in the following pages.

Program Administration

The Safety Department (EHS) is responsible for implementation of the Corporate Bloodborne Exposure Control Plan (ECP). The LeChase Corporate Safety Director will maintain, review, and update the ECP at least annually, or as circumstances warrant.

Jerrod Garrett, Corporate Safety Director

Those employees who are determined to have occupational exposure to blood or other potentially infectious materials must comply with the procedures and work practices outline in this ECP.

LeChase EHS will be responsible for the following:

- Ensure and maintain all necessary personal protective equipment (PPE) and available in the appropriate sizes.
- Engineering controls are available (e.g. sharps containers, labels and red bags) as required by the standard.

- Ensuring that all medical actions required by the standard are performed and that appropriate employee health and OSHA records are maintained.
- Responsible for training, documentation of training, and making the written ECP available to employees and OSHA representatives.

Employee Exposure Determination

OSHA requires employers to perform an exposure determination in cases which may incur occupational exposure to blood or other potentially infectious materials. This exposure determination is made without regard to the use of personal protective equipment. This exposure determination is required to list all job classifications in which the employees may be expected to incur such occupational exposure and the potential task.

The following job classifications fall into this category and the potential task:

• None	

Vaccinations

An employee whose only exposure to blood or body fluids would be responding to injuries resulting from workplace incidents is considered by OSHA, collateral duty, the Hepatitis B vaccine is not required. If an employee's job classification changes and the employee request the Hepatitis B vaccine, it will be provided at no cost to the employee. This vaccine assists in producing immunity to the Hepatitis B virus (HBV).

- The vaccine will be offered within 24 hours of an incident where the employee was exposed to blood or OPIM along with the Post Exposure Bloodborne Evaluation by a medical professional.

The vaccine must be administered in three doses.

Initial vaccine
One month from the first vaccination
Six months from the first vaccination

Methods of Implementation and Control

All employees will use Universal Precautions when dealing with any potential exposure.

Training

Employees covered by the bloodborne pathogens standard receive an explanation of this ECP during their initial training. This procedure will also be reviewed annually during refresher training. All employees can review this plan at any time on the LeChase intranet.

Engineering Controls and Work Practices

Controls and work practices will be used to prevent or minimize exposure to bloodborne pathogens. The specific engineering controls and work practice controls used are listed below:

Engineering

- Biohazard bags
- Biohazard SHARPS disposal container
- Personal Protective Equipment – gloves, goggles, face shield, CPR barrier mask
- Specially contained waste containers for ship to a disposal facility.

Work Practice

- Remove and dispose of soiled clothing, material, and PPE as soon as possible.
- Don the proper PPE for body substance isolation.
- Using solutions from a bloodborne pathogen kit or a 10% bleach solution, clean and disinfect all possibly contaminated equipment and work surfaces.
- Dispose of any contaminated materials in the designated biohazard container.
- Wash hands immediately after providing care.
- Do not eat, drink, smoke, apply cosmetics, or lip balm, handle contact lenses or touch your mouth, nose or eyes when exposure to infectious materials is possible.
- Use alcohol-based hand rubs where hand washing facilities are not available
- Latex or Nitrile gloves are used during any first aid treatment.
- Once biohazard bags are sealed and placed in the disposal container, seal per the instructions and follow the shipping guidelines for that container.

Personal Protective Equipment

PPE is provided to our employees at no cost to them. Training in the use of the appropriate PPE for specific tasks or procedures is provided by the Safety Department.

The types of PPE available are as follows:

Gloves

PPE is located at the jobsite trailer and may be obtained through the Superintendent. Employees who need PPE can make requests through the Superintendent. The EHS Department will ensure PPE is available.

All employees using PPE must observe the following precautions:

- Wash hands immediately or as soon as feasible after removing gloves or other PPE.

- Remove PPE after it becomes contaminated and before leaving the work area.
- Used PPE may be disposed of in a medical waste container located on the job site.
- Wear appropriate gloves when it is reasonably anticipated that there may be hand contact with blood or other potential infectious materials and when handling or touching contaminated items or surfaces; replace gloves if torn, punctured or contaminated, or if their ability to function as a barrier is compromised.
- Utility gloves may be decontaminated for reuse if their integrity is not compromised; discard utility gloves if they show signs of cracking, peeling, tearing, puncturing, or deterioration.
- Never wash or decontaminate disposable gloves for reuse.
- Wear appropriate face and eye protection when splashes, sprays, spatters, or droplets of blood or other potentially infectious materials pose a hazard to the eye, nose, or mouth.
- Remove immediately or as soon as feasible any garment contaminated by blood or other potentially infectious materials, in such a way as to avoid contact with the outer surface.

Any contaminated PPE shall be placed in the biohazard waste container and managed per biohazard waste regulations.

Housekeeping

If employees encounter blood or other bodily fluids the following control measures will be implemented:

- Barricade, mark or section off the infected area until it can be decontaminated and cleaned. The area must be cleaned as soon as possible.
- If individuals assist injured persons, appropriate PPE shall be worn.
- All bodily fluids shall be considered contaminated and therefore should be removed and disposed of properly. This service should be contracted to minimize employee exposure, reference the project requirements.
    - **Basic procedures as follows:**
        - PPE shall be worn.
        - The Bloodborne pathogen clean-up kit used.
        - The contaminated material shall be disposed of through approved methods. If you are unfamiliar with these methods refer to Appendix A, Follow These Engineering and Work Place Practice Controls.
- Biohazard waste is placed in containers which are sealable, constructed to contain all contents and prevent leakage, appropriately labeled or color coded, labeled, and closed prior to removal to prevent spillage or protrusion of contents during handling.

A corporate vendor has been identified for all LeChase projects and shipping containers are located in the regional offices. Seal all containers in the corrugated container and follow shipping guidelines. All waste disposal charges have been included when the container was purchased. Contact the Regional Safety Manager and the Rochester Warehouse Manager to advise them of the container number that has been shipped and a new one is needed in the regional location.

Post Exposure Evaluation and Follow-up

Should an exposure incident occur, contact your locations EHS personnel or the LCS Safety Director to notify of them of the exposure.

An immediately available confidential medical evaluation and follow-up will be conducted by a designated medical facility. Following initial first aid (clean the wound, flush eyes or other mucous membrane, etc.), the following activities will be performed:

- Document the routes of exposure and how the exposure occurred.
- Complete the attached Post Exposure Evaluation Form and send with the employee for medical evaluation.
- Offer the exposed employee the Hepatitis B vaccine within 24 hours of the medical evaluation.
- Identify and document the source individual on an incident form (unless the employer can establish that identification is infeasible or prohibited by state or local law).
- Obtain consent and make arrangements to have the source individual tested as soon as possible to determine Aids (HIV), Hepatitis C (HCV), and Hepatitis B (HBV) infectivity; document that the source individual's test results were conveyed to the employee's health care provider.
- If the source individual is already known to be HIV, HCV, and/or HBV positive, new testing need not be performed.
- Assure that the exposed employee is provided with the source individual's test results and with information about applicable disclosure laws and regulations concerning the identity and infectious status of the source individual (e.g. laws protecting confidentiality).
- After obtaining consent, collect exposed employee's blood as soon a feasible after exposure incident, and test blood for HBV and HIV serological status.
- If the employee does not give consent for HIV serological testing during collection of blood for baseline testing, preserve the baseline blood sample for at least 90 days; if the exposed employee elects to have the baseline sample tested during this waiting period, perform testing as soon as feasible.

The EHS department provides the employee with a copy of the evaluating health care professional's written opinion within 15 days after completion of the evaluation.

Location of Plan

This document will be maintained on the LeChase intranet, as part of the LeChase Safety Manual. This document will serve as the foundation for any site-specific needs for a project.

Additional site-specific details may be part of each project's site-specific safety plan as an addendum.

Definitions

Bloodborne Pathogen - infectious microorganisms in human blood that can cause disease in humans. These **pathogens** include, but are not limited to, hepatitis B (HBV), hepatitis C (HCV) and human immunodeficiency virus (HIV). Needlesticks and other sharps-related injuries may expose workers to **bloodborne pathogens**.

Collateral Duty – A task or tasks carried out by an employee that lie outside of their role.

Exposure - the state of being exposed to contact with something.

HAV - an inflammation of the liver. One type, **hepatitis A**, is caused by the **hepatitis A** virus (**HAV**).

HBV - an inflammation of the liver. One type, **hepatitis B**, is caused by the **hepatitis B** virus (**HBV**). **Hepatitis B** spreads by contact with an infected person's blood, semen, or other body fluid

HCV - a liver disease caused by the **hepatitis C** virus (**HCV**): the virus can cause both acute and chronic hepatitis, ranging in severity from a mild illness lasting a few weeks to a serious, lifelong illness.

HIV – human immunodeficiency virus. It harms your immune system by destroying the white blood cells that fight infection. This puts you at risk for serious infections and certain cancers. AIDS stands for acquired immunodeficiency syndrome.

Occupational Exposure - reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

Other Potentially Infectious Materials (OPIM) – Human body fluids, unfixed tissue or organs from a human, and HIV / HBV containing tissue, cultures, or solutions.

Universal Precaution - the practice, in medicine, of avoiding contact with patients' bodily fluids, by means of the wearing of nonporous articles such as medical gloves, goggles, and face shields.

Investigation Addendum

LeCHASE

Exposure Incident Investigation Addendum

This Exposure investigation form is to be completed and attached to the LeChase investigation form which is used for all incidents.

Date of Incident: _____ Time of Incident: _____

Project Name or Number _____

Specific location of incident _____

Potentially Infectious Materials Involved:

Type: _____ Source: _____

Names of individuals who rendered first aid:

_____ _____

_____ _____

Circumstances (work being performed, etc.): _____

How Incident Was Caused (accident, equipment malfunction, etc.): _____

_____

Personal Protective Equipment Being Used: _____

Actions Taken (decontamination, cleanup, reporting, etc.): _____

_____

How Are Contaminated Materials Prepared for Disposal? _____

Recommendations for Avoiding Repetition: _____

_____

Note: Each person exposed must complete an incident witness statement and sign, stating how the exposure occurred, ppe that was worn, and personal clean up after the exposure.

Report Prepared by: _____ Date: _____

Preparer's signature: X _____

Supervisor: _____ Date: _____

Supervisor's signature: X _____

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Exposure Evaluation Form

LeCHASE

Bloodborne Pathogen Post Exposure Evaluation Form

Employee Information

Name (Please Print) _____

Date of Potential Exposure: _____

Project _____ Position: _____

Physical Evaluation

As attending physician, I have examined and evaluated the aforementioned LeChase employee to determine his/her exposure to bloodborne pathogens following an incident involving blood and/or body fluids.

Subsequent to this examination/evaluation, I have determined that the aforementioned LeChase employee ☐ **HAS** /☐ **HAS NOT** experienced an exposure incident. An exposure incident shall be considered as a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials.

Based on this determination, the employee ☐ **HAS** / ☐ **HAS NOT** arranged for the administration of a post-exposure treatment(s).

Also, according to OSHA requirements:

I have informed the employee of the evaluation results. ☐ YES / ☐ NO

I have informed the employee of any medical conditions resulting from the exposure to blood or other body fluids.
☐ **YES** / ☐ **NO**

Comments

_____

_____

_____

_____

Physician Information

Physician Name (please print): _____

Physican Signature: _____ Date of Evaluation: _____

Employee Signature: _____

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Follow Up Checklist

Post Exposure Follow Up Checklist

Employees Name: _____ Exposure Date _____

	Activity			Date
1	Employee furnished with documentation regarding exposure incident.			
2	Employee sent for medical evaluation of exposure			
3	Employee's blood collected and tested			
4	Employee offered Hepatitis B vaccine			
5	Source individual identified	☐ YES	☐ NO	
6	Consent from source individual to test	☐ YES	☐ NO	
7	Source individual's blood collected and tested and results given to exposed employee			
8	Documentation Collected and Shared with Health Care Provider			
	☐ Description of employee's duties			
	☐ Description of exposure incident form			
	☐ Exposure Incident Investigation form			
	☐ Result of source individual's blood testing			

Notes:

Appendix A

PREVENTING THE SPREAD OF BLOODBORNE PATHOGENS

Bloodborne pathogens, such as bacteria and viruses, are present in blood and body fluids and can cause disease in humans. The bloodborne pathogens of primary concern are hepatitis B, hepatitis C and HIV. These and other bloodborne pathogens are spread primarily through:

- *Direct contact.* Infected blood or body fluid from one person enters another person's body at a correct entry site, such as infected blood splashing in the eye.
- *Indirect contact.* A person's skin touches an object that contains the blood or body fluid of an infected person, such as picking up soiled dressings contaminated with an infected person's blood or body fluid.
- *Respiratory droplet transmission.* A person inhales droplets from an infected person, such as through a cough or sneeze.
- *Vector-borne transmission.* A person's skin is penetrated by an infectious source, such as an insect bite.

Follow standard precautions to help prevent the spread of bloodborne pathogens and other diseases whenever there is a risk of exposure to blood or other body fluids. These precautions require that all blood and other body fluids be treated as if they are infectious. Standard precautions include maintaining personal hygiene and using personal protective equipment (PPE), engineering controls, work practice controls, and proper equipment cleaning and spill cleanup procedures.

TO PREVENT INFECTION, FOLLOW THESE GUIDELINES:

- Avoid contact with blood and other body fluids.
- Use CPR breathing barriers, such as resuscitation masks, when giving ventilations (rescue breaths).
- Wear disposable gloves whenever providing care, particularly if you may come into contact with blood or body fluids. Also wear protective coverings, such as a mask, eyewear and a gown, if blood or other body fluids can splash.
- Cover any cuts, scrapes or sores and remove jewelry, including rings, before wearing disposable gloves.
- Change gloves before providing care to a different victim.
- Remove disposable gloves without contacting the soiled part of the gloves and dispose of them in a proper container.
- Thoroughly wash your hands and other areas immediately after providing care. Use alcohol-based hand sanitizer where hand-washing facilities are not available if your hands are not visibly soiled. When practical, wash your hands before providing care.

TO REDUCE THE RISK OF EXPOSURE, FOLLOW THESE ENGINEERING AND WORK PRACTICE CONTROLS:

- Use biohazard bags to dispose of contaminated materials, such as used gloves and bandages. Place all soiled clothing in marked plastic bags for disposal or cleaning. Biohazard warning labels are required on any container holding contaminated materials.
- Use sharps disposal containers to place sharps items, such as needles.

- Clean and disinfect all equipment and work surfaces soiled by blood or body fluids.
  - Use a fresh disinfectant solution of approximately 1½ cups of liquid chlorine bleach to 1 gallon of water (1 part bleach per 9 parts water, or about a 10% solution) and allow it to stand for at least 10 minutes.
  - Scrub soiled boots, leather shoes and other leather goods, such as belts, with soap, a brush and hot water. If worn, wash and dry uniforms according to the manufacturer's instructions.

IF YOU ARE EXPOSED, TAKE THE FOLLOWING STEPS IMMEDIATELY:

- Wash needlestick injuries, cuts and exposed skin thoroughly with soap and water.
- If splashed with blood or potentially infectious material around the mouth or nose, flush the area with water.
- If splashed in or around the eyes, irrigate with clean water, saline or sterile irrigants for 20 minutes.
- Report the incident to the appropriate person identified in your employer's exposure control plan immediately. Additionally, report the incident to emergency medical services (EMS) personnel who take over care.
- Record the incident by writing down what happened. Include the date, time and circumstances of the exposure; any actions taken after the exposure; and any other information required by your employer.
- Seek immediate follow-up care as identified in your employer's exposure control plan.

Occupational Safety and Health Administration (OSHA) regulations require employers to have an exposure control plan, a written program outlining the protective measures the employer will take to eliminate or minimize employee exposure incidents. The exposure control plan guidelines should be made available to employees and should specifically explain what they need to do to prevent the spread of infectious diseases.

Additionally, OSHA requires that a hepatitis B vaccination series be made available to all employees who have occupational exposure within 10 working days of initial assignment, after appropriate training has been completed. However, employees may decide not to have the vaccination. The employer must make the vaccination available if an employee later decides to accept the vaccination.

Check out OSHA's website (www.osha.gov) or refer to your employer's exposure control officer for more information on OSHA's Bloodborne Pathogens Standard (29 CFR part 1910.1030).