



The California State University Owner Controlled Insurance Program (OCIP)

Safety Manual

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I. PROJECT SAFETY POLICY

Each contractor will supervise and direct the work, using its best management skills and technical expertise. The contractor is solely responsible for all construction means, methods, safety, techniques, sequences, and procedures. This includes all safety precautions and programs in connection with the work and coordination of all portions of the work. Each subcontractor, of any tier, is responsible for all safety precautions and programs in connection with the work under the prime contractor agreement.

Each prime contractor shall present a written safety program to the OCIP Safety Representative for review for conformance to this policy. This safety program will meet or exceed all applicable state, county and city laws, statutes, regulations, codes, ordinances, and orders of those governing bodies having jurisdiction over the work, including the guidelines set forth in this OCIP Safety Manual. Each subcontractor of any tier shall present a written safety program to the prime contractor unless the subcontractor adopts the prime contractor's job specific OCIP safety program in its entirety.

This document serves to provide certain guidelines for the prime contractor and subcontractor, of any tier, to establish a safe and drug-free work environment.

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II. INTRODUCTION

Construction is a highly safety-sensitive occupation. As a result, this manual has been developed to ensure pro-active safety processes are used on this project. The prime contractor or subcontractor of any tier on this project shall have a goal to prevent injuries to all employees and the down time associated with incidents and accidents. The requirements of Cal/OSHA, state and local ordinances and this manual establish the guidelines that safety and loss prevention programs must meet or exceed.

In addition to setting minimum standards, this manual promotes safety by facilitating on-site employee safety orientations designed to promote a safe work environment.

In the event of a conflict or inconsistency between this manual and other safety standards or statute, the most stringent standard shall govern.

The information in this manual shall not alter the provisions of the Construction Agreement. In the event of a conflict or inconsistency between this manual and the Construction Agreement, the Construction Agreement shall govern.

A. General Information

The Project Safety Team's objective is to emphasize that protecting people and property are of paramount importance to the success of this project, utilizing a pro-active safety process.

The pro-active safety process is a practical approach to the prevention of accidents. The emphasis is on discovering what causes accidents and identifying where in the work processes those causes are likely to occur. Only by breaking the cycle of accident evolution can accidents be controlled.

Accident prevention is a continuing process, not a fixed program. The Project Safety Team recognizes that contractors/subcontractors, of any tier, may have their own specific safety requirements. It is the responsibility of the contractor/subcontractor, of any tier, to identify to the Project Safety Team how their program may deviate from the guidelines set forth in this manual prior to any deviation.

If a contractor or subcontractor elects to adopt its own safety policy it is the responsibility of the contractor/subcontractor, of any tier, to meet or exceed the specifications listed in the OCIP Safety Manual or to identify to the Project Safety Team how their program may deviate from the guidelines set forth in this manual.

Program deviation must be reviewed approved in advance, by the OCIP Safety Representative.

While it is the responsibility of each individual to work safely, it is ultimately the contractor's/ subcontractors' responsibility to see that all rules (safety and health) and practices are followed and enforced. Active participation by contractor and subcontractors in construction safety and loss prevention programs is mandatory. Contractor and subcontractors, of any tier, must demonstrate to their employees' complete support and continuing involvement in all safety and loss prevention efforts.

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

B. Owner Safety Committee

The project shall have an Executive Oversight Committee/Owner Safety Committee to oversee and monitor safety at an executive level. The committee will, at minimum, be comprised of executive representatives from, Alliant OCIP Safety or management, CSU Senior Management, and other stakeholders, as appropriate. This committee shall meet quarterly to discuss the overall program, the effectiveness of the safety program and to ensure coordination and consistency for safety management across the CSU sites. The responsibilities of the committee shall include:

- a. review of the safety program performance,
- b. incident review,
- c. review of environmental procedures,
- d. sharing best practices,
- e. review of accident and incident notices,
- f. review of open safety observations and program trends.

C. Project Safety Team

The Project Safety Team is the safety committee for the project. Each project shall have a committee comprised of the General Contractor, Subcontractors, Project Managers and OCIP Safety Representatives. The General Contractor shall chair this team. On a monthly basis this group shall meet to discuss the project's safety program.

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

- a. accident and incident review from the prior month/quarter,
- b. open safety observation notices and program trends,
- c. construction plans and job hazard analyses for upcoming work,
- d. construction look ahead for planning/coordination,
- e. status of training programs and toolbox talks,
- f. status update on environmental performance commitments,
- g. review performance of the safety program,
- h. development of project specific goals and objectives.

D. Contractor's Site Specific Safety and Loss Prevention Program

The Contractor's bid shall include costs to establish and maintain a Site Specific Safety Program that meets or exceeds the requirements contained in this manual. If the OCIP Safety Manual is adopted, in addition the Contractor must supply the OCIP Safety Representative with the documented project specific safety items listed below. The Site Specific Plan must be submitted to OCIP Safety Representative for review at least 15 days prior to the initiation of construction activities.

Documented Project Specific Safety Items:

- a. assignment, accountability and 24-hour contact information of personnel responsible for safety on the project,
- b. scope of work evaluation,
- c. Site Logistics Plan,
- d. Fire Prevention Program,
- e. Emergency Response and Evacuation Plan,
- f. Public Protection Plan.

If a contractor or subcontractor undertakes any construction or demolition activities not covered by this program, an activity specific plan must be submitted to the Contractor for the project prior to commencement of work.

Contractor/subcontractors, of any tier, are solely responsible for carrying out their safety and loss prevention program. Therefore, the Project Safety Team requires that the contractors and subcontractors designate a competent on-site employee to carry out this responsibility. This employee is directly responsible for ensuring that their program and employee actions comply with the minimum safety standards required by state and local codes and regulations, and the safety guidelines set forth in this manual.

Alliant Insurance Services will monitor the project Site Specific Safety Plan.

The Alliant On-Site Safety Representative is a technical advisor to CSU OCIP project management and is a resource to the contractors/subcontractors on-site. The Contractor on-site Safety Representative is responsible for monitoring compliance with all policies and procedures established for the project.

E. Drug Free Work Environment

Resulting from the safety sensitive nature of construction, and in order to maintain a safe, healthy and efficient work environment, and to minimize absenteeism and tardiness, all Employers shall implement a Substance Abuse Prevention Policy that, at minimum, includes screening and testing as prescribed by this section.

- a. Orientation. The Contractor and/or subcontractors shall give new employees to the project a first-day employee orientation and a package of written material that includes the following information: the hazards of drugs in the workplace; advance notice of the drug and alcohol testing program; the methods of testing that will be used; notice that construction projects are considered a safety sensitive occupation and that employee(s) should expect drug testing as a result and consequences of failing the drug test. Only employees of the Contractor and its subcontractors of any tier that perform work on the site shall be subject to this policy. The Owner Safety Committee will provide the minimum content of the orientation package which may be expanded by the Contractor.
- b. Employee Consent. Each employee shall be asked to sign a document before going to work on site verifying they have received: the orientation, the notice of drug testing, and shall sign the consent to test. Employees that refuse to sign the notice & consent form shall not be allowed to work on the project site. The Contractor shall maintain a file copy of the advance notices signed by the employees.
- c. Project Posting. A notice that the project is a safety-sensitive site and that employee drug testing will be taking place shall be posted on the employee's information board alongside required DIR postings.
- d. Drug Awareness Education. Contractor and subcontractors shall periodically include in their weekly safety meetings a component on drug and alcohol awareness and hazards.
- e. Testing. All (100%) employees of the Contractor and subcontractors currently working on the project site on selected days, periodically during the course of the project, shall be required to submit to drug screening with oral swabs. CSU employees, delivery people, visitors, and others not assigned to the site shall not be tested. The screening will be administered by a testing agency provided by and paid for by the contractor as part of a Trustees allowance. Testing days will be determined by the Trustees with notice to the Contractor on the morning of the testing. When notified, the Contractor shall assemble a roll sheet of all people on-site the day of the screening. Screening will take place at the end of the work day immediately prior to workers leaving the site. All employee time including any overtime required as a result of drug and/or alcohol screening and testing consistent with the policy of this OCIP, is the responsibility of the employer of that employee/s. Contractor shall schedule the order of testing to minimize impact on the work. Workers on the roll sheet, and not present at the testing, shall be tested before their return to work.

- Negative Screening results. Negative screening results indicate neither drugs nor alcohol were detected. The employee may remain on the jobsite and is subject to future screening.
- f. Consequences of Failing a Screening. For non-negative screening results (positive or inconclusive) the employee may not return to the jobsite until a urine test has confirmed a negative result. A urine test shall be available to the employee at the site immediately following an inconclusive oral fluid screening. If the result of the follow-up urinalysis is negative, the test is concluded and the employee will be allowed to resume work activities. If the results of the urinalysis remains inconclusive the urine sample must be sent to a SAMSHA certified laboratory for GCMS confirmation followed by MRO review. If the test is confirmed positive the employee shall not return to the site. If the employer has a reinstatement policy in place as part of their pre-existing drug testing program, the reinstatement policy of the employer shall prevail allowing an employee to return to work as provided by the policy. The Contractor shall pay for the urine testing as a part of the Trustees drug testing Allowance.
 - g. Incident and Suspicion Testing. Reasonable suspicion and post-incident urine tests are required and are the responsibility of the employer / Contractor or subcontractor. Contractor shall establish a procedure and testing lab for these tests. Test results shall be submitted to the Trustees.
 - h. Industry-Accepted On-Site Instant Drug Screening Protocol. An industry-accepted on-site instant drug screening protocol may be used for the periodic assessment of workers, including post incident and reasonable suspicion testing, provided that all inconclusive screening results are referred to a SAMHSA (USDOT) Certified Testing Laboratory for confirmation. The test shall be capable of detecting the following drugs at cut off levels as specified.

NAME OF DRUG	SCREENING THRESHOLD (Oral)	SCREENING THRESHOLD (Urine)	CONFIRMATION THRESHOLD (Urine)
Methamphetamine	50 ng/ml	1000ng/ml	500 ng/ml
THC (Marijuana)	75 ng/ml	50 ng/ml	15 ng/ml
Cocaine	20 ng/ml	300 ng/ml	150 ng/ml
Amphetamines (Amp)	50 ng/ml	1000 ng/ml	500 ng/ml
Opiates (Opi)	40 ng/ml	2000 ng/ml	300 ng/ml
Phencyclidine (PCP)	10 ng/ml	25 ng/ml	25 ng/ml

Fundamental Requirements

- a. Periodic oral drug screening protocol will be used to obtain preliminary results only and determine if there is reasonable suspicion to proceed to a urine test. A negative result on the oral periodic screen concludes the test, and it will be reported to the employer as negative. When an oral and/or urine periodic screen test is positive or inconclusive urine must be sent to a SAMHSA certified laboratory for GCMS confirmation, followed by a MRO (Medical Review Officer) review. Specimens confirmed positive by the MRO will be reported to the employer. If the initial test was performed using urine, then the split specimen used for screening will be used to send to the lab for confirmation. For post-incident and reasonable suspicion tests, a breath alcohol test will be included consistent with US DOT requirements for breath alcohol testing. (See 49CFR Part40).
- b. Contractor shall implement and enforce a policy that prohibits the possession, distribution, promotion, manufacture, sale, use or abuse of illegal and unauthorized

drugs, drug paraphernalia, controlled substances and alcoholic beverages by Employees, agents or any person otherwise under the control of the Employer, including Employees and agents of Subcontractors and consultants while on the work site, or while otherwise covered by the OCIP while working on the Project. Further, Employees shall be prohibited from reporting to the premises under the influence of drugs or alcohol.

- c. The Policy must apply to all personnel, including but not limited to regular, part-time, probationary, casual and contract Employees of the company, as well as to Employees and agents of Subcontractors and consultants. The Employer shall take whatever legally permissible steps that are necessary or appropriate to enforce compliance with this policy.
- d. Employees governed by this policy may possess a prescription medication in its original container and prescribed for current use of the person in possession by an authorized medical practitioner provided that the Employee taking the prescription medicine performs no duties which may affect the Employee's work ability (particularly their alertness and coordination), safety and the safety of others. In the event of a report of such a prescription to the MRO, the MRO may advise the employer accordingly. Because marijuana remains illegal under Federal Law, medical marijuana cards or prescriptions permitting their use will not be allowed by workers on this project.
- e. At a minimum, any worker covered under OCIP shall be subjected to pre-project drug orientation and consent to drug testing in accordance with the OCIP Safety Manual
- f. The cost of all post incident and reasonable suspicion testing shall be the responsibility of each employer of the affected employee.
- g. Any worker covered under OCIP shall be drug and alcohol tested in accordance with the provisions of the OCIP program when involved in any type of incident, requiring third party first aid, a clinical visit and/or resulting in property damage is in excess of \$ 500 dollars.
- h. Any employee who refuses to take a drug screen or alcohol test in accordance with the terms of the contract shall be removed from the project and not allowed back on the project for a period of six (6) months and must consent to be drug screened before commencement of work.

F. Return to Work Program

Each Employer shall have a written Early Return to Work Program that shall be implemented on this project unless specifically prohibited by the terms of a Collective Bargaining Agreement. Following are basic guidelines for the Contractor to establish Early Return to Work (transitional duty) assignment for injured workers.

Benefits

- a. Effectively impacts the Employer's Experience Modification Rating and contributes to reduced insurance premiums,
- b. May eliminate the need for vocational rehabilitation,
- c. Boosts Employee morale and demonstrates that the Employer wants to cooperate with the injured worker,
- d. A worker on transitional duty can be of value to an Employer if there is an alternative plan or job description available.

III. RESPONSIBILITIES

A. Contractor Responsibilities

1. Expectations

Contractor and subcontractors, of any tier, have the explicit responsibility to perform work in accordance with state and local laws, ordinances, codes, regulations and the OCIP Safety Manual, affecting Safety and Health. In the case of conflict between codes, reference standards, drawings and other contract documents, the most stringent requirements shall govern. This is in addition to compliance with the company's own requirements. Contractor and subcontractors of any tier are accountable for fulfilling the responsibilities listed in this section.

2. Safety Representatives

Each Contractor/Subcontractor of any tier shall have a designated Safety Representative available at the site assigned the responsibilities of managing all aspects of safety related to employees under their direct control.

These duties may be performed by a Field Superintendent or Foreman having the required training, experience and qualifications listed in this OCIP Manual. These employees may have duties other than safety provided appropriate adherence to state and local laws, ordinances, codes, regulations and, the OCIP Safety Manual are followed by personnel under their direct control.

If the Contractor has 75 or more combined field employees on-site, said contractor must have a dedicated Contractor Safety Representative (CSR) assigned to the project full time. The assigned person shall have no other duties other than safety.

If a Subcontractor of any tier has a total combined field work force of 75 or more employees on-site, a dedicated full time Safety Representative must be on-site to oversee Safety related items. This representative will have no other duties other than safety.

The qualifications of the dedicated Contractor Safety Representative must be submitted to the Owner Representative for approval prior to assignment to the site.

Qualifications of the dedicated Subcontractor Safety Representative must be submitted to the Contractor Safety Representative for approval prior to assignment to the site.

Approval will be based on:

- a. Construction experience,
- b. Knowledge of safety officer responsibilities,
- c. Safety training as outlined in this manual.

The Owner or Owner Representative reserves the right to direct the removal and replacement of a CSR or SSR if necessary.

The Contractor Safety Representative must have the following minimum qualifications.

- a. The CSR shall have a minimum of five (5) years of qualified project safety experience which may include time spent in the role of a superintendent/safety representative on large, similar type construction projects that are representative of the planned construction activities.
- b. Evidence of completing the OSHA 30-Hour Construction Outreach Training or equivalent within the last three (3) years.

- c. Current CPR/First Aid Certification provided by The American National Red Cross or equivalent training.
- d. Ability to stop work in the event of workplace hazards until corrective action has been implemented.
- e. Understanding of state and local laws, ordinances, codes, regulations concerning Safety and these OCIP Safety regulations.
- f. Ability to conduct appropriate incident investigations.
- g. Ability to communicate with field personnel and project staff on relevant Health and Safety items.

The Subcontractor Safety Representative must have the following minimum qualifications:

- a. The SSR shall have a minimum of three (3) – five (5) years of qualified project safety experience on similar type construction projects.
- b. Evidence of completing the OSHA 10- or 30-Hour Construction Outreach Training or equivalent with the past three (3) years.
- c. Current First Aid/CPR certification provided by The American National Red Cross or equivalent training.
- d. Ability to stop work in the event of a workplace hazard, until corrective action has been implemented.
- e. Understanding of state and local laws, ordinances, codes, regulations concerning Safety and these OCIP Safety Regulations.
- f. Ability to conduct appropriate incident investigations.
- g. Ability to communicate with field personnel and project staff on relevant Health and Safety items.

3. On-Site Safety Representative or Designee Responsibilities

Specific responsibilities of the safety designee or dedicated safety representative include, but are not limited to the following:

- a. Employee Safety Orientation and Training
 - o Conduct safety and drug testing and awareness orientation sessions for employees new to the site, prior to their beginning work
 - o Participate in weekly tool box safety meetings; assist field supervisors, as requested, with meetings. **These meetings shall include at a minimum two (2) hours of drug awareness education over the duration of the project.**
 - o Conduct weekly supervisor safety meetings.
 - o Instruct supervisors on safety rules and regulations.
 - o Instruct employees on the proper use and care of personal protective equipment.
 - o Instruct employees concerning special procedures (e.g. lock-out, excavation, confined space entry, etc.) as required by OSHA or this manual.
 - o Conduct hazard communication training.
 - o Conduct respiratory training as required.
 - o Conduct emergency evacuation training.
- b. Record Keeping
 - o Complete Cal/OSHA, state, federal, company and project specific reports.
 - o Complete accident investigation reports.
 - o Complete inspection reports.
 - o Maintain training documentation.
 - o Complete and process OCIP safety and health reporting requirements, which includes but is not limited to inspections, incident / accident reports and training logs.
- c. Safety Standards, Rules and Regulations Enforcement
 - o Authority to stop work.

- Authority to take immediate corrective action.
- Implement, maintain, and update, as required, conditions and project site specific safety policies and procedures.
- Interpret and implement site specific safety policies and procedures.
- Demonstrate, by example, proper safety behavior.
- d. First Aid/ Medical Treatment
 - Ensure first aid supplies are adequate.
 - Investigate accidents and complete or obtain accident reports.
 - Coordinate transportation of employees with minor injuries to contractor's first aid station or designated medical facility.
- e. General Responsibilities
 - Keep the Contractors Safety Representative (CSR) and the Project Safety Team apprised of any safety related problems that have or may develop.
 - Conduct work area safety inspections and forward results to the (CSR)/ or Project Safety Team.
 - Conduct investigations of all accidents and incidents and forward reports to the CSR or Project Safety Team.
 - Compile OSHA statistical information and copy the OCIP Safety Team.

4. Orientation

One of the requirements of all contractors/subcontractors and their safety representative or designees is to ensure that a complete basic safety orientation is conducted for all their employees new to the site. A Project Orientation by the Contractor is required before an employee can receive a project ID and enter the field. The purpose of the orientation is to provide employees awareness of what they can expect and what is expected of them on site.

Scope

At a minimum, the orientation should include:

- a. Drug testing policies and consent form signed by the employee.
- b. Employee safety requirements and policies.
- c. Site Specific Safety and Health rules.
- d. Permitting procedures, including work permits, excavation, confined space entry, lock-out, etc.
- e. Hazard communication.
- f. Emergency alarms and evacuation procedures.

5. Documentation

All employees will complete and sign a Safety Orientation and drug testing consent form supplied by the contractor. Upon successful completion the employee will receive a hard hat sticker with an identification number to be worn on the employees hard hat at all times while on the project. Documentation of successful orientation and identification of said employees will be kept by the CSR, and be available upon request by the Trustees or OCIP Safety Representative.

6. Facility

The Contractor will facilitate the project orientation and provide an appropriate meeting place on site for use in conducting the orientation sessions.

7. Record Keeping

Proper documentation and record keeping of safety and related functions are essential. All required documentation needs to be maintained on site, available to the Trustees or OCIP Safety Representative upon request. The Contractor's or Subcontractors Project Manager is

responsible for ensuring that record keeping and related requirements are accurate and up-to-date.

8. Accident and Incident Investigations

a. Accidents

All accidents which result in first aid treatment must be investigated by the contractor's or subcontractor's safety representative or designee and documented on a project Accident Investigation Report. The report must be completed and submitted to the CSR if it involves a subcontractor and to the Owner Safety Representative if it involves employees of the Contractor.

b. Major Accidents

Only after appropriate actions have been taken to assure the safety and care of personnel and/or property:

- Immediately notify the Owner Safety Representative, Project Safety Team and the CSR of all major accidents.
- All accidents resulting in a lost time injury, fatality, or damage to property or equipment shall be investigated by the contractor's or subcontractor's field supervisor or safety representative. A representative of the OCIP Safety Team may join in the investigation.
- A thorough in-depth accident investigation should include, but is not limited to the following:
 - An analysis of the accident.
 - A documented signed witness statement.
 - Accident scene photographs, sketches, and drawings.
 - Recommendations to prevent re-occurrence.
- Forms to be utilized for accident investigation reporting may include:
 - Project Accident Investigation reports.
 - First Report of Injury.
 - Report of Disabling or Fatality, or other equivalent materials.

c. Incidents

All incidents, whether they involve injury or not (near miss) must be investigated by contractors or subcontractor's representative or designee and documented.

9. Emergency Response

- a. All jobsite emergencies must be reported immediately to the CSR, and OCIP Safety Representative. Incidents or injuries could include but are not limited to the following:
 - Medical emergencies (e.g., amputations, thermal or chemical burns, unconsciousness, electrocution, poisoning, breathing difficulties, traumatic impact).
 - Fatalities.
 - Bomb threats.
 - Workplace violence.
 - Civil disturbances.
 - Hazardous materials incidents.
 - Environmental contamination.
 - Property/utility damage.
 - Pedestrian injuries.
 - Structural failures and collapses.
 - Crane failures/Hoisting incidents.
 - Suspicious activities, items or deliveries.

- Vehicular accidents on or immediately adjacent to the project site during working hours.
- Any other known events that would potentially impact the health and safety of those working at the site or the general public.
- b. Jobsite emergency telephone numbers shall be posted on the jobsite bulletin board.
- c. A local street map clearly identifying the project and active entrances shall be maintained and posted on the jobsite bulletin board by the Emergency Telephone Numbers.
- d. In the event that there are no hard-wire (“land line”) telephones available at the project site, the Contractor shall identify and post an alternate number (in addition to 911) to be used to contact emergency service providers via cell phone. This is necessary, as dialing 911 on a cell phone does not always provide a direct connection to local Emergency Services.

10. Emergency Action Plan

The Contractor shall develop an Emergency Action Plan for the site, to be followed by all trades associated with the project. The Contractor shall submit to OCIP Safety Representative prior to the start of work, a comprehensive and enforceable Emergency Action Plan addressing, at a minimum, locations of all emergency egress routes, emergency vehicle access routes, alarm systems, evacuation routes, post-evacuation assembly locations and personnel accounting, response to medical emergencies and incident.

The Contractor shall review and revise this plan based upon any changes in the scope of work, existing site conditions, or the intended method of execution.

The Emergency Action Plan shall be communicated to all first-line supervisors, and shall be posted throughout the jobsite and contractor shanties, and communicated to workers during the Safety Orientation and weekly safety meetings.

Each Contractor shall maintain the following documents at their jobsite, and shall make available to all responders:

- a. 24 hour contact list for project supervisory staff.
- b. Site plans identifying stairs, scaffold stairs, hoist, flammable and combustible storage, compressed gas cylinder storage.
- c. Copies of Material Safety Data Sheets.

11. Emergency Notification (Fire or Medical)

- a. Call 911 or the Local Emergency Services. At minimum caller should provide:
 - Location of accident or incident,
 - Location and number of injured worker(s) (Medical),
 - The body part affected (Medical),
 - Cause of injury (Medical),
 - Company working for,
 - Call-back cell phone number,
 - Caller name.
- b. In case of fire in any building:
 - Evacuate the immediate area, and
 - Activate the fire alarm system (if available), and
 - Call the Fire Department.

- c. For fire outside of buildings:
 - o Evacuate the immediate area, and
 - o Call the Fire Department.

12. Security – Personnel Parking, Identification Procedures, Vehicles, Delivery

- a. All construction project access will be through the entrances as detailed in the approved site logistics plan.
- b. Employees must park in the designated construction parking areas. No parking will be permitted in un-designated areas. Violation of this policy may result in the vehicle being towed at the vehicles owners' expense.
- c. All visitors shall check in and sign in with an appropriate site representative.
- d. Overtime and weekend work must be scheduled and coordinated with the appropriate Owner Representative.
- e. All new hires are to report to the appropriate contractor's hiring trailer or facility.
- f. Following project orientation, sign off, and receipt of the required identification sticker, the employee shall proceed to his/her work location or trailer on the construction site.

13. Safety Observations

The OCIP Safety Representative will complete a written Project Safety Summary Report Form, to be provided to the contractor. A Project Oversight Observation Form, containing work activities, recommendations and observations that are not in compliance with the project's safety policies and procedures, will be left on-site and reviewed with a Contractor Safety Representative, if one is available, prior to the OCIP Safety Representative leaving the site. If a contractor or subcontractor receives a Safety Observation that has not been documented as corrected on the Observation form, said employer shall immediately correct the hazard noted, and document the corrective action, or reason for delayed abatement and return the form to the OCIP Safety Observer listed on the top of the report form, within 48 hours.

Subcontractor safety observation corrective action forms must also be submitted to the Contractor Safety Representative (CSR).

The Project Safety Summary Report and Project Observation Forms are listed in the Appendix of this document.

The OCIP Safety Representative reserves the right to audit the project site at their discretion. Project specific check-in policies should, and are expected to be followed by all OCIP Safety Representatives. Surveys made of jobsite premises and/or operations by the OCIP Safety Representative, are not intended to detect all potential causes of loss, code violations, or exceptions to good practice and does not relieve the Contractor/Sub-Contractor of any responsibilities to identify and correct unsafe practices or conditions. CSU or Alliant Insurance Services assume no liability because of conducting or providing such service.

B. Subcontractor Responsibilities

Subcontractors of any tier are responsible for complying with the safety requirements outlined by both the OCIP Safety Manual and the contractor, even though some of the requirements may be above and beyond the subcontractor's own safety policies and applicable requirements.

Subcontractors of any tier are responsible for the administration of the site safety and security procedures, including but not limited to:

- a. Providing a list to the Contractor of all competent or qualified personnel required for their scope of work,

- b. Providing the names of all CPR/First Aid employees on site,
- c. Providing the Contractor with a list of all hazardous materials or items used on-site with all updated MSDS sheets,
- d. Providing a list of supervisory personnel including off duty contact information,
- e. Adequately identifying tools and equipment,
- f. Securing all tools and equipment at the end of the shift to prevent vandalism, theft or unauthorized use,
- g. Ensuring all subcontractor employees comply with project rules and regulations,
- h. Ensuring proper identification is acceptable and displayed while on site.

1. Project Rules and Regulations

Good conduct is essential to the common good of all employees and the efficient progress of the job. Undesirable conduct including, but not limited to the following will not be tolerated and could be grounds for dismissal from the project:

- a. Unauthorized possession of any project property or material,
- b. Possession of or use of intoxicants on premises, regardless of source,
- c. Engaging in disorderly conduct,
- d. Gambling, including sale of chances,
- e. Fighting on project premises,
- f. Unauthorized sleeping on the job during working hours,
- g. Failure to wear or use required safety equipment,
- h. Failure to observe safety, sanitary or medical rules and practices,
- i. Illegal possession or use of narcotics or non-prescribed tranquilizers or pep pills on premises, or attempting to bring them on-site,
- j. Possession or use of firearms, weapons, or explosives is expressly prohibited on the project premises,
- k. Defacing or damaging of equipment, tools, material or other property of the project or contractor,
- l. Distributing or posting literature, photographs or other printed material, soliciting or attempting to solicit or collect funds without prior permission from CSU Project Management.

2. Enforcement

CSU and its OCIP safety representatives reserve the right to enforce all security and safety regulations. CSU and its OCIP representatives neither imply nor assume responsibility for safety of employees, damage, fire or theft, and contractors'/subcontractors' tools, vehicles and material.

The field supervisors have the responsibility for overall training, control, and conduct of personnel on their crew. As first line supervisors, their role in the safety and health program is crucial because they set standards by which their employees work.

The field supervisors' safety responsibilities include, but are not limited to:

- a. task specific safety training,
- b. safety inspection,
- c. toll box safety meetings,
- d. accident investigation,
- e. Pre-Task Planning/Daily Briefing.

Every work operation should have a **Pre-Task Plan, Job Hazard Analysis** to identify work operations, potential hazards, and control of hazards through engineering controls and/or

through PPE (Personal Protective Equipment). JHA's are to be completed by a supervisor familiar with the task to be performed.

3. Daily Briefing

Each Contractor and Subcontractor shall conduct a pre-shift production and safety meeting at the start of each shift. A daily briefing form should be utilized to discuss and review the day's operations with each trade signed by all participants. This form should be an original signed by all participants and made available to the Contractor Safety Representative or OCIP Safety Representative upon request.

C. Project Safety Team

The Project Safety Team is devoted to generating and maintaining a high level of commitment for safe operations among all personnel assigned to the project site. Responsibilities and duties of the Project Safety Team include, but are not limited to, the following:

- a. Compile, follow-up, and maintain safety performance statistics for the project,
- b. Communicate above information to the project's senior management to ensure they are informed and involved in the safety program,
- c. Keep apprised of new regulations and developments to keep the safety policies and procedures current and effective,
- d. Conduct safety surveys of contractors' and subcontractors' activities to observe safety performance and make appropriate recommendations,
- e. Review and communicate methods and procedures to foster the highest level of accident prevention performance possible. Provide such information to the safety representative or designee,
- f. Assist with special consulting, training, etc., to the contractors and subcontractors regarding problems and challenges that may arise on the project,
- g. Assist with the prime contractors' employees' project orientation,
- h. Conduct accident investigations, if required,
- i. Administer the project Safety Incentive Program, if one is implemented,
- j. Review all accident investigation reports to ensure thorough investigations were conducted to control future accidents,
- k. Disseminate safety bulletins,
- l. Distribute written information to the safety representative or designee regarding new pro-active requirements, regulations or developments in safety,
- m. Review and evaluate contractors' safety meeting minutes when applicable to ensure that quality safety meetings are held,
- n. Provide this safety manual, other written safety information, posters, etc., as needed,
- o. Assist with coordination of public and regulatory agencies when applicable.
- p. Provide the availability of OSHA 10- and 30-hour OSHA Construction Outreach Training and other pertinent safety related awareness courses to Owner Representatives, Contractor Personnel and Subcontractor employees. Training would be conducted exclusively at the discretion of the Project Safety Team.

IV. SAFETY AND HEALTH PROCEDURES

The safety procedures established for this project are based on current work activities. Future work activities may require the development of additional safety procedures or clarification of existing policies and procedures.

It is the responsibility of each employee to work in a safe manner. However, it is ultimately the contractor's and subcontractor's responsibility to see that all safety and health rules and practices are followed.

Safety is never to be sacrificed for production. The safety goal for this project is to prevent accidents.

A. Administrative Requirements

Employers must meet certain administrative requirements that may include Cal/OSHA, local or city regulations, including specific registration, permitting certification, record keeping, and posting of information in the workplace.

Documents required at the jobsite could include but are not limited to the following:

- a. IIPP Program,
- b. Code of Safe Practices,
- c. All Cal/OSHA requires permits or certifications,
- d. Respiratory Protection Program,
- e. Heat Illness Prevention,
- f. Fall Protection plan,
- g. OSHA Log 300,
- h. Lock-out/block out activity records,
- i. Training/Inspection Records.

Postings could include but are not limited to the following:

- a. Cal/OSHA poster "Safety and Health Protection on the Job",
- b. Code of Safe Practices,
- c. Emergency phone numbers,
- d. Employee access to medical records,
- e. Hazard warning signs,
- f. Operating permit for air tanks,
- g. Operating rules for industrial trucks.

B. Aerial Devices and Elevating Work Platform

- a. Only authorized personal may operate aerial devices.
- b. Aerial devices must not rest on any structure.
- c. Controls must be tested before use.
- d. Workers must stand only on the floor of the basket. **No planks, ladders or other means are allowed to gain greater heights.**
- e. A fall protection system must be worn and attached to the boom or basket.
- f. Brakes must be set when employees are elevated.
- g. Belting off to an adjacent pole, structure or equipment while working from an aerial device is not permitted.
- h. An aerial lift must not be moved when an employee is on the elevated boom platform unless the operating conditions listed in Cal/OSHA 8CCR: 3648 (I) or manufacturer's specifications are met. Employees must adhere to the most stringent standard.

C. Elevating Work Platforms (Scissor Lifts)

- a. The platform deck shall be equipped with a guardrail or other structure around its upper

- periphery. Where the guardrail is less than 39 inches high, a personal fall protection system is required.
- b. The platform shall have toe boards at sides and ends.
 - c. Unless recommended for such use by the manufacturer, no elevating work platform shall be used on any inclined surface.
 - d. The following information must be displayed on the device:
 - o Manufacturer's name, model, and serial number.
 - o Rated capacity at the maximum platform height and maximum platform travel height.
 - o Operating instructions.
 - o Cautions and restrictions.
 - o Devices must be designed to applicable (ANSI) standards.

D. Airborne Contaminants & Dust

The employer must control employees' exposure to airborne contaminants and employees' skin contact. Airborne contaminants suspended in the air can exist in different forms including gases, vapors, and particulates (particles of either liquids or solids).

Airborne contaminants must be controlled by:

- a. Applying engineering controls.
- b. Removing employees from exposures to the hazard and by limiting the daily exposure of employees to the hazard.
- c. Providing respiratory protection equipment whenever such engineering controls are not practicable or fail to achieve full compliance.
- d. Asbestos is to be handled only by qualified and certified personnel,
- e. Contractor must determine the existence of asbestos in buildings/building materials prior to any work activities.
- f. Abatement contractors must be approved in accordance with state, federal, and local requirements for removal and disposal of asbestos containing material (ACM) and encapsulation.
- g. If there is discovery of ACM or PACM in the employees' working area, all work shall be stopped in such areas until appropriate personnel have been notified, and the decision has been made by appropriate qualified or certified personnel that work in the area is safe to proceed.

E. Air Compressors

- a. Employers must obtain a DOSH permit for the air tanks or air compressors operated at a work site. Exception: No permit is required for tanks with a diameter of less than six (6) inches., tanks equipped with a safety valve set to open at no more than 15 psi pressure, or tanks having a volume of one and half (1-½) cubic feet or less with a safety valve set to open at no more than 150 psi.
- b. Warning signs are required for electric air compressors equipped with an automatic-start function.
- c. Safety valves must be popped weekly.
- d. Air tanks must be drained per manufacturer's recommendation.
- e. Fans shall be guarded with a shroud or side screens.
- f. Portable air compressors on wheels must be prevented from rolling.

F. Barricades

- a. Barricades shall be erected wherever necessary to warn or protect people against falling in, through or off.

- o Barricades must be suitable for the area of use in accordance with state, local, or contractor and project requirements (i.e., blinker type barricade or protective barricade to provide physical protection from falling).
- b. To ensure the safety of the general public, the Contractor/Subcontractor shall provide and maintain adequate protection, such as chain link fences, gates and barricades, to separate work activities as required by the activity or from areas outside jobsite limits.
- c. Barricades/fences are to be placed around all construction trenches. Barricades could include construction type caution tape within fenced construction areas of the site. Construction tape must be offset from trench excavations a minimum of three (3) feet and visible above spoil piles.
- d. Red warning tape/signs shall only be used where an immediate hazard exists.
- e. All employees shall be instructed that danger signs or red danger tape indicates immediate danger and that special precautions are necessary.
- f. Yellow warning tape/signs should be used to indicate a potentially hazardous situation that could result in death or serious injury.
- g. All employees shall be instructed that caution signs/tape indicate a possible hazard against which proper precaution should be taken.
- h. General safety signs shall be used where there is a need for general instruction and suggestions relative to safety measures.
- i. Portable fencing shall be installed around construction work areas, contractor storage areas, and contractor's heavy equipment if they are not otherwise protected within the confines of the Project's perimeter barricade.
- j. Portable fencing shall be installed/braced to prevent it from blowing over during windy conditions.
- k. Base supports of portable fencing shall be installed/placed to eliminate tripping hazards when fencing is placed adjacent to sidewalks and walkways.
- l. The Owner's Authorized Representative reserves the right to prohibit use of, temporary fence panel systems that require the use of a tubular or pedestal base support system that presents a potential trip hazard to pedestrians.

G. Code of Safe Practices

The Code of Safe Practices is a set of work site rules that stipulate how to perform job duties safely and to keep the work site safe. The following are selected requirements:

- a. The employer must develop and adopt a written Code of Safe Practices.
 - o It must be specific to the employer's operations.
 - o It must be posted at each jobsite office or be readily available at the jobsite.
- b. Workers, when first hired, shall be given instructions regarding the hazards and safety precautions and directed to read the Code of Safe Practices.
- c. Supervisors shall conduct toolbox or tailgate safety meetings, or equivalent, with their crews at least every seven (7) working days to emphasize safety.
- d. Each Contractor/Subcontractor supervisor or foreman shall conduct a pre-shift production and safety briefing prior to the start of each shift. Documentation of said briefing should be signed by all participants and made available to the Contractor or Owner's Safety Representative upon request.

H. Concrete Construction

Injuries and illnesses common to the concrete construction industry include: Burns, rashes, and skin irritation, silicosis and respiratory disease, broken bones, lacerations, and crushing caused by falls from elevated work surfaces.

Because the hazards associated with concrete construction are great, employees must use appropriate personal protective equipment and conform to safe work practices.

1. Placement of Concrete

- a. Concrete pumping equipment and placing booms shall be set-up and operated according to manufacturer's guidelines and the Title 8 Safety Orders.
- b. The manufacturer's operation manual shall be maintained in legible condition and shall be available at the jobsite.
- c. Controls in the equipment shall have their function clearly marked.
- d. Operation of concrete placing booms in proximity of overhead high-voltage lines shall be in accordance with Article 37 of the High-Voltage Electrical Safety Orders.
- e. Equipment shall be inspected by a qualified operator prior to daily use and the inspection must be documented.

2. Masonry Construction

All masonry walls more than eight (8) feet high must be braced to prevent overturning and collapse unless the wall is adequately supported through its design or construction method. The bracing shall remain in place until permanent supporting elements of the structure are in place.

A limited access zone (LAZ) shall be established whenever constructing a masonry wall, and it must be established before the start of construction.

- a. The LAZ shall be established on the un-scaffold side of the work area.
- b. The width of the LAZ shall be equal to the height of the wall to be constructed plus four (4) feet and shall run the entire length of the wall.
- c. The LAZ shall be entered only by employees actively engaged in constructing the wall. The LAZ shall remain in place until the wall is adequately supported to prevent collapse, unless the height of the wall is more than 8ft., in which case the LAZ shall remain in place until regulatory requirements have been met.

I. Control of Employee Exposure from Dust Generated by Concrete or Masonry

During operations in which powered tools or equipment are used to cut, grind, core, or drill, concrete or masonry materials, a dust reduction system shall be applied to effectively reduce airborne particulate.

Safety and effectiveness of dust reduction systems

- a. Procedures shall be implemented to ensure that dust reduction systems maintain their effectiveness for dust reduction throughout the work shift.
- b. Dust reduction systems shall be installed, operated, and maintained in accordance with manufacturer's recommendations to the extent they exist.
- c. Local exhaust ventilation systems shall be designed, tested, maintained, used, and the waste materials they collect disposed of, in compliance with applicable requirements of sections 1530 and 5143 of The Cal/OSHA Safety Orders.
- d. Where electrical tools are used with water as a dust reduction system, this shall be done in accordance with applicable requirements of the Electrical Safety Orders.
- e. Exceptions are applicable only to the areas or work processes listed in The Cal/OSHA Construction Safety Orders, 8CCR: 1530.1.

J. Precast, Pre-Fabricated Concrete Construction, Tilt-Up, Panels

- a. An erection plan, addenda, and procedure shall be prepared by or under the direction of a professional Engineer registered in California.
- b. The erection plan, addenda, and procedure shall be available at the jobsite.

- c. Job inspections shall be made by the responsible engineer (or representative) during the course of erection.
- d. Proposed field modifications shall be approved by the responsible engineer.

K. Rebar and Other Impalement Hazards

- a. Employees working at grade or at the same surface as exposed protruding reinforcing steel or other similar projections shall be protected against the hazard of impalement by guarding all exposed ends that extend up to six (6) feet above grade or other work surface, with protective covers, or troughs.
- b. Employees working above grade or any surface and exposed to protruding reinforcing steel or other similar projections shall be protected against the hazard of impalement. Protection shall be provided by:
 - o The use of guardrails, or
 - o Approved fall protection systems meeting the design requirements of Article 24, of the Cal/OSHA Construction Safety Orders or
 - o Protective covers as specified in those same orders.
- c. All protective coverings must meet or exceed the protective covers specification, testing and approval of the applicable Cal/OSHA Construction Safety Standards as listed in 8CCR: 1712

L. Confined Space

Every year confined space entrants and would be rescuers die from hazards associated with confined space entry. Hazards such as oxygen deficiency, toxic and explosive atmospheres and uncontrolled energized equipment, are contributing factors to many of these unfortunate events.

In order to minimize unforeseen incidents, employers on site must:

- a. Recognize a confined space and the specific hazards associated with that space.
- b. Know and understand Title 8 California Code of Regulations (T8 CCR) 1950 - 1962 and related requirements concerning respiratory protection, fall protection, lockout/block out procedures, fire prevention, and rescue.

Confined space is defined in T8 CCR 1951 as a space that:

- a. Is large enough and so configured that an employee can bodily enter it;
- b. Has limited or restricted means for entry and exit; and
- c. Is not designed for continuous employee occupancy.

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.

General Requirements

Before it begins work at a worksite, each employer shall ensure that a competent person identifies all confined spaces in which one or more of the employees it directs may work, and identifies each space that is a permit space, through consideration and evaluation of the

elements of that space, including testing as necessary.

- a. Any conditions making it unsafe to remove an entrance cover shall be eliminated before the cover is removed.
- b. When entrance covers are removed, the opening shall be immediately guarded by a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the opening and that will protect each employee working in the space from foreign objects entering the space.
- c. Before an employee enters the space, the internal atmosphere shall be tested, with a calibrated direct-reading instrument, for oxygen content, for flammable gases and vapors, and for potential toxic air contaminants, in that order. Any employee who enters the space, or that employee's authorized representative, shall be provided an opportunity to observe the pre-entry testing.
- d. No physical hazard or hazardous atmosphere is permitted within a non-permit required space whenever any employee is inside the space.
- e. Continuous forced air ventilation shall be used, as follows:
 - o An employee shall not enter the space until the forced air ventilation has eliminated any hazardous atmosphere;
 - o The forced air ventilation shall be so directed as to ventilate the immediate areas where an employee is or will be present within the space and shall continue until all employees have left the space;
 - o The air supply for the forced air ventilation shall be from a clean source and shall not increase the hazards in the space.
- f. The atmosphere within the space shall be continuously monitored unless the entry employer can demonstrate that equipment for continuous monitoring is not commercially available or periodic monitoring is sufficient. If continuous monitoring is used, the employer shall ensure that the monitoring equipment has an alarm that will notify all entrants if a specified atmospheric threshold is achieved, or that an employee will check the monitor with sufficient frequency to ensure that entrants have adequate time to escape. If continuous monitoring is not used, periodic monitoring is required. All monitoring shall ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere. Any employee who enters the space, or that employee's authorized representative, shall be provided with an opportunity to observe the testing results of the monitoring.
- g. If a hazard is detected during entry:
 - o Each employee shall leave the space immediately;
 - o The space shall be evaluated to determine how the hazard developed; and
 - o The employer shall implement measures to protect employees from the hazard before any subsequent entry takes place.
- h. The employer shall ensure a safe method of entering and exiting the space. If a hoisting system is used, it shall be designed and manufactured for personnel hoisting; however, a job-made hoisting system is permissible if it is approved for personnel hoisting by a registered professional engineer, in writing, prior to use.
- i. The employer shall verify that the space is safe for entry and that the pre-entry measures have been taken, through a written certification that contains the date, the location of the space, and the signature of the person providing the certification. The certification shall be made before entry and shall be made available to each employee entering the space or to that employee's authorized representative.

If an employer decides that employees it directs will enter a permit required confined space, that employer shall have a written permit space program that complies with OSHA regulatory specifications implemented at the construction site. The written program shall be made available prior to and during entry operations for inspection by employees and their authorized

representatives.

Permit Required Confined Space Programs. Should contain at minimum, the following:

- a. Measures the employer shall implement to prevent unauthorized entry.
- b. Measures to identify and evaluate the hazards of permit spaces before employees enter.
- c. Develop and implement means, procedures, and practices necessary for safe permit space entry operations and rescue if necessary.
- d. Provide all necessary equipment needed such as:
- e. Monitoring, Communication, Lighting, PPE, Ventilation, and Rescue Equipment, etc.

M. Cranes

The term crane as used in this section shall be construed to include boom trucks and similar truck-mounted cranes.

- a. Cranes and derricks exceeding three tons rated capacity shall not be used in lifting service until an approved certifying agent has certified the equipment.
- b. Current annual and quadrennial (where required) inspection certificates shall be maintained on each crane.
- c. Cranes that do not have such evidence of inspection shall not be permitted to operate on the project.
- d. Current daily and periodic inspection records shall be maintained on each crane.
- e. An approved certifying agent shall re-inspect any crane that is involved in any incident or is damaged during set-up or operation, and a new certificate of inspection issued prior to being returned to service.
- f. Only Employees authorized by the employer and trained, in the safe operation of cranes or hoisting apparatus shall be permitted to operate such equipment.
- g. Where required, Operators shall have valid evidence of current licensing or certification in accordance with state and local requirements.
- h. Operators not having such evidence where required shall not be permitted to operate applicable machinery (except under terms and conditions prescribed for Trainees by applicable regulations).
- i. Outriggers will need to be fully extended during all lifts. If geometry factors prevent fully extending the outriggers, then outriggers need to be extended per manufactures specifications and load chart limits. .
- j. Picks off the rubber will be performed in accordance with manufacturer's specifications.
- k. Equipment (other than derricks and articulating cranes) manufactured after March 29, 2003 with a rated capacity over 6,000 pounds shall have at least one of the following: Load weighing device, load moment (or rated capacity) indicator, or load moment (or rated capacity) limiter.
- l. Cranes shall be equipped with a boom angle or a boom radius indicator and clearly legible load chart in clear view from the Operator's position.
- m. An effective, audible warning and operating signal device (such as a horn) shall be provided on the outside of the crane. The controls shall be in easy reach of the Operator.
- n. When required by the manufacturer's or certifying agent's instructions, outriggers shall be set so that wheels or crawler tracks within the boundary of the outriggers shall be relieved of all weight by the outrigger jacks or blocking.
- o. Plates, pads or mats shall always be used under the outriggers or crawlers of all cranes when a lift exceeds 75% of the capacity of the crane as it is configured for that lift. The plates, pads, or mats shall be of suitable material and size to support the crane on the surface that it is set up on.

- p. The Employer shall ensure that a qualified person visually inspects the crane, derrick, or hoist's controls, rigging and operating mechanism prior to the first operation of any work shift. Records of daily inspections by the Operator or other qualified person shall be maintained on the crane, and must be available for review upon request.
- q. Adjustments and repairs to the crane shall only be made by a qualified person.
- r. A fire extinguisher of not less than 10-BC rating shall be kept in serviceable condition and readily accessible to the Operator unless otherwise stated by the manufacturer.
- s. Operations should be conducted and the job controlled in a manner to prevent loads from being passed directly over workers, occupied workspaces, or occupied passageways.
- t. A qualified signal person shall be provided when the point of operation is not in full and direct view of the Operator unless a signaling or control device is provided. Only one person shall be permitted to give signals to the Operator.
- u. Any Employee involved in the operation may give a "stop" signal if such a signal is warranted.
- v. A legible chart depicting and explaining the system of crane signals used shall be conspicuously posted in the vicinity of the hoisting operation.
- w. All loads shall be rigged by an identified, qualified, and authorized Rigger.
- x. No Employee shall be permitted to ride on loads, hooks, or slings of any derrick, hoist, or crane.
- y. Fall protection is critical in crane operations and must be provided by employers. The fall protection systems vary depending on the type of crane being. Fall protection is required when the exposure meets or exceeds 6' in height.
- z. Swing radius protection shall be provided where a rotating crane is positioned to operate in areas where persons may be caught between rotating parts and fixed objects or non-rotating crane components.
- aa. Tag lines, restraint lines, or guide ropes shall be used on all loads except where their use presents a greater hazard. Such lines or ropes should be insulated to prevent shock, and shall not contain knots or splices that may snag on an object.
- bb. Cranes, hoists, or derricks shall not be left unattended while the load is suspended unless the load is over water, a barricaded area, or is blocked up or otherwise supported.
- cc. Before leaving the crane unattended, the Operator shall:
 - o Land or properly secure any attached load.
 - o Disengage clutch (if applicable).
 - o Set travel, swing, boom brakes, and other locking devices unless otherwise specified by the certifying agents.
 - o Put controls in the "off" position.
 - o Stop the engine.
 - o Secure the crane against accidental travel.
- dd. In all operations where the weight of the load being handled is unknown and may approach the rated capacity, a qualified person shall determine the magnitude of the load unless the crane is equipped with a load-indicating device.

A qualified person shall ensure that:

- ee. The crane is properly leveled for the work being performed and blocked where necessary.
- ff. The load is well secured and properly balanced in the sling or lifting device before it is lifted more than a few inches.
- gg. A designated person shall monitor the clearance between crane booms, load lines, and loads, and power lines and alert the Operator when necessary.
- hh. All work in and around power lines must follow applicable State Regulatory Standards.

- ii. Crane inspections should be made available at all time at the project site.

N. Rigging, Slings and Hooks

- a. Chains will be prohibited as rigging materials for any lifts.
- b. Hoisting hooks shall be of the safety latch-type.
- c. Crane hooks with cracks or with deformation of throat opening more than 15 percent in excess of normal opening or more than ten (10) degree twist from plane of unbent hook shall be removed from service.
- d. Ropes shall be inspected for proper lubrication, excessive wear, broken strands, and proper weaving.
- e. Slings will be inspected daily. Any wears showing deformation or damage will be permanently removed.

In order to determine proper time for replacement, a continuing inspection record shall be maintained for hoisting ropes. Conditions such as the following shall be reason for replacement:

- a. In running ropes, six (6) randomly distributed broken wires in one rope lay, or three (3) broken wires in one strand in one lay.
- b. Wear of one third (1/3) the diameter of outside individual wires.
- c. Kinking, crushing, bird caging, or other damage resulting in distortion of the rope structure.
- d. In standing ropes, more than two (2) broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection.
- e. Reduction of rope diameter below nominal diameter due to loss of core support, internal or external corrosion, or wear of outside wires.
- f. Fixtures are usually attached to wire rope by the use of wire rope clips. The clips must be attached with the inside curve of the U-bolt against the dead, or short end of the wire rope, and flat clip (saddle) against the live, or long end of the wire rope.
- g. Each day before being used, wire rope slings, alloy steel chain slings, metal mesh slings, and natural and synthetic fiber rope slings, and all fastenings and attachments shall be inspected for damage or defects by a qualified person.

Slings shall have permanently affixed tags stating the following:

- a. Manufacturer's name or trademark.
- b. Rated capacity.

O. Critical Lifts: Cranes, Boom Trucks, Derricks, Etc.

Critical Lift Plan shall be prepared for all lifts that:

- a. Exceed 75% of the lifting device's capacity as configured for that lift; or
- b. Is deemed a critical lift by the Owner or Authorized Representative by reason of potential negative consequences to safety, structure, or schedule; or
- c. Involve two or more cranes or lifting devices.
- d. A qualified person shall prepare the Critical Lift Plan. The qualified person preparing the plan may be the crane operator, lift supervisor, or rigger. The crane operator, lift supervisor, and rigger shall participate in the preparation of the plan. The plan shall be documented, and a copy provided to the Contractor and the Authorized Representative. The plan shall be reviewed by, and signed by, all personnel involved with the lift.
- e. The plan shall specify the exact size and weight of the load to be lifted and all crane and rigging components that add to the weight. The manufacturer's maximum load limits for the entire range of the lift as listed in the load charts shall also be specified.

- f. The plan shall specify the lift geometry and procedures, including the crane position, height of the lift, the load radius, and the boom length and angle, for the entire range of the lift.
- g. The plan shall designate the crane operator, lift supervisor, and rigger, and state their qualifications.
- h. The plan will include a rigging plan that shows the lift points and describes rigging procedures and hardware requirements.
- i. The plan will describe the ground conditions, outrigger or crawler track requirements, and, if necessary, the design of mats, necessary to achieve a level, stable foundation of sufficient bearing capacity for the lift.
- j. For floating cranes or derricks, the plan shall describe the operating base (platform) condition and any potential list.
- k. The plan will list environmental conditions under which lift operations are to be stopped.
- l. The plan will specify coordination and communication requirements for the lift operation.
- m. For tandem or tailing crane lifts, the plan will specify the make and model of the cranes, the line, boom and swing speeds, and requirements for an equalizer beam.

P. Demolition

A DOSH permit is required for demolitions of any building or structure more than 36 feet high. The Project Administrator shall hold a Project Permit and all other employers directly engaged in demolition or dismantling activity shall hold an annual permit.

- a. A pre-demolition survey must be made to determine whether the planned work will cause:
 - o any structure to collapse,
 - o worker exposure to hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous substances,
 - o worker exposure to asbestos or lead,
 - o worker exposure to carcinogenic chemicals,
 - o worker exposure to silica.
- b. Utilities to the structure to be demolished must be turned off or protected from damage.
- c. The Contactor shall develop an Emergency Call List for all known utility owners prior to the start of demolition work.
- d. A site plan must be marked up to show the locations of known utilities and shut off valve controls.
- e. Pipe-covering insulation and column fire protection, along with HVAC ducts will be surveyed for asbestos.
- f. Adequate dust controls procedures shall be implemented during demolition, stockpiling and loading operations.
- g. The Contractor and Employer must check continually for hazards created by weakening of the structure's members. If such hazards occur it must be corrected before workers may continue.
- h. Chutes or chute sections that are at an angle of more than 45 degrees from the horizontal must be entirely enclosed except for openings equipped with closures at or about floor level for the insertion of materials.
- i. Any chute opening into which employee's dumps debris by hand must be protected by a guardrail.

Q. Electrical

- a. Only qualified persons may work on electrical equipment or systems.
- b. Maintenance of electrical installations is required to ensure their safe condition.

- c. Electrical equipment and wiring must be protected from mechanical damage and environmental deterioration.
- d. Covers or barriers must be installed on boxes, fittings, and enclosures to prevent accidental contact with live parts.
- e. Flexible cords may be used in place of permanent wiring methods for temporary work if the cords are equipped with an attachment plug and energized from an approved receptacle.
- f. Flexible cords must be Hard Surface Type and cannot be spliced unless they are size No. 12 (or larger).
- g. Skirted attachment plugs must be used on all equipment operating at more than 300 V.
- h. Each receptacle must have a grounding contact that is connected to an equipment grounding conductor.
- i. Temporary wiring must be grounded.
- j. Electrically powered tools and electrical equipment with exposed, noncurrent-carrying metal parts must be grounded.
Exception: Double insulated powered tools need not be grounded.
- k. Damaged or defective tools and cords shall be removed from service.
- l. The Contractor is responsible for designing and implementing a cord inspection program.
- m. Temporary lighting must be equipped with guards to prevent contact with lens or bulb.
- n. GFCI's are required for all temporary electrical wiring used cords and equipment.

R. Emergency Medical Services

Emergency Medical Services (EMS) must be readily available.

- a. A first aid kit must be provided by each employer on all jobsites and must contain the minimum of supplies as determined by an authorized licensed physician or as listed in T8 CCR 1512(c).
- b. The contents of the first-aid kit shall be inspected regularly to ensure that the expended items are promptly replaced.
- c. Trained personnel in possession of a current Red Cross First Aid certificate or its equivalent must be immediately available at the jobsite to provide first aid treatment.
- d. Each employer must ensure that its employees have access to emergency medical services at the jobsite. Where more than one employer is involved in a single construction project on a given construction site, the employers may agree to ensure employee access to emergency medical services for the combined work force present at the jobsite.
- e. Each employer shall inform all of its employees of the procedure to follow in case of injury or illness.
- f. The employer shall have a written plan to provide emergency medical services.
- g. Proper equipment for prompt transport of the injured or ill person to an EMS facility or an effective communication system for calling an emergency medical facility, ambulance, or fire service must be provided. Telephone numbers for listed emergency services must be posted
- h. The employers on the project may agree to ensure employee access to emergency services for the combined work force present at the jobsite.
- i. Exposure to blood borne pathogens is considered a job-related hazard to workers who are assigned first aid duties in addition to construction work. Although construction employees are specifically exempted from certain regulatory requirements they are required to provide appropriate protection for employees who may be exposed to blood borne pathogens when providing first aid.

S. Erection and Construction

1. Truss and beam requirements

- a. Trusses and beams must be braced laterally and progressively during construction to prevent buckling or overturning. The first member shall be plumb, connected, braced, or guyed against shifting before succeeding members are erected and secured to it.
- b. An erection plan and procedure must be provided for trusses and beams more than 25 feet long. The plan must be prepared by a California-registered Professional Engineer, and it must be followed and kept available on the jobsite for inspection by Cal/OSHA staff.

2. Structural steel erection

- a. A load shall not be released from its hoisting line until the solid web structural members are secured at each connection with at least two bolts (of the same size/strength as indicated in the erection drawings), and drawn wrench tight.
- b. Steel joists or steel joist girders shall not be placed on any support structure until the structure is stabilized.
- c. When steel joist(s) are landed on a structure, they shall be secured to prevent unintentional displacement prior to installation.
- d. Floors must be planked at every other story or 30 feet, whichever is less.
- e. A floor must be installed within two (2) floors below any tier of beams on which erection, riveting, bolting, welding, or painting is being done; otherwise, fall protection is required.
- f. 100% fall protection is required when workers are connecting beams where the fall distance meets or exceeds six (6) feet in height.
- g. During work other than connecting operations, fall protection is required where the fall distance meets or exceeds six (6) feet in height.
- h. Before any steel erection begins, the controlling contractor must provide the steel erector written notifications related to concrete strength and anchor bolt repair/replacement.
- i. Prior to removal of planking or metal decking, all employees must be instructed in the proper sequence of removal and safety.

3. Requirements for the working area where floor openings are to be uncovered:

- a. The floor area adjacent to the floor opening shall be barricaded or the floor opening shall be covered and secured when not attended by steel erection personnel.
- b. Floor openings shall be guarded by both temporary railings and toe boards or by covers.

4. Covers shall:

- a. Be capable of safely supporting the greater of 400 pounds or twice the weight of the employees, equipment and materials that may be imposed on any one (1) square foot area of the cover at any time.
- b. Have not less than 12 inches of bearing on the surrounding structure.
- c. Be checked by a qualified person prior to each shift and following strong winds.
- d. Never be removed by walking forward where the walking surface cannot be seen.
- e. Bear a sign stating, "OPENING-DO NOT REMOVE", in two (2)-inch high, black bold letters on a yellow background, and be secured in place when un-attended.

5. Permanent Flooring-Skeleton Steel Construction in Tiered Buildings

- a. Unless the structural integrity is maintained by the design.
- b. There shall be not more than eight (8) stories between the erection floor and the uppermost permanent floor.

- c. There shall be not be more than four (4) floors or 48 feet, whichever is less, of unfinished bolting or welding above the foundation or uppermost permanently secured floor.
- d. **All columns must be anchored by a minimum of four (4) anchor bolts. (T8 CCR: 1710 (f) (1) (A) Exception: When columns are braced or guyed to provide stability to support an eccentric load as specified in 1710 (1) (B)**

T. Excavations

- a. The employer must locate buried utilities **before** digging.
- b. Prior to excavation all known owners of underground utilities in the area shall be notified by calling the regional One Call Notification System.
- c. Employers shall check the entire jobsite for visual signs of substructures. This includes such items as manhole covers, water meter boxes, ditch lines, pavement patches, previous location marks, pole risers, and the obvious absence of overhead utilities.
- d. When excavations or boring operations approach the approximate location of subsurface installations, the exact location of the installation shall be determined by safe and acceptable means that will prevent damage to the subsurface installation. Employers must expose substructures **by hand** when work operations are within two (2) feet of the subsurface installation
- e. Employers shall be careful that no holes or cuts are knocked into the substructure by scraping or hammering.
- f. Employers shall be aware of the possibility of joint use of trench for power, telephone, gas, etc.
- g. Employers shall obtain an activity permit from Cal/OSHA in accordance with 8 CCR § 341 and §1539.
- h. Employers shall Notify OSHA with Activity notification form prior to work start with an excavation of five (5) feet or more where employees are required to enter.
- i. Employers shall maintain a copy of the permit onsite.
- j. Trenching or excavating activities must be under the supervision of a competent person at all times.
- k. The Employer material bracing, shoring, shielding, and trench boxes must be in good condition and of proper dimensions.
- l. A 'competent' employer individual must inspect excavations each day and maintain daily reports available upon request.
- m. The Employers "competent person" must determine the soil classification (Type A, B, or C) to determine the appropriate type of protective system required for the excavation.
- n. Excavated soils, materials or equipment are to be kept at least two (2) feet from the edge of the excavation.
- o. The Employer must provide barricades to protect people from falling into the trench. Barricades shall be offset three (3) feet from the excavation. Barricades could include construction type caution tape within fenced construction areas of the site.
- p. Ladders or other means of egress must be provided by the employer for access four (4) feet and greater and spaced within 25 feet of any worker inside the excavation.
- q. Where employees or equipment are required or permitted to cross over any excavation or trench over six (6) feet deep and 30 inches wide. Walkways or bridges at least 20 feet wide with standard guardrails shall be provided.
- r. Emergency rescue equipment, such as breathing apparatus, a safety harness and line, or basket stretcher, shall be readily available where hazardous atmospheric conditions exist or may reasonably be expected to develop during work in an excavation. This equipment shall be attended when in use. Employers must follow all regulations as outlined in the OCIP Safety Manual and all State OSHA regulations pertaining to trenching and excavating activities.

U. Fall Protection

- a. 100% Fall Protection shall be implemented by all trades for all fall exposures of six (6) feet or more. (Exception: Work from ladders and work around excavations, where those work exposures maintain compliance with OSHA specifications.)
- b. Where a fall hazard exists, efforts must be made to eliminate the hazard; provide protection against the hazard; or establish alternative methods to control/monitor the hazard.
- c. Rescue shall be addressed in the Employer's fall protection policies and fall protection training.

1. Training and Retraining

a. Training

Employers are required to provide training for any Employee who might be exposed to a fall hazard prior to the exposure or upon hiring. Documentation shall be maintained and available for review upon request.

Training must include an explanation of the company's fall protection policies and safe work practices with general instructions and precautions; specific instruction where required; hazard identification and correction; selection and proper use of protective devices; and maintenance of equipment. Instruction should also include correct procedures for inspecting, erecting, disassembling, and maintaining fall protection systems used; and the Employee's role in fall prevention and protection.

b. Retraining

When the Employer has reason to believe that any affected Employee who has already been trained does not have the understanding and skill required by paragraph (a) of this section, the Employer shall retrain each such Employee. Circumstances where retraining is required include, but are not limited to, situations where:

- changes in the workplace render previous training obsolete; or
- changes in the types of fall protection systems or equipment to be used render previous training obsolete; or
- Inadequacies in an affected Employee's knowledge or use of fall protection systems or equipment indicate that the Employee has not retained the requisite understanding or skill.

Methods of Fall Protection

- guardrails and toe boards,
- covers for floor and roof openings, pits, trap-doors, and temporary floor openings,
- Personal Fall Arrest Systems,
- Personal Fall Restraint Systems,
- Positioning Device Systems,
- safety nets,
- scaffold platforms,
- roof warning lines.

Fall Protection Plans, Controlled Access Zones, Safety Monitor Systems and Controlled Decking Zones are not permitted without special approvals by the Owner and OCIP Safety Representative.

The only allowable type of body restraint system allowed will be a full body harness with a lifeline, lanyard, and deceleration device. Safety belts are not permitted for fall arrest or fall restraint.

All personal fall arrest, personal fall restraint and positioning device systems shall be labeled as meeting the requirements contained in ANSI A10.14-1991.

Personal Fall Arrest Systems shall limit the fall distance to a maximum of six (6) feet and prohibit the Employee from contacting a lower level or structural element.

Where practicable, the anchor end of the lanyard shall be secured at a level not lower than the Employee's waist.

Lifelines and anchorages shall be capable of supporting a minimum dead weight of 5,000 pounds.

Lanyards and vertical lifelines shall have a minimum breaking strength of 5,000 pounds.

Anchorage used for attachment of personal fall arrest equipment:

Shall be independent of any anchorage being used to support or suspend platforms, and

- a. capable of supporting at least 5,000 pounds per employee, or
- b. part of a complete personal fall protection system used under the supervision of a qualified person that maintains a safety factor of at least two (2),
- c. the use of non-locking snap hooks is prohibited,
- d. body belts shall not be used for fall protection or fall restraint.

3. Positioning Device Systems

- a. Positioning devices shall be rigged such that an employee cannot free fall more than two (2) feet.
- b. Positioning device systems shall be inspected prior to each use.
- c. Anchorage points for positioning device systems shall be capable of supporting two (2) times the intended load or 3,000 pounds, whichever is greater.

4. Personal Fall Restraint

- a. A Personal Fall Restraint System shall not allow the employee to fall.
- b. Anchorage points used for fall restraint shall be capable of supporting four (4) times the intended load.
- c. Personal Fall Restraint protection shall be rigged to allow the movement of employees only as far as the sides of the working level or working area.

V. Fire Prevention

The employer is responsible for establishing an effective fire prevention program and ensuring that it is followed throughout all phases of the construction work.

Firefighting equipment must be:

- a. freely accessible at all times,
- b. placed in a conspicuous location, and
- c. well maintained.

A water supply that is adequate to operate firefighting equipment must be made available as soon as combustible materials accumulate.

All firefighting equipment shall be maintained in operating condition. Defective equipment shall be immediately replaced.

Fire extinguisher use must comply with the following:

- a. Fire extinguishers must be kept fully charged, inspected monthly, and serviced annually.
- b. At least one fire extinguisher, rated not less than 2A, must be provided at each floor.
- c. At least one fire extinguisher, rated not less than 2A, must be provided adjacent to the stairway at each floor level.
- d. Fire extinguishers must be kept within 50 feet of wherever more than five (5) gallon of flammable or combustible liquid or five (5) pounds of flammable gas is being used.

Storage of more than 25 gallons of flammable liquids shall be in a NFPA approved storage cabinet. Not more than 120 gallons of Class I, II, or III liquids may be stored in a storage cabinet.

No smoking signs shall be posted as required by operations or material exposures.

W. Flaggers

Flaggers must be used at locations on a construction site as soon as barricades and warning signs cannot effectively control moving traffic. The employer must ensure the following:

- a. Flaggers must be placed in locations so as to give effective warning.
- b. Worksite traffic controls and placement of warning signs must now conform to the requirements of the "California Manual on Uniform Traffic Control Devices for Streets and Highways, September 26, 2006" (the Manual), published by Caltrans.
- c. Warning signs must be placed according to the Manual.
- d. Flaggers must wear orange or strong yellow-green warning garments, such as vests, jackets, shirts, or rainwear.
- e. The employer shall select the proper type (class) of high visibility safety apparel for a given occupational activity by consulting the Manual, apparel manufacturer, ANSI/ISEA 107-2004, Appendix B or the American Traffic Safety Services Association (ATSSA).
- f. Flaggers shall wear warning garments manufactured in accordance with the requirements of ANSI/ISEA 107-2004, High Visibility Safety Apparel and Headwear.
- g. During the hours of darkness:
 - o The flagger shall be clearly visible to approaching traffic and be outfitted with reflectorized garments manufactured in accordance with the requirements of the ANSI/ISEA 107-2004, High Visibility Safety Apparel and Headwear.
 - o The retro reflective material shall be visible at a minimum distance of 1,000 feet.
- h. During snow or fog conditions, only colored vests, jackets and/or shirts with retro reflective material that meets the ANSI/ISEA and the minimum distance requirements shall be worn.
- i. Flaggers must be trained.
- j. Training must be documented in accordance with Injury & Illness Prevention Program requirements.

X. Flammables and Combustibles

Flammable and combustible liquids include gasoline, paint thinners, solvents, etc.

- a. These liquids must be kept in closed containers when not in use.
- b. Leakage or spillage must be disposed of promptly and safely.

- c. Flammable and combustible liquids may be used only where no open flames or sources of ignition exist.
- d. All containers of flammable and combustible liquids must be plainly marked with a warning legend.
- e. Flammable liquids must not be used:
 - o To wash floors, structures, or equipment except where there is adequate ventilation.
 - o To spray for cleaning purposes unless the liquids are used in a spray booth or outdoors where there is no ignition source within 25 feet of their use.
- f. Flammable liquids must be stored and transported in closed containers.
- g. Only approved metal safety cans will be allowed for flammable storage.
- h. All outside storage areas must be at least 20 feet from any building.
- i. No more than a one-day supply of flammables may be placed on the roof during working hours.
- j. Contractor must remove all flammables from the roof at the end of each workday.
- k. At least two (2) extinguishers appropriate for the type of flammable materials present shall be provided if flammables are present.

Y. Forklifts

- a. Industrial trucks such as forklifts shall be designed, constructed, and maintained in accordance with the applicable standards.
- b. The employer shall establish and enforce a system to prevent trucks, trailers or railcars from pulling away from the loading dock before the loading or unloading operation is completed. Trucks, trailers, and railcars boarded by forklifts during loading dock operations shall be secured against unintended movement.
- c. The rated lifting capacity of the forklift must be posted in a location readily visible to the operator.
- d. Elevating employees requires the following:
 - o The forklift must be equipped with a platform not less than 24" x 24" in size. The platform must:
 - be properly secured to the forks or the mast,
 - be equipped with guardrails, toe boards, and a back guard,
 - have no spaces or holes larger than one (1) inch,
 - have a slip-resistant platform surface.
 - o The operator must be at the controls while the employees are elevated.
 - o The operator must be instructed in the operating rules for elevating employees.
 - o Employees shall not sit, climb, or stand on platform guardrails or use planks, ladders, or other devices to gain elevation.
 - o When guard rails are not possible personal fall protection is required.
 - o Manufacturer's specifications regarding personnel being elevated and equipment used must be followed at all times.
- e. All forklifts must have parking brakes.
- f. All forklifts must have an operable horn.
- g. When the operator is exposed to the possibility of falling objects, the forklift must be equipped with overhead protection (canopy).
- h. When provided by the industrial truck manufacturer, an operator restraint system such as a seat belt shall be used.
- i. Seat belt assemblies shall be provided and used on all equipment where rollover protection is installed.
- j. The employer must post and enforce a set of operating rules that include the following:
 - o Only trained and authorized drivers may operate forklifts.
 - o Stunt driving and horseplay are prohibited.

- Employees must not ride on the forks.
- Employees must never be permitted under the forks (unless forks are blocked).
- The driver must inspect the vehicle once during a shift.
- The operator must look in the direction of travel and must not move the vehicle until all persons are clear of the vehicle.
- Forks must be carried as low as possible.
- The operator must lower the forks, shut off the engine, and set the brakes (or block the wheels) before leaving the forklift unattended (that is, when the operator is out of sight of the vehicle or 25 feet away from it).
- Trucks must be blocked and brakes must be set before a forklift is driven onto the truck bed.
- Extreme care must be taken when tilting elevated loads.
- The forklift must have operable brakes capable of stopping it safely when it is fully loaded.
- k. An employee must be properly trained (as certified by the employer) before operating a forklift.
 - An evaluation of the operator's performance must be conducted at least once every three (3) years.
 - Refresher training in relevant topics must be provided to the operator when:
 - The operator is observed operating the vehicle in an unsafe manner.
 - The operator has been involved in an accident or near-miss incident.
 - The operator's evaluation reveals that he or she is not operating the truck safely.
 - The operator is assigned to drive a different type of truck.
 - Changes in workplace conditions could affect safe operation of the truck.

Z. Forms, False work and Vertical Shoring

By definition, concrete forms are considered false-work. False-work, however, also includes support systems for forms, newly completed floors, bridge spans, etc., that provide support until appropriate curing or stressing processes have been completed.

Design of false-work

- a. Concrete formwork and false-work must be designed, supported, and braced to safely withstand the intended load.
- b. False-work design, detailed calculations, and drawings must be signed and approved by a California Professional Engineer (Ca PE) if the false-work height (sill to soffit) exceeds 14 feet, if the individual horizontal span length exceeds 16 feet, or if vehicle or railroad traffic goes through the false-work.

Note: For other false-work, approval may be provided by a manufacturer's representative or a licensed contractor's qualified representative.
- c. False-work plans must be available at the jobsite.

Minimum design loads are as follows:

- a. Total combined live and dead load: 100 psf.
- b. Live load and formwork: 20 psf.

Additional loads must be considered in the design.

Erection of false-work

- a. False-work must be erected on a stable, level, compacted base and supported by adequate pads, plates, or sills.
- b. Shore clamps (metal) must be installed in accord with manufacturer's instructions.

Inspection.

- o Before pouring concrete on false-work requiring design approval, an engineer (Ca PE) or the engineer's representative must inspect for and certify compliance with plans.

Note: For other false-work, the inspection and certification may be provided by a manufacturer's representative or a licensed contractor's qualified representative.

A copy of the inspection certification must be available at the jobsite.

Access to forms and false-work

- o Joists five and a half (5 ½) inches wide at not more than 36 inches o.c. may be used as walkways while forms are placed.
- o A plank (12 inches wide) may be used as a walkway while joists are placed.

Fall protection:

- o Periphery rails are required as soon as supporting members are in place.
Note: The area under formwork is a restricted area and must be posted with perimeter warning signs.

AA. Guardrails

Guardrails must be installed at the open sides of all work surfaces that are six (6) feet or higher above the ground, floor, or level underneath, or workers must be protected by other fall protection or, if justified, by a valid fall protection plan. Fall Protection Plans, Controlled Access Zones, Safety Monitor Systems and Controlled Decking Zones are not permitted without special approvals by the Owner and OCIP Safety Representative.

1. Guard-railing Specifications

Railings shall be constructed of wood or in an equally substantial manner from other materials, and shall consist of the following:

- a. A wooden top rail that is 42 inches to 45 inches high and that measures two (2) inches by four (4) inches or larger. A mid-rail shall measure at least one (1) inch by six (6) inches, and shall be placed halfway between the top rail and the floor when there is no wall or the parapet wall is less than 21 inches high.
 - b. Screens, mesh, intermediate vertical members, solid panels or equivalent members, may be used in lieu of a mid-rail subject to the following:
 - o Screens and mesh shall extend from the top rail to the floor and along the entire opening between top rail supports.
 - The gap between the intermediate vertical members shall not be greater than 19 inches.
 - Other intermediate members such as solid panels shall not have gaps more than 19 inches.
 - Wood posts shall be not less than two (2) inches by four (4) inches in cross section, spaced at eight (8)-feet or closer intervals
- Notes:** Use only "Selected lumber" - free from damage that affects its strength for wood railings. Steel banding and plastic banding shall not be used as top rails or mid-rails.

- c. All railings and components shall be capable of withstanding a force of at least 200 pounds applied to the top rail within two (2) inches of the top edge, in any outward or downward direction, at any point along the top edge.
- d. Mid-rails, screens, mesh, intermediate vertical members, solid panels, and equivalent members shall be capable of withstanding a force of at least 150 pounds applied in any downward or outward direction at any point.
- e. The ends of the rails shall not overhang the terminal posts, except where such overhang does not constitute a projection hazard.
- f. Railings shall be so surfaced as to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.

2. Guard-railing applications

- a. Floor and roof openings:
 - o Floor, roof, and skylights openings in any work surface must be guarded by railings and toe boards or by covers.
 - o The cover must be able to support 400 pounds or twice the weight of the employees, equipment, and material, and be securely fastened.
 - o Covers must bear a sign; with minimum one (1) inch letters, stating - **OPENING—DO NOT REMOVE.**
 - o Employees within six (6) feet of any skylight shall be protected from falling through the skylight opening by any one of the following methods:
 - Guardrails,
 - skylight screens,
 - personal fall protection system,
 - covers installed over the skylights,
- b. Access to surfaces glazed with transparent or translucent materials are not permitted unless an engineer certifies that the surface will sustain all anticipated loads.
- c. Wall openings: Wall openings must be guarded if there is a drop of more than four (4) feet and the bottom of the opening is less than three (3) feet above the working surface.
- d. Elevators: Guardrails are required for elevator shaft openings that are not enclosed or do not have cages.
- e. False-work: Guardrails are required as soon as false-work supporting members are in place.
- f. Demolition: Wall openings must be guard-railed during demolition except on the floor being demolished and on the ground floor.
- g. Roofing operations: Provisions must be made during roofing operations to prevent workers from falling off roofs six (6) feet or higher.
- h. Skeleton steel building: A single three eighths (3/8) inch wire rope, in lieu of standard railing, may be used to guard openings and exposed edges of temporary floors or planking in skeleton steel buildings. The three eighths (3/8) inch wire rope must have a breaking strength of 13,500 pounds (minimum) and be placed at 42 inches to 45 inches above the finished floor.

BB. Hazard Communication

A Hazardous chemical is any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, a hazard not otherwise classified, or is included in the List of Hazardous Substances prepared by the Director pursuant to Labor Code section 6382. These chemicals may include solvents, paints, thinners, cleaning agents, fresh concrete, and fuels. Employers whose employees may be exposed to hazardous chemicals are required to have a HAZCOM program per CCR Title 8, section 5194.

1. Employers must develop, implement, and maintain at the workplace a written HAZCOM program which includes information on labels, warning, safety data sheets, training requirements, and other relevant information as per CCR Title 8, section [5194](#).
2. The program must include the following:
 - a. A list of the hazardous chemicals that are used or stored in the workplace. It must include any chemicals listed in the following:
 - o The Hazardous Substances List. 339
 - o The Code of Federal Regulations (CFR, Part 1910, Subpart Z).
 - o Threshold Limit Values for Chemical Substances in the Work Environment (ACGIH) latest edition.
 - o Chemicals identified and regulated under Title 8, Article 107, Dusts, Fumes, Mists, Vapors and
 - o Gases, and Article 109, Hazardous Substances and Processes. 5194(d)(3)
 - o T22 CCR 12000 (Proposition 65).
 - b. Labels and other forms of warning on containers of hazardous chemicals.
 - c. Readily accessible SDSs.
 - d. Procedures for safe handling, use, storage, disposal, and clean-up to protect employees.

Note: All hazardous liquids capable of physical injury on skin contact must be covered, insulated or otherwise guarded against inadvertent contact. When the nature of the work makes covering or guarding impracticable, employer must provide personal protective equipment.
 - e. Training on the hazardous chemicals that employees are or could be exposed to in the workplace.
 - f. The methods the employer will use to inform employees of the hazards of non-routine tasks and the hazards associated with chemicals contained in unlabeled pipes in their work areas.
 - g. Clear and reasonable warnings for exposures to hazardous chemicals shall be displayed in the workplace using warning signs and labels or provided through information and training.
 - h. For each chemical included in the HAZCOM program, the information provided on the warning signs and labels must include all of the required texts as per the T8CCR requirements for that specific chemical.
 - i. A plan for managing multi-employer work-site issues including the methods used to inform other work related employers.
 - j. A plan for periodically (e.g. annually) evaluating the effectiveness of the program and for updating the program.
3. The HAZCOM program must be available on request to employees, their representatives, and Cal/OSHA.

Note: The Guide to the California Hazard Communication Regulation is available free of charge from Cal/OSHA.
4. Employers must make sure that:
 - a. Each container of hazardous chemicals in the workplace is labeled, tagged, or marked. Information can be provided using labels on shipped containers or with required information such as product identifiers, pictograms, precautionary and hazard statements, first aid information, and signal words.
 - b. The labels on incoming containers of hazardous chemicals substances are not removed or defaced.

5. Employers are required to:
 - a. Have a SDS for each hazardous chemical which they use.
 - b. Use SDSs that are consistent with the Globally Harmonized System (GHS).
 - c. Make the SDSs readily accessible during each work shift to employees when they are in their work areas.
6. Employers must provide all required information and training as per [5194\(h\)](#) to their employees. The training includes:
 - a. Labeling, pictograms, symbols, etc.
 - b. SDSs including physical and health hazards.
 - c. Chemical-specific information must always be available through labels and SDSs.
 - d. Location of hazardous chemicals.
 - e. Where the written HAZCOM program is kept.
 - f. Detection of presence or release of hazardous chemicals.
 - g. PPE and appropriate work practices.
 - h. Emergency and first aid procedures.

CC. Heat Illness Prevention

Heat illness is a serious medical condition resulting from the body's inability to cope with increased heat load. Heat illness can be one or more medical conditions including: heat rash, heat cramps, fainting, heat exhaustion, and heatstroke. Heat illness may be mild initially but can become severe or fatal if the body temperature continues to rise. Heat illness can also affect employees' work performance and increase their risk of having accidents. Supervisors, foremen and employees should look continuously for signs and symptoms of heat illness in themselves and fellow workers. It is vital to immediately report any signs and symptoms of heat illness to a supervisor. There is a lot of variability in the recognition and reporting of heat illness symptoms.

To help employers develop, implement, and monitor their heat illness prevention procedures, CAL/OSHA has provided on the following website a number of training materials and other resources: <http://www.dir.ca.gov/DOSH/HeatIllnessInfo.html>.

1. **Signs and symptoms of heat illness are:**
 - a. Heat Rash (Prickly Heat) - a skin irritation caused by excessive sweating and clogged pores during hot, humid weather. General Symptoms:
 - o can cover large parts of the body,
 - o looks like a red cluster of pimples or small blisters,
 - o often on the neck, chest, groin, under the breasts, or in elbow creases,
 - o uncomfortable, can disrupt sleep and work performance,
 - o complicated by infections.
 - b. Heat Cramps - Heat cramps affect people who sweat a lot during strenuous work activity. Sweating makes the body lose salts, fluids and minerals. If only the fluids are replaced and not the salts and minerals, muscles cramps may result. General Symptom: painful muscle spasms in the stomach, arms, legs, and other body parts may occur after work or at night.
 - c. Fainting - caused by a lack of adequate blood supply to the brain. Dehydration and lack of acclimatization to work in warm or hot environments can increase the susceptibility to fainting. Employees who stand for long periods or suddenly get up from a sitting or lying position when working in the heat may experience sudden dizziness and fainting. In these cases, victims normally recover consciousness rapidly after they faint. General Symptoms:

- sudden dizziness, light-headedness,
 - unconsciousness.
- d. Heat Exhaustion - Heat exhaustion is the body's response to an excessive loss of the water and the salt contained in sweat. Older employees or those with high blood pressure are more susceptible to heat exhaustion. Cool skin temperature is not a valid indicator of a normal body temperature. Although the skin feels cool the internal body temperature may be dangerously high and a serious medical condition may exist. General Symptoms:
- heavy sweating, painful muscle cramps, extreme weakness and/or fatigue,
 - nausea, vomiting, dizziness, headache,
 - body temperature normal or slightly high,
 - fainting,
 - pulse fast and weak,
 - breathing fast and shallow.
 - clammy, pale, cool, and/or moist skin.
- e. Heatstroke - Heatstroke is usually fatal unless emergency medical treatment is provided promptly. If the muscles twitch uncontrollably, keep the person from self-injury. Do not place any objects in the mouth. Monitor body temperature and continue cooling efforts until emergency medical treatment is provided to the victim. General symptoms:
- no sweating, the body cannot release heat or cool down,
 - mental confusion, delirium, convulsions, dizziness,
 - hot and dry skin (e.g., red, bluish, or mottled),
 - muscles may twitch uncontrollably,
 - pulse can be rapid and weak,
 - throbbing headache, shallow breathing, seizures and/or fits,
 - unconsciousness and coma,
 - body temperature may range from 102 - 104 degrees Fahrenheit or higher within 10-15 minutes.

2. Heat Illness Prevention Plan

Employers must protect employees from heat illness. All employees, foremen, and supervisors must be trained on the employer's heat illness prevention procedures.

All employers, having employees exposed in outdoor places of employment, must have a written heat illness prevention plan and implement effective procedures for the prevention of heat illness.

Heat Illness prevention plan, at minimum, should include:

- a. Procedures for providing sufficient water
- b. Procedures for providing access to shade
- c. High-heat procedures
- d. Emergency response procedures
- e. Acclimatization methods and procedures

The plan must be employer specific and be available on site or immediately available on the request of the employee or Division.

The plan shall be in writing in both English and the language understood by the majority of the employees.

Procedures for providing sufficient water include:

- a. Sufficient amounts of fresh, pure, and suitably cool potable water shall be available at all times
- b. Provide at least one quart per employee per hour for the entire shift.
- c. If individual water containers are provided, the containers must be clean and a source of potable water must be readily available.
- d. Water from unpermitted/unlicensed or non-tested water sources must not be used.

Shade requirements

When the outdoor temperature in the work area exceeds 80 degrees Fahrenheit, the employer shall have and maintain one or more areas with shade at all times while employees are present, that are either open to the air or provided with ventilation or cooling. The amount of shade present shall be at least enough to accommodate the number of employees on recovery or rest periods, so that they can sit in a normal posture fully in the shade without having to be in physical contact with each other. The shade shall be located as close as practicable to the areas where employees are working. Subject to the same specifications, the amount of shade present during meal periods shall be at least enough to accommodate the number of employees on the meal period who remain on site.

Shade shall be available when the temperature does not exceed 80 degrees Fahrenheit. When the outdoor temperature in the work area does not exceed 80 degrees Fahrenheit employers shall either provide shade as per the regulations or provide timely access to shade upon employee's request.

Employees shall be allowed and encouraged to take a preventative cool down rest in the shade when they feel the need to do so to protect themselves from overheating. Such access to shade shall be permitted at all times. An individual employee who takes a preventative cool-down rest (A) shall be monitored and asked if he or she is experiencing symptoms of heat illness; (B) shall be encouraged to remain in the shade; and (C) shall not be ordered back to work until any signs or symptoms of heat illness have abated, but in no event less than 5 minutes in addition to the time needed to access the shade.

If an employee exhibits signs or reports symptoms of heat illness while taking a preventative cool-down rest or during a preventative cool-down rest period, the employer shall provide appropriate first aid or emergency response according to the regulations.

High Heat Procedures

The employer shall implement high-heat procedures when the temperature equals or exceeds 95 degrees Fahrenheit. These procedures shall include the following to the extent practicable:

- a. Ensuring that effective communication by voice, observation, or electronic means is maintained so that employees at the work site can contact a supervisor when necessary. An electronic device, such as a cell phone or text messaging device, may be used for this purpose only if reception in the area is reliable.
- b. Observing employees for alertness and signs or symptoms of heat illness. The employer shall ensure effective employee observation/monitoring by implementing one or more of the following:
 - o Supervisor or designee observation of 20 or fewer employees, or
 - o Mandatory buddy system, or
 - o Regular communication with sole employee such as by radio or cellular phone, or
 - o Other effective means of observation.

- Designating one or more employees on each worksite as authorized to call for emergency medical services, and allowing other employees to call for emergency services when no designated employee is available.
- Reminding employees throughout the work shift to drink plenty of water.
- Pre-shift meetings before the commencement of work to review the high heat procedures, encourage employees to drink plenty of water, and remind employees of their right to take a cool-down rest when necessary.

Emergency Response Procedures/Acclimatization

Emergency Response Procedures. The Employer shall implement effective emergency response procedures including:

- a. Ensuring that effective communication by voice, observation, or electronic means is maintained so that employees at the work site can contact a supervisor or emergency medical services when necessary. An electronic device, such as a cell phone or text messaging device, may be used for this purpose only if reception in the area is reliable. If an electronic device will not furnish reliable communication in the work area, the employer will ensure a means of summoning emergency medical services.
- b. Responding to signs and symptoms of possible heat illness, including but not limited to first aid measures and how emergency medical services will be provided.
 - If a supervisor observes, or any employee reports, any signs or symptoms of heat illness in any employee, the supervisor shall take immediate action commensurate with the severity of the illness.
 - If the signs or symptoms are indicators of severe heat illness (such as, but not limited to, decreased level of consciousness, staggering, vomiting, disorientation, irrational behavior or convulsions), the employer must implement emergency response procedures.
 - An employee exhibiting signs or symptoms of heat illness shall be monitored and shall not be left alone or sent home without being offered onsite first aid and/or being provided with emergency medical services in accordance with the employer's procedures.
- c. Contacting emergency medical services and, if necessary, transporting employees to a place where they can be reached by an emergency medical provider.
- d. Ensuring that, in the event of an emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders.

Acclimatization.

- a. All employees shall be closely observed by a supervisor or designee during a heat wave. For purposes of this section only, "heat wave" means any day in which the predicted high temperature for the day will be at least 80 degrees Fahrenheit and at least ten degrees Fahrenheit higher than the average high daily temperature in the preceding five days.
- b. An employee who has been newly assigned to a high heat area shall be closely observed by a supervisor or designee for the first 14 days of the employee's employment.

Training.

- a. Employee training. Effective training in the following topics shall be provided to each supervisory and non-supervisory employee before the employee begins work that should reasonably be anticipated to result in exposure to the risk of heat illness:
 - The environmental and personal risk factors for heat illness, as well as the added burden of heat load on the body caused by exertion, clothing, and personal protective equipment.

- The employer's procedures for complying with the requirements of this standard, including, but not limited to, the employer's responsibility to provide water, shade, cool-down rests, and access to first aid as well as the employees' right to exercise their rights under this standard without retaliation.
 - The importance of frequent consumption of small quantities of water, up to 4 cups per hour, when the work environment is hot and employees are likely to be sweating more than usual in the performance of their duties.
 - The concept, importance, and methods of acclimatization pursuant to the employer's procedures.
 - The different types of heat illness, and the common signs and symptoms of heat illness, and appropriate first aid and/or emergency responses to the different types of heat illness, and in addition, that heat illness may progress quickly from mild symptoms and signs to serious and life threatening illness.
 - The importance to employees of immediately reporting to the employer, directly or through the employee's supervisor, symptoms or signs of heat illness in themselves, or in co-workers.
 - The employer's procedures for responding to signs or symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary.
 - The employer's procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider.
 - The employer's procedures for ensuring that, in the event of an emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders. These procedures shall include designating a person to be available to ensure that emergency procedures are invoked when appropriate.
- b. Supervisor training. Prior to supervising employees performing work that should reasonably be anticipated to result in exposure to the risk of heat illness effective training on the following topics shall be provided to the supervisor:
- The information required to be provided by applicable sections above.
 - The procedures the supervisor is to follow to implement the applicable provisions in this section.
 - The procedures the supervisor is to follow when an employee exhibits signs or reports symptoms consistent with possible heat illness, including emergency response procedures.
 - How to monitor weather reports and how to respond to hot weather advisories.

Heat Illness Prevention Plan.

The employer's shall establish, implement, and maintain, an effective heat illness prevention plan. The plan shall be in writing in both English and the language understood by the majority of the employees and shall be made available at the worksite to employees and to representatives of the Division upon request. The Heat Illness Prevention Plan may be included as part of the employer's Illness and Injury Prevention Program required by section 3203, and shall, at a minimum, contain:

- a. Procedures for the provision of water and access to shade.
- b. The high heat procedures.
- c. Emergency Response Procedures.
- d. Acclimatization methods and procedures.

DD. Heavy Equipment

1. Safety requirements for heavy construction equipment are as follows:
 - a. General repairs must not be made to powered equipment until workers are protected from movement of the equipment or its parts.
 - b. Before repairs are made workers must comply with lock-out/block-out requirements if applicable.
 - c. Wherever mobile equipment operation encroaches on a public thoroughfare, a system of traffic controls must be used.
 - o Flaggers are required at all locations where barricades and warning signs cannot control the moving traffic.
 - o Flaggers shall wear high visibility safety apparel and headwear manufactured in accordance to ANSI/ISEA standards. Also, all employees (on foot), such as grade-checkers, surveyors and others exposed to the hazard of vehicular traffic, shall wear high visibility safety apparel in accordance with the requirements of T8CCR; 1590, 1598 and 1599.
2. Job-site vehicles must be equipped with the following:
 - a. operable service, emergency, and parking brakes,
 - b. two operable headlights and taillights for night operation,
 - c. windshield wipers and defogging equipment as required (Cracked or broken windshields shall be promptly replaced),
 - d. seat belts if the vehicle has rollover protection structures,
 - e. fenders or mud flaps,
 - f. adequate seating if the vehicles are used to transport employees.

Vehicles and systems must be checked for proper operation at the start of each shift.

3. Rollover protection structures and seat belts must be installed for the following equipment having a brake horsepower rating above 20:
 - a. bulldozer,
 - b. front-end loader,
 - c. motor grader,
 - d. scraper,
 - e. tractor (except side boom pipe laying),
 - f. water wagon prime mover.
4. Haulage and earth moving equipment safety requirements are as follows:
 - a. Every vehicle having a body capacity of 2.5 cu. yds. or more must be equipped with an automatic backup alarm that sounds immediately on backing.
 - b. All other vehicles operating when rear vision is blocked must be equipped with an automatic back up alarm or its equivalent.

Note: In congested areas or areas with high ambient noise which makes hearing the alarm difficult, a signal person in clear view of the operator must direct the backing operation.
 - c. All vehicles must be equipped with a manually operated warning device.
 - d. Haulage vehicles in operation must be under operator control and must be kept in gear when descending grades.
 - e. The brakes on a haulage vehicle must meet the criteria specified by the Construction Safety Orders.
 - f. Machines shall be operated at speeds and in a manner consistent with conditions of the project.

- g. The control devices on a haulage vehicle must be inspected at the beginning of each shift.
- h. Exposed scissor points on front-end loaders must be guarded.
- i. Engines must be stopped during refueling.
- j. Lights are required for night operation.
- k. Vehicles loaded by cranes, shovels, loaders, and similar devices must have an adequate cab or canopy for operator protection.
- l. Dust control is required when dust seriously limits visibility.
- m. In dusty operations, equipment operators shall use adequate respiratory protection.
- n. Employers shall ensure appropriate hearing protection is provided and used when needed.
- o. Loads on vehicles must be secured from displacement.

EE. Housekeeping

Housekeeping is a term used to describe the cleaning of the work site and surrounding areas of construction project-related debris. The term also refers to the managing and storing of materials that are used on the project.

Individual employers are responsible for all debris or construction materials generated by their work process; all such material must be maintained in an orderly fashion at all times while on site.

Listed below are the general requirements for housekeeping to which all work sites are subject.

- a. Work surfaces, passageways, and stairs shall be kept reasonably clear of scrap lumber and debris. (All exits and access ways must be kept unobstructed.)
- b. Ground areas within six (6) feet of buildings under construction shall be kept reasonably free of irregularities.
- c. Storage areas and walkways on construction sites shall be kept reasonably free of dangerous depressions, obstructions, and debris.
- d. Piled or stacked material shall be placed in stable stacks to prevent it from falling, slipping, or collapsing.
- e. Material on balconies or in other similar elevated locations on the exteriors of buildings under construction shall be placed, secured or positively barricaded in order to prevent the material from falling.
- f. Metal containers with covers must be provided for disposal of oily and paint soaked rags.

GG. Injury and Illness Prevention Program

An Injury and Illness Prevention Program (IIPP) is required at all work sites. The program is considered effective if it satisfies the regulatory requirements of T8 CCR 3203 and helps the employer and the employee to identify and control the hazards specific to their work site. Following is a summary of the regulatory requirements.

1. The IIPP must be in writing and must include the following elements:
 - a. The employer's assignment of responsibilities,
 - b. A system for ensuring employee compliance with safe work practices,
 - c. A system for two-way communication between employers and employees about safety issues,
 - d. Scheduled inspections and an evaluation system to identify hazards,
 - e. An accident investigation process,
 - f. Procedures for correcting unsafe and unhealthy conditions,

- g. Safety and health training,
 - h. Recordkeeping.
2. Other IIPP requirements for construction are:
 - a. Employers must adopt and post a Code of Safe Practices at each jobsite. On the following Dept. of Industrial Relations (DIR) website, Plate A-3 in Appendix A of the Construction Safety Orders illustrates a general format
 - b. Periodic meetings of supervisors must be held to discuss the safety program and accidents that have occurred.
 - o Supervisors must conduct tailgate or toolbox safety meetings at least every ten (10) working days; however, weekly meetings are recommended.
 3. Required safety training for employees includes:
 - a. New workers shall be instructed in safe work practices, job hazards, and safety precautions and shall be required to read the Code of Safe Practices.
 - b. The employer shall permit only qualified or experienced employees to operate equipment or machinery.
 - c. Workers shall be instructed in the following:
 - o The recognition of jobsite-specific hazards.
 - o Procedures for protecting themselves.
 - o First aid procedures in the event of injury.

HH. Portable Ladders

1. Inspection and maintenance requirements are below:
 - a. Ladders shall be inspected by a Qualified Person for visible defects frequently and after any occurrence that could affect their safe use.
 - b. Ladders shall be maintained in good condition at all times.
 - c. Metal ladders shall not be exposed to acid or alkali materials that are capable of corroding the ladder and reducing the ladder's strength, unless recommended otherwise.
 - d. Remove ladders that have developed defects such as broken or missing steps, rungs, cleats, safety feet, side rails, or other defects from service, and tag or mark them with "Dangerous, Do Not Use".
 - e. All ladders shall be free of oil, grease, or slippery materials. Wood ladders shall not be painted with other than a transparent material.
2. Prohibited uses of portable ladders are given below:
 - a. Ladders shall not be used as a brace, skid, guy or gin pole, gang-way, or for uses they were not intended, unless recommended by the manufacturer.
 - b. Do not place planks on the top cap.
 - c. Step ladders shall not be used as single ladders or in the partially closed position.
3. To safely use portable ladders employees must also follow the requirements noted below:
 - a. Portable ladders shall not be overloaded when used.
 - b. The base of ladders shall be placed on a secure and level footing. Ladders shall not be placed on unstable bases.
 - c. Ladders shall not be used on slippery surfaces unless slippage is prevented.
 - d. The top of non-self-supporting ladders shall be placed with two rails supported equally, unless a single support attachment is provided and used.
 - e. Non self-supporting ladders shall, where possible, be used so that the horizontal distance from the top support to the foot of the ladder is one-quarter of the working length of the ladder.

- f. The ladder shall be so placed as to prevent slipping, and shall be tied, blocked, held, or otherwise secured to prevent displacement.
- g. Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds unless designed for such use.
- h. When two (2) or more separate ladders are used to reach an elevated work area, the ladders shall be offset with a platform or landing between the ladders.
- i. Extend ladder side rails to at least three (3) feet above the landing unless handholds are provided.
- j. Do not tie ladders together to provide longer sections unless the ladders are designed for such use and equipped with the necessary hardware fittings.
- k. Extension ladders shall be erected so that the top section is above and resting on the bottom section with the rung locks engaged.
- l. Do not place ladders in passageways, doorways, driveways, or any location where they may be displaced unless protected by barricades or guards.
- m. Climb or work with the body near the middle of the step or rung and do not overreach from this position. To avoid overreaching, the employee shall descend and reposition the ladder.
- n. Employees shall be prohibited from carrying equipment or materials which prevent the safe use of ladders.
- o. Face the ladder while climbing and descending, and maintain contact with the ladder at three-points at all times.
- p. Do not stand and work on the top three rungs of a single or extension ladder.
- q. Employees shall not stand on the top cap or the step below the top cap of a stepladder.
- r. Do not use the X-bracing on the rear section of a stepladder for climbing unless the ladder is so designed and provided with steps for climbing on both front and rear sections.
- s. Ladders shall not be moved or extended while occupied.
- t. Non-conductive ladders shall be used in locations where the ladder or user may contact unprotected energized electrical conductors or equipment. Conductive ladders shall be legibly marked with signs reading "CAUTION—DO NOT USE AROUND ELECTRICAL EQUIPMENT," or equivalent.
- u. The area around the top and bottom of a ladder shall be kept clear.
- v. Job made ladders shall be constructed in accordance with Cal/OSHA Specifications.
- w. Type II (Commercial) and Type III (Household) ladders are prohibited.

Duty Rating	Ladder Type	Working Load (lbs.)
Special Duty	IAA	375
Extra Heavy	Duty IA	300
Heavy	Duty I	250
Medium	Duty II	225
Light	Duty III	200

II. Laser Equipment

The primary hazard of using laser equipment is injury to the eyes. Following are selected regulatory requirements:

- a. Only qualified persons may operate laser equipment.
- b. Equipment must be turned off or shielded when unattended and not in use.
- c. Laser beams must never be pointed or directed at people.
- d. Lasers must have a label indicating their maximum output.
- e. Employees who have a potential exposure to direct or reflect laser light greater than five (5) mill watts shall be provided with anti-laser eye protection as specified in Section T8 3382(e).

- f. Warning signs and labels (in accordance with ANSI) must be posted in areas where lasers are used.

JJ. Lighting

Construction areas, ramps, corridors, offices, shops and storage areas, etc., shall be lighted to not less than the minimum illumination intensities in the following table while work is in progress:

Minimum Illumination Intensities in Foot-Candles.	
Foot-Candles	Area or Operation
10	General construction area lighting low activity.
10	Outdoor active construction areas, concrete placement, excavation and waste areas, access ways, active storage areas, loading platforms, refueling, and field maintenance areas.
10	Indoors: warehouses, corridors, hallways, stairways, and exit-ways.
10	General construction plant and shops (e.g., batch plants, screening plants, mechanical and electrical equipment rooms, carpenter shops, rigging lofts and active storerooms, barracks or living quarters, locker or dressing rooms, mess halls and indoor toilets and workrooms).
10	Nighttime highway construction work.
30	First-aid stations, infirmaries, and offices.

Nighttime highway construction work lighting shall be provided within the work zone to illuminate the task(s) in a manner that will minimize glare to work crews and not interfere with the vision of oncoming motorists.

KK. Lockout/ Tag out

When equipment needs to be de-energized during cleaning, servicing, or adjusting operations, the following applies:

- a. Machinery or equipment capable of movement shall be stopped, and the power source shall be de-energized or disengaged.
- b. Moveable parts shall be mechanically blocked or locked out.
- c. Equipment that has lockable controls or that is readily adaptable to lockable controls shall be locked out or positively sealed in the off position.
- d. Accident prevention signs or tags shall be placed on the controls of equipment, machines, and prime movers during repair work.
- e. An energy control procedure shall be developed and used by the employer.
- f. If the equipment must move during repair or maintenance, the employer shall provide and require the use of extension tools or other means to protect employees from injury due to the movement. Employees shall be trained on the safe use and maintenance of such tools or means.
- g. Repairs on Heavy Construction equipment must not be made until workers are protected from movement of the equipment or its parts.

An authorized person shall be responsible for the following before working on de-energized electrical equipment or systems unless the equipment is physically removed from the wiring system:

- a. Notifying all involved personnel.
- b. Locking the disconnecting means in the "open" position with the use of lockable devices, such as padlocks, combination locks or disconnecting of the conductor(s) or other positive methods or procedures which will effectively prevent unexpected or inadvertent energizing of a designated circuit, equipment or appliance.

LL. Machine Guarding

Machine guarding is required on all moving machine parts when the operation of a machine or accidental contact with the parts could injure the operator or other workers.

The following are some of the major moving machine parts that must be guarded:

- a. gears, sprockets, and chain drives,
- b. belt and pulley drives,
- c. belt conveyor head and tail pulleys,
- d. screw conveyors,
- e. exposed shafts and shaft ends,
- f. collars and couplings,
- g. hazardous revolving or reciprocating parts.

MM. Personal Protective Equipment

- a. Employers are required to assess the workplace to determine if hazards that require the use of personal protective equipment are present or are likely to be present.
- b. Employers must certify in writing that a workplace hazard assessment has been performed.
- c. Employers must select and have affected employees use properly fitted personal protective equipment (PPE) suitable for protection from existing hazards.
- d. Employees must, at all times unless otherwise directed, wear an approved hard hat on the jobsite.
- e. Employers must supply all personal protective equipment.
- f. Employees working in locations where there is risk of receiving eye injuries, such as punctures, abrasions, contusions, or burns, shall be safeguarded by means of appropriate eye or face protection.
- g. All safety glasses, goggles, and face shields must have the ANSI-Z87 approval. Safety glasses with permanently affixed side shields are required at all times.
- h. Safety eyewear manufactured to meet or exceed the requirements of ANSI Z87. 1-2003 must provide High Impact protection.
- i. Sturdy work boots are required at all times on the jobsite. Employees on the jobsite shall not wear tennis shoes, running shoes, casual street shoes, sandals or shoes made of other thin material.
- j. At minimum a Class II High Visibility reflective vest or equivalent shall be worn at all times while on-site.
- k. Respiratory, hearing, face, skin, and hand protection are required for any applicable areas on the jobsite.
- l. Employees who are required to wear respiratory protection must receive a medical assessment of their physical ability to wear the equipment, be properly fit tested, and be trained in the use, care, maintenance, and limitations of the respiratory device.
- m. Shirts must have a minimum four (4)-inch sleeve (no tank tops or shirtless attire), Shorts are not allowed.
- n. Proper professional work attire must be worn at all times.

NN. Public Protection Plan

The Contractor shall develop a Public Protection Plan prior to the commencement of work. The Plan shall be reviewed and revised as necessary throughout the project.

The plan shall be in writing and available at the jobsite for review upon request.

Public refers to parties not involved with the execution of work related to this project.

OO. Ramps and Runways

Regulations concerning ramps and runways are as follows:

1. General requirements
 - a. Ramps must be properly designed to provide a safe means of access for foot or vehicle traffic.
 - b. Open sides of ramps that are six (6) feet or more above ground must have standard guardrails.
2. Foot ramps
 - a. Foot ramps must be at least 20 inches wide and must be secured and supported to avoid deflection or springing action.
 - b. If the ramp slope exceeds two (2) feet of rise for every ten (10) feet of run, cleats must be eight (8) inches or more in length and must be placed not more than 16 inches apart.
3. Wheelbarrow ramps and runways
 - a. Wheelbarrow ramps and runways must be firmly secured against displacement.
 - b. Ramps more than three (3) feet high must be 30 inches wide, and planks must be firmly cleated together.
 - c. False-work design loads must be increased by ten (10) psf for worker-propelled carts.

PP. Scaffolds

1. General requirements
 - a. Scaffolds must be provided for work that cannot be done safely by employees standing on ladders or on solid construction that is at least 20 inches wide.
Exception: A 12-inch wide plank on members that are on 24 inch (or closer) centers is permitted.
 - b. The design and construction of scaffolds must conform to applicable standards and requirements. T8CCR: 1637, ANSI A10.8-1988, ANSI/ASSE A10.8-2001 Standards are based on stress grade lumber. Metal or aluminum may be substituted if the structural integrity of the scaffold is maintained.
 - c. Each scaffold must be designed to support its own weight and four (4) times the maximum load. Maximum working loads are as follows:
 - o Light-duty scaffolds: 25 psf of work platform.
 - o Medium-duty scaffolds: 50 psf of work platform.
 - o Heavy-duty scaffolds: 75 psf of work platform.
 - o Special-duty scaffolds: exceeding 75 psf as determined by a qualified person or a California registered Civil Engineer with scaffold design experience.
 - o Engineered scaffolds: as determined by a California registered Civil Engineer with scaffold design experience.
2. The erecting and dismantling of scaffolds are regulated as follows:
 - a. Scaffold erection and dismantlement must be supervised by a qualified person.
 - b. Scaffolds must be erected and dismantled according to design standards, engineered specifications, or manufacturer's instructions.
 - c. A DOSH permit is required for erecting and dismantling scaffolds that exceed three stories or 36 feet in height.
 - d. Scaffold access: ladders, horizontal members, and stairways must provide safe and unobstructed access to all platforms. The equipment must be located so that its use will not disturb the stability of the scaffold.

3. Metal Scaffolds must be secured as follows:
 - a. Scaffolds must be tied off with a double-looped No. 12 iron wire or a single-looped No. 10 iron wire or the equivalent at intervals not to exceed 30' horizontally and subject to the following:
 - b. Ties shall be required at the free ends of the scaffold when the height of the scaffold platform exceeds 3 times the least base dimension. The remaining ties of the first row shall be required when the height of the scaffold platform is four times the least base dimensions.
 - c. (B) Ties for subsequent levels shall be installed at 26-foot intervals vertically, with the last tie no further from the top than four times the least base dimension.
 - d. (C) As an alternate means, scaffolds shall be guyed or outriggers shall be used to prevent tipping or upsetting.
 - e. (D) Wind Loading. When scaffolds are partially or fully enclosed, specific precautions shall be taken to assure the frequency and adequacy of ties attaching the scaffolding to the building.
 - f. A compression member should prevent scaffold movement toward the structure.
4. Scaffold platforms must conform to the following:
 - a. Platforms must be capable of supporting the intended load.
 - b. Platforms must be planked solid (without gaps) and cover the entire space between scaffold uprights.

Exception: In solid planking the following gaps are permissible:

 - The opening under the back railing.
 - Wood scaffolds: eight (8) inches (maximum) horizontal.
 - Metal scaffolds: ten (10) inches (maximum) horizontal.
 - Space between the building (structure) and the platform.
 - Wood scaffolds: 14 inches (maximum).
 - Metal scaffolds: 16 inches (maximum).
 - Bricklayer's scaffolds: seven (7) inches (maximum) to finished face of building.
5. Platform minimum widths are as follows:
 - a. Light duty: 20 inches.
 - b. Heavy trades: four (4) feet.
 - c. Platform slope must not exceed two (2) feet vertically to 10 feet horizontally.
 - d. Overhead protection is required when people are working overhead.
 - e. Slippery platform conditions are prohibited.
6. Planking must conform as follows:
 - a. All solid sawn planking, unless specified in other orders, must be made of scaffold grade (structural plank 2,200 psi) lumber (see 1504) with a nominal dimension of at least two (2) feet by ten (10) feet.
 - b. Prior to being placed into service, all solid sawn wood scaffold planks shall be certified by, or bear the grade stamp of, a grading agency approved by the American Lumber Standards Committee.
 - c. All Douglas Fir and Southern Pine planking sized two (2)-inch by 10-inch (nominal) or two (2)-inch by nine (9)-inch (rough) shall not exceed a maximum span as follows:
 - Light trades @ 25 psf = ten (10) feet.
 - Medium trades @ 50 psf = eight (8) feet.
 - Heavy trades @ 75 psf = seven (7) feet.

All scaffold planks shall be visually inspected for defects before use each day. Defective or damaged scaffold planks shall not be used and shall be removed from service.

7. Planking shall overhang the ledger or support as follows:
 - a. A minimum of six (6) inches. A maximum of 18 inches.
 - b. A single plank (up to four (4) feet high) is only permitted on light-trade wooden pole and horse scaffolds.
 - c. All platform planks, shall not deflect more than 1/60 of the span when loaded to the manufacturer's recommended maximum load.
 - d. Guardrails must be installed on open sides and ends of platforms that are six (6) feet or higher.

Exception:

- a. X braces that substitute for a mid-rail must intersect 20 inches to 30 inches above the platform.
- b. X-braces that substitute for a top rail must intersect 42 inches to 48 inches above the platform, and a mid-rail must be placed at 19 inches to 25 inches above the platform.

Toe boards are required on all railed sides of work surfaces where employees work or pass below.

8. Prohibited scaffolds and supports:
 - a. Shore scaffolds.
 - b. Jack scaffolds (with brackets attached to single studs).
 - c. Lean-to scaffolds.
 - d. Stilts.
 - e. Nailed brackets.
 - f. Brick or blocks.
 - g. Loose tile.
 - h. Unstable objects.

Maximum scaffold working load must be posted or provided to and available from the jobsite supervisor.

9. Prohibited Work Practices:
 - a. Work on or from scaffolds during storms or high winds unless:
 - o A qualified person has determined that it is safe and Employees are protected by a personal fall arrest system, or wind screens.
Note: Wind screens shall not be used unless the scaffold is secured against the anticipated wind forces.
 - b. Wood platforms shall not be painted with opaque finishes, but can be coated with certain clear finishes.

10. Tower and Rolling Scaffolds.

- a. The specifications for tower and rolling scaffolds are as follows:
 - o The "height-to-base" must not exceed 3:1 unless the scaffold is secured.
 - o A screw jack must extend one third (1/3) of its length into the leg tube, and the exposed thread must not exceed 12 inches.
 - o Two (2)-wheels, or casters, must swivel; all four (4) must lock.
 - o A fully planked platform is required.
 - o All frame and center joints shall be locked together by lock pins, bolts, or equivalent fastenings.
 - o The scaffold must have horizontal diagonal bracing.

- Railings are required if the platform is six (6) feet or more above grade.
 - Ladders or other unstable objects shall not be placed on top of rolling scaffolds to gain greater height.
 - When scaffolds are built on motor trucks or vehicles, they must be rigidly attached to the truck or vehicle.
 - Trucks or vehicles that have scaffolds attached to them shall have a device in use whenever employees are on the scaffold that prevents swaying or listing of the platforms.
- b. Employees may ride on rolling scaffold moved by others below if the following conditions exist:
- The floor or surface is within three (3) degrees of level, and free from pits, holes, or obstructions.
 - The minimum dimension of the scaffold base, when ready for rolling, is at least one half (1/2) of the height. Outriggers, if used, shall be installed on both sides of staging.
 - The wheels are equipped with rubber or similar resilient tires. For towers 50 feet or over, metal wheels may be used.
 - The manual force used to move the scaffold shall be applied as close to the base as practicable, but not more than five (5) feet (1.5 meters) above the supporting surface of the scaffold.
 - Before a scaffold is moved, each employee on the scaffold shall be made aware of the move.
 - No employee shall be on any part of the scaffold which extends outward beyond the wheels, casters, or other supports.
- c. Employees may ride and move on a self-propelled rolling scaffold while on the platform without assistance from others below provided the following conditions are met:
- The scaffold platform shall not be more than four (4) feet above the floor level.
 - The working platform shall be no less than 20 inches in width with a maximum one (1) inch space between platform planks
 - Wheels or casters of rolling scaffolds shall be provided with an effective locking device that is used in accordance with T8 CCR: 1646(c) or rolling scaffolds shall be provided with an effective device that is used to prevent movement of the scaffold when workers are climbing or working on the scaffold.
 - The use of power systems such as motor vehicles, add-on motors, or battery powered equipment to propel a rolling scaffold is prohibited.

Employees who ride on rolling scaffolds and employees that assist in moving employees riding on a rolling scaffold shall be trained on the hazards associated with riding on a rolling scaffold.

QQ. Toilets/ Washing Facilities/ Sanitation

Regulations concerning toilets, hand washing, and sanitation include the following:

- a. Toilet facilities are required at the jobsite.
- b. A toilet is required for each 20 employees or fraction thereof of each sex; urinals may be substituted for half of the units.
Exception: Sites with fewer than five (5) employees are not required to provide separate toilets for each sex; however, toilets must be lockable from the inside.
- c. Toilets must be kept clean and supplied with toilet paper.
- d. Toilets are not required for mobile crews if transportation to nearby toilets is available.
- e. One washing station must be provided for each 20 employees or fraction thereof.
- f. Washing stations must be clean and have an adequate supply of soap, water, and single use towels (or warm air blower).
- g. Washing station must have a sign indicating water is for washing.

- h. Wash stations are to be located outside and not attached to the toilet facility.
Exception: Where there are less than five (5) employees and only one toilet facility is required, the wash station may be located inside the toilet facility.
- i. An adequate supply of potable (drinkable) water must be provided at each jobsite. The employer shall take one or more of the following steps to ensure every employee has access to drinking water:
 - o Provide drinking fountains.
 - o Supply single-service cups.
 - o Supply sealed one-time use water containers.
 - o Ensure re-usable, closable containers are available for individual employee use.

RR. Tools and Equipment

General Requirements for Tools and Equipment Include:

- a. Tools must be kept clean and in good repair.
- b. Only trained or experienced employees may operate tools, machines, or equipment.
- c. Power-operated tools must be grounded or of the double-insulated type. If double-insulated types or tools are used, the equipment shall be distinctively marked.
- d. Power-operated tools should be kept out of wet locations.
Guards required by the SOs (Safety Orders) must not be removed or deactivated.

Control switches for powered hand tools are subject to the regulations noted below:

- a. The following tools must be equipped with a constant-contact (dead-man) on-off switch:
 - o Drills.
 - o Tappers.
 - o Fastener drivers.
 - o Grinders.
 - o Disc and belt sanders.
 - o Reciprocating saws.
 - o Circular saws.
 - o Chain saws.
 - o Concrete vibrators.
 - o Concrete breakers.
 - o Concrete trowels.
 - o Powered tampers.
 - o Jack hammers.
 - o Rock drills.
 - o Tools similar to those above.
- b. Hoisting or lowering electric tools by their cords is prohibited.
- c. Powder-actuated tools (PAT) shall be approved for their intended use, or have California approval numbers.
 - o Only trained workers holding a valid operator's card may use a POWDER-ACTUATED TOOL (PAT).
 - o Containers must be lockable and bear a label that says POWDER-ACTUATED TOOL on the outside. The storage container must be kept under lock and key.
 - o Warning signs that say POWDER-ACTUATED TOOLS IN USE must be conspicuously displayed within 50 feet of a PAT operation.
 - o Misfires and skipped power charges must be stored and disposed of properly.
- d. Circular power saws are regulated as follows:
 - o Portable Circular power saws:
 - Teeth on the upper half of the saw blade must be permanently guarded.

- Teeth on the lower half of the saw blade must be guarded with a telescopic or hinged guard.
 - Saw guards must not be blocked open to prevent guards from functioning.
- e. Miter (chop) saws are regulated as follows:
 - With the carriage in the full cut position, a guard must enclose the upper half of the blade and at least 50 percent of the arbor end.
 - With the carriage in the full retract (raised) position, lower blade teeth must be fully guarded, and the guard must extend at least three quarter ($\frac{3}{4}$)-inches beyond the teeth.
 - Employers shall instruct employees to keep hands and fingers outside the area below the blade until the blade has come to a complete stop.
- f. Radial arm (horizontal pull) saws are regulated as follows:
 - The upper half of the saw blade and arbor ends must be completely covered.
 - An anti-kickback device must be used during ripping operations.
 - Saws must return automatically to the tables back when released.
 - Saws must have a stop provided to prevent the saw blade from passing the front edge of the table.
- g. Table saws are regulated as follows:
 - A hood must cover the saw to at least the depth of the teeth.
 - The hood shall automatically adjust itself to the thickness of the material being cut at the point where the stock encounters the saw blade. The hood may be a fixed or manually adjusted hood or guard provided the space between the bottom of the guard and the material being cut does not exceed one quarter ($\frac{1}{4}$)-inch.
 - Table saws must be equipped with an anti-kickback device during ripping operations.
 - Push sticks or push blocks shall be provided at the work place in the several sizes and types suitable for the work to be done.

Note: The arbor speed of circular saw blades shall not exceed speeds recommended by the manufacturer.
- h. Chain saws are regulated as follows:
 - Chain saws must be equipped with a constant-pressure control that returns the saw to idling speed when released.
 - Chain saws must have a clutch adjusted to prevent the chain drive from engaging at idling speed.
- i. Pneumatic tools are regulated as follows:
 - Safety clips are required on pneumatic tools to prevent dies from being accidentally expelled from the barrel.
 - Pneumatic nailers and staplers must have a safety device that prevents the tool from operating when the muzzle is not in contact with the work surface.

Exception: Light-Duty nailers and staplers.
 - Pneumatic nailers and staplers must be disconnected from the air supply at the tool when performing any maintenance or repair on the tool, or clearing a jam.
 - The air hose of pneumatic nailers and staplers must be secured at roof level to provide ample but not excessive amounts of hose when an operator works on roofs sloped steeper than 7:12. . All pneumatic hoses exceeding one half ($\frac{1}{2}$)-inch inside diameter shall have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.
 - Jack hammer operators must wear personal protective equipment when required, including foot protection. Jack hammer operators must also use hearing protection when noise levels exceed allowable exposure levels.

- All portable pipe threading/cutting machines, portable power driven augers (earth drills), and portable power drives shall be permanently equipped with a momentary contact device.

SS. Traffic Control

Worksite traffic controls and placement of warning signs must conform to the requirements of the “California Manual on Uniform Traffic Control Devices for Streets and Highways, September 26, 2006”, published by the State Department of Transportation.

Additional means of traffic control, such as continuous patrol, detours, barricades, or other techniques for the safety of employees may be employed.

- a. Specifications for the size and design of signs, lights, and devices used for traffic control shall be as described in the "Manual", pursuant to the provisions of California Vehicle Code Section 21400, which is incorporated by this reference.
- b. Employees (on foot), such as grade-checkers, surveyors and others exposed to the hazard of vehicular traffic, shall wear high visibility safety apparel in accordance with the requirements of T8 CCR 1598 and 1599. 1590
Note: The warning garments such as vests, jackets, or shirts shall be manufactured in accordance with the requirements of the ANSI/ ISEA 107-2004, High Visibility Safety Apparel and Headwear. T8 CCR 1598(c)
- c. Flaggers (see Flaggers section in this guide) are required when the controls cited above are inadequate.
Note: The use of one flagger under specified circumstances is also permitted.
- d. The employer shall select the proper type (class) of high visibility safety apparel for a given occupational activity by consulting the Manual, apparel manufacturer, ANSI/ISEA 107-2004, Appendix B or the American Traffic Safety Services Association (ATSSA).

TT. Welding, Cutting and Other Hot Work

Each year numerous deaths from explosions, electrocutions, asphyxiation, falls, and crushing injuries are associated with hot work activities. These deaths from hot work often occur in confined or restricted spaces. In addition, numerous health hazards including heavy metal poisoning, lung cancer, metal fume fever, flash burns, and welders flash (burn to the eyes) are associated with exposure to fumes, gases, and ionizing and non-ionizing radiation formed or released during welding, cutting, brazing, and other hot work.

- a. Before workers begin any hot work, the following controls must be established:
 - No welding is permitted in an explosive environment.
 - A written “hot work” permit is required whenever a combustible environment may exist.
 - All combustible materials in the work area must be removed or shielded.
 - Suitable fire extinguishers, that meet NFPA and ANSI Standards, must be provided in the work area.
 - Welding blankets, curtains and pads shall be approved for their intended use.
 - Employers must instruct employees on hot work safety.
- b. Welders must be required to wear:
 - Non-flammable gloves with gauntlets.
 - Appropriate foot protection.
 - Aprons (leather) and shirts that have sleeves and collars.
 - Helmets, hoods, and face shields suitable for head protection.
 - Suitable eye protection.

- Respiratory protection (as required).
 - Screens must be provided to protect the eyes of non-welders from flash burns and ultraviolet light rays.
- c. Gas welding is regulated as follows:
 - Fuel gas and oxygen hoses must be distinguished from each other.
 - Couplings must not disconnect by means of a straight-pull motion.
 - Oil or grease must never come into contact with oxygen equipment.
 - Oxygen from a system without a pressure regulation device must never be used.
- d. Gas cylinders must be stored and used as follows:
 - Cylinders must be protected from all heat sources.
 - Cylinders containing oxygen, acetylene or fuel-gases shall not be taken into confined spaces.
 - Acetylene and Fuel gas cylinders, including but not limited to welding and cutting fuel gas cylinders, shall be stored and used with the valve end up.
Exception: Fuel gas cylinders containing fuel gas used to power industrial trucks regulated by Article 25 of the GISO.
 - All gas cylinders in service shall be securely held in substantial fixed or portable racks, or placed so they will not fall or be knocked over.
 - Cylinders must be handled in suitable cradles, with their valve caps installed; they must never be lifted by magnet, rope, or chain.
 - Cylinders must not be placed where they might form a part of any electric circuit.
 - Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of 20 feet or by a noncombustible barrier at least five (5) feet high having a fire-resistance rating of at least one half (½)-hour.
 - Valve stem wrenches must be left in place while cylinders are in use.
 - A fire extinguisher rated at least 10 BC must be kept near the operation.
 - Backflow and Flash Arrestor protection is required.
- e. Arc welding is regulated as follows:
 - Cables in poor condition must not be used; no cable may be spliced within ten (10) feet of the electrode holder.
 - The frames of arc welding and cutting machines must be grounded.
 - Electrodes and holders that are not in use shall be protected so they cannot make electrical contact with employees or conducting objects.
 - Defective equipment must not be used.

Ventilation regulations for welding, cutting, and brazing operations require that worker's exposure(s) to hazardous fumes, gases, and vapors be reduced below PELs.

- f. Outdoor operations:
 - Respirators are required for any operation involving beryllium, cadmium, lead, or mercury. For other operations and materials, respirators are not required when natural or mechanical ventilation is sufficient to prevent exposure to airborne contaminants in excess of the PELs.
- g. Indoor operations
 - Respirators shall be used when local exhaust or mechanical ventilation is not feasible or able to prevent exposures that exceed specified limits.

- In enclosed spaces supplied-air respirators shall be used when local exhaust ventilation is not an effective means for preventing potentially hazardous exposures.

DEFINITIONS / ACRONYMS

The following titles and acronyms may not reflect the actual titles and acronyms in use by all entities on this project and do not have any force or effect beyond their use in the Safety Standards. Due to such differences in nomenclature among CSU and Contractors, the following are used throughout the OCIP Safety Manual to establish the functional framework for the OCIP Safety Program.

DEFINITIONS

ACM. Asbestos Containing Material.

Alliant Insurance Services (Alliant). The party responsible for brokering and administering the OCIP Insurance Program.

Authorized Person. (In reference to an employee's assignment) Selected by the employer for that purpose.

Cal/OSHA. As used in the context of this Safety Manual, refers to state agency with jurisdiction over workplace occupational safety and health at the project site.

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.

CM. The person or business entity with which the CSU enters into the construction manager at risk construction agreement. Same as Contractor.

CSR. Contractor Safety Representative.

CSU. The Trustees of the California State University or a designated representative.

Contractor. The person or business entity with which the CSU enters into the construction agreement -- the prime contractor, the General Contractor, or the CM or Design-Builder.

Contractor's Safety Representative. (CSR) Contractor's on-site designated and authorized employee assigned the responsibility of implementing the Contractor's Safety Program and/or Injury and Illness Prevention Program, including ongoing identification and correction of hazards.

Design-Builder: The person or business entity with which the CSU enters into the design-build construction agreement. Same as Contractor.

Employee. Person employed by an Employer as defined by this section.

Employer. Firm or entity that has Employees working on-site and is enrolled in the OCIP program. The term Employer includes the Contractor and Subcontractors of all tiers.

IIPP. Employers in California are required to have an effective written Injury and Illness Prevention Program (IIPP). The benefits of an effective IIPP include improved workplace safety and health, better morale, increased productivity, and reduced costs of doing business.

MRO. Medical Review Officer

OCIP Safety Representatives. Representatives of CSU and employees of Alliant Insurance, or the insurance carrier that are members of the Owner Safety Committee and/or the Project Safety Team. Project safety inspections will occur periodically by these representatives.

Owner Controlled Insurance Program (OCIP). CSU's owner wrap-up insurance program which provides insurance coverage for eligible and enrolled owner's representatives, Contractor, and Subcontractors of any tier, working on any of the CSU OCIP project sites. The Owner identifies program participants.

Owner Safety Committee. This is the management team that represents the safety and health interests of the OCIP in the prevention of insurance losses on all CSU OCIP projects. The team includes CSU project management, CSU risk management, Alliant Insurance safety representatives and representatives from the insurance carrier.

PACM. Presumed Asbestos Containing Materials

Project Safety Team. Alliant Insurance, Insurance Carrier, General Contractor and CSU Project Management., Subcontractor representatives as appropriate. This team is responsible for monitoring and evaluating the projects safety, health, and environmental compliance.

Qualified Person. A person designated by the employer 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.

Site-Specific Safety Program (SSSP). The Employer's Site-Specific Safety Program prepared in accordance with the requirements of this document and the Contract.

Subcontractor. Firm or other entity awarded work by a Contractor on a particular construction project. Subcontractor as used herein shall apply to all tiers of subcontractors, as well as vendors and service providers performing work for the benefit of the Contractor. For the purposes of the Safety Standards, vendors, suppliers, and service providers on the project for the furtherance of the project are covered by this definition and are subject to the provisions of the Safety Standards even though they may not be enrolled in the OCIP.

Exception: Vendors, suppliers, and service providers, not enrolled in the OCIP are not expected to meet the SSR minimum safety qualifications (Unless Specified by Contractor) of:

- The minimum of (3) years of qualified project safety experience on similar type construction projects.
- Evidence of completing the 30 Hour Construction Outreach Training or equivalent with the past 3 yrs.

Subcontractor Safety Representative (SSR). Subcontractor Employee assigned the responsibility of implementing the Contractor's Injury and Illness Prevention Program, including ongoing identification and correction of hazards.

T8 CCR – Title 8, California Code of Regulations

ACRONYMS

ABC	Associated Building Contractors	MUTCD	Manual on Uniform Traffic Control Devices
AGC	Associated General Contractors of America	NEC	National Electrical Code
ANSI	American National Standards Institute	NFPA	National Fire Protection Association
ARM	Associate in Risk Management	NSC	National Safety Counsel
ASP	Associate Safety Professional	OCIP	Owner Controlled Insurance Program
ASSE	American Society of Safety Engineers	OSHA	Federal Occupational Safety and Health Administration
DHS	Department of Homeland Security	PPE	Personal Protective Equipment
CBP	Customs and Border Protection	PSP	Pro-Active Safety Process
CDL	Commercial Driver's License	RIMS	Risk and Insurance Management Society
CPR	Cardio Pulmonary Resuscitation	RPM	Revolutions per Minute
EPA	Environmental Protection Agency	SMS	Safety Management Systems
GVW	Gross Vehicle Weight	SSSP	Site-Specific Safety Program
HEPA	High Efficiency Particulate Air	TSA	Transportation Security Administration
JSA	Job Safety Analysis	T8	Title 8 of the California Code of Regulations
LEL	Lower Explosive Limit	UL	Underwriters' Laboratories
MSDS	Material Safety Data Sheet	USDOT	United States Department of Transportation

APPENDIX: FORMS

Project Safety Summary Report
Project Safety Observation Form
Orientation
Drug Testing Consent Form

OCIP Safety Representative Project Safety Summary Report			
Project Name:			
GC/CM:			
Date of Survey:		Time of Survey:	
OCIP Safety Observer:			
Project Safety Manager:			
Approx. # of Workers on site:		% Project Complete:	
Construction Activities Observed:			
★			
List of subcontractors on site:			
★		★	
Positive Observations (Best Practice):			Photo #
★			
★			
★			
★			
★			
Areas for Improvement:			Item #
★			
★			
★			
★			
★			
★			
Recommendations (see attached)			
★			
Losses incurred since last survey:			
★			
Future Services/Critical Evolutions Planned:			
★			

The California State University / Alliant Insurance Services
OCIP Safety Program

Project Name: _____

Safety Orientation & Drug Test Consent

Safety Orientation

Construction is a highly safety-sensitive occupation. The Project Team's objective is to emphasize that protecting people and property are of paramount importance to the success of this project. Safety is not to be sacrificed for production. Safety must be considered an integral part of the work process. You, as an employee on this project have a responsibility to prevent injuries to yourself and others. The following is a summary of safety priorities that you must be aware of before starting work on this project.

1. The use of hard hat, safety vest and safety glasses are required at all times while on the project site.
2. All incidents whether they involve injury or not (near miss), major accidents, jobsite emergencies, and injuries which result in first aid treatment must be reported immediately to your supervisor.
3. Every work operation should have a Pre-Task Plan and a Job Hazard Analysis to identify work operations, potential hazards, and control of hazards through the hazard analysis and task plan. Your supervisor and the project safety personnel are responsible for this analysis and planning. Employers are required to provide training for any Employee who might be exposed to a fall hazard prior to the exposure.
4. Good conduct on the project is essential for the common good of all employees and the efficient progress of the job. Undesirable conduct including, but not limited to the following will not be tolerated and could be grounds for dismissal from the project:
 - Unauthorized possession of any project property or material.
 - Possession, use of, or being under the influence of drugs, narcotics or other intoxicants on site.
 - Engaging in disorderly conduct.
 - Gambling, including sale of chances.
 - Fighting on project premises.
 - Unauthorized sleeping on the job during working hours.
 - Failure to wear or use required safety equipment.
 - Failure to observe safety, sanitary or medical rules and practices.
 - Illegal possession or use of narcotics or non-prescribed tranquilizers or pep pills on premises, or attempting to bring them on-site.
 - Possession or use of firearms, weapons, or explosives is expressly prohibited on the project site.
 - Defacing or damaging of equipment, tools, material or other property of the project or contractor.
 - Distributing or posting literature, photographs or other printed material, soliciting or attempting to solicit or collect funds without prior permission from Project Management. Sexual harassment of any type involving people on, or off, the project site.
5. The following employee safety requirements and policies are a part of the project safety plan. Your employer will provide further orientation on these items and show you where these procedures are posted.
 - Site Specific Safety and Health rules.
 - Permitting procedures, including work permits, excavation, confined space entry, lock-out, etc.
 - Hazard communications.
 - Emergency alarms and evacuation procedures.
 - An Emergency Action Plan is posted through the jobsite and contractor tool-box areas, and will be described to workers during the weekly safety meetings.

Drug and Alcohol Free Work Environment

Resulting from the safety-sensitive nature of construction, all employees shall be subject to this Substance Abuse Prevention Policy that includes drug screening and drug and alcohol testing as described below in order to maintain a safe, healthy and efficient work environment and to minimize absenteeism and tardiness.

Periodic oral swab drug screening will be used to determine if there is reasonable suspicion to proceed to a urine drug test. All (100% of) employees of the contractor and all subcontractors' employees on the project site on selected days, periodically during the course of the project, shall be required to submit to drug screening with oral swabs. Your employer will assemble a roll sheet of all people on-site the day of the drug screening. Workers on the roll sheet, and not present at the drug screening, shall be drug screened before their return to work.

A negative screening results indicate neither drugs nor alcohol were detected. The employee may remain on the jobsite and is subject to future screening. For all non-negative oral screening results (positive or inconclusive) the employee may elect to verify a non-conclusive oral with a follow up on site urinalysis, with immediate results. If the urinalysis testing is not conclusively negative, or if the employee elects to not have the on-site urinalyses testing, then the confirmation protocol listed in the Fundamental Requirements of the OCIP Drug Free Work Environment must be followed, and the employee may not return to the jobsite until a confirming lab based urine test, reviewed by a Medical Review Officer (MRO), has confirmed a negative result.

A urine test will be performed if there is reasonable cause to suspect that there is drug or alcohol use by an employee, and/or when an employee is involved in any type of incident requiring third party first aid, a clinical visit and/or resulting in property damage in excess of \$500 dollars.

Employees governed by this policy may possess a prescription medication in its original container and prescribed for current use of the person in possession by an authorized medical practitioner provided that the employee taking the prescription medicine performs no duties which may affect the employee's work ability (particularly their alertness and coordination), safety and the safety of others. Because marijuana remains illegal under Federal Law, medical marijuana cards or prescriptions permitting their use will not be allowed by workers on this project.

Employees that refuse to sign this orientation & consent form shall not be allowed to work on the project.

Contractor / Subcontractor (Employer) Name: _____			
Employee's Name: _____ Last, First		Date of Birth: _____ MM / DD / YYYY	
Local Home Address: _____ Address City, State, Zip			
Soc. Sec. #: _____ - _____ - _____		Position / Craft: _____	
I hereby consent and agree to give specimens of my saliva and/or urine to the facility designated by my employer as described above. These specimens shall be used to detect the presence of drugs and / or alcohol in my biological system. I further consent and agree that the results of the screening and tests may be furnished to my employer by the testing facility, and my employer may forward the test results to the general contractor, and any Union hiring hall which may have referred me.			
My signature below acknowledges that I have read, understood, and agree to the content in this safety orientation, and consent to drug screening and testing as described herein.			
_____	_____	_____	_____
Employee Signature	Date	Witness Signature	Date

Original to Employer
Copy to Employee