STRUCTURAL

COMPANY SAFETY PLAN

INJURY ILLNESS PREVENTION PROGRAM

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Note on the TOC- Sections maked with an asterics (*) have an addendum specifically for use while working in Washington

ACCIDENTS AND INJURIES DON'T JUST HAPPEN --THEY ARE CAUSED

At TGC Structural, (TGCS) we expect our employees to work in a safe manner. It is a recognized fact and a shared philosophy of TGCS Management that all accidents can be prevented by eliminating unsafe acts and unsafe conditions. We have a vital interest in accident, injury and loss prevention; accidents and injuries cost our organization not only in dollars but also in, time, damaged equipment and materials, as well as the reputation of the company. But most importantly they cost us our most valuable resource, our employees. These costs not only affect the job where the accident occurred at, but also our ability to successfully bid new jobs.

TGCS Management will provide all employees with training on safe operating procedures for their jobs. It is extremely important that you understand **HOW** each task is to be done in a safe manner… and if you don't know, **STOP** and **ASK** your supervisor before you begin work. Do not take shortcuts in procedures; this does not save time. No job is so important that we cannot take time to do it in a safe manner. Additionally, as our first line of defense in accident and injury prevention, if you observe an unsafe procedure or have ideas on safer procedures, please let a member of management know.

Every employee will be expected to know and understand his or her role and responsibilities connected with TGCS's Injury Illness Prevention Program (IIPP) by following these policies and procedures and the specialized safety training you will receive, you will be doing your part in sharing with us this important responsibility – **THE PREVENTION OF ACCIDENTS AND INJURIES**. A lack of understanding your role and responsibilities or a lack of following the policies and procedures or an indifference to either could result in an injury to yourself or others. Remember **ACCIDENTS AND INJURIES DON'T JUST HAPPEN -- THEY ARE CAUSED**.

Nate Gerding, President

OSHA and OR-OSHA Jurisdictions

Every employee of TGC Structural, (TGCS) is a member of our team and as a member of the team you have your roles and responsibilities when it comes to our Injury Illness Prevention Program. Each team member also has a responsibility to hold the other team members accountable for their actions or inactions as it relates to this program. Below is a list of some of those responsibilities.

Executive Officers

- Responsible and accountable for the safety of everyone on and/or around the jobsites
- Dedicate resources to the Injury Illness Prevention Program
- Assign responsibilities, authority and accountability
- Take appropriate actions to support the Injury Illness Prevention Program
- Conduct periodic safety performance reviews

Project Managers

- Responsible and accountable for the safety of everyone on and/or around the jobsites
- Coordinate pre-planning meetings for project safety
- Dedicate project resources to safety
- Periodic safety performance reviews of the projects, subcontractors and/or superintendents
- Take progressive disciplinary action when appropriate

Safety Department

- Responsible and accountable for the safety of everyone on and/or around the jobsites
- Act as a resource to the company for safety issues
- Develop and maintain the Injury Illness Prevention Program
- Develop and maintain the safety training program
- Assist in project safety planning
- Conduct safety inspections on the jobsites
- Prepare project and company safety analysis

Superintendents

- Responsible and accountable for the safety of everyone on and/or around the jobsites
- Responsible and accountable for project safety
- Schedule and coordinate pre-planning meeting for the project
- Monitor safety performance on the project
- Identify and correct safety hazards on the project
- Take progressive disciplinary action when appropriate
- Coordinate project safety meetings
- Conduct new employee and site specific safety orientations
- Conduct and/or attend weekly toolbox safety meetings
- Provide safety training to the employees
- Weekly Jobsite Safety Inspections. (Form D2) ○ The Superintendent shall ensure that the weekly safety inspection is performed by a Competent

  Person or perform the inspection himself ○ The Competent Person shall be agreed to by the Superintendent and Safety Department ○ The Competent Person must have at least

an OSHA 10 Hr. card or similar training o The Superintendent must sign the weekly safety inspection form

Project Safety Officer (PSO) (if applicable, if no PSO is present Superintendent has these responsibilities)

- Done with support of the Superintendent
- Responsible and accountable for the safety of everyone on and/or around the jobsites
- Conduct new employee and site specific safety orientations
- Monitor individual employee and subcontractor employee safe work practices
- Identify and correct hazards
- Investigate every near miss, accident, injury and incident
- Assist in project safety planning
- Track and monitor subcontractor safety
- Provide safety training
- Perform a weekly safety inspection of the jobsite

Foremen

- Responsible and accountable for the safety of everyone on and/or around the jobsites
- Monitor individual employees safe work practices
- Conduct weekly tool box safety meetings (If not done by the Superintendent)
- Identify and correct safety hazards
- Assist in investigating accidents and near misses
- Developing pre-task plans and reviewing them with his crews

Employees

- Responsible and accountable for the safety of everyone on and/or around the jobsites
- Attend new hire and site specific orientations and complete orientation checklist
- Attend weekly, daily and special safety meetings
- Follow company and project safety policies at all times
- Use and take care of the safety equipment provided for them
- **DO NOT** proceed with work if unsafe conditions exist
- Report all unsafe conditions immediately
- Participate in the Injury Illness Prevention Program
- Work in a safe manner at all times – **NO SHORTCUTS!!**

Safety Committee

- Responsible for recommending ways to improve safety and health in the workplace
- Help identify employee safety training needs and develop or provide recommendations for improvement
- Review all accident, injury incident and near miss reports

Project Teams

 Conduct a Monthly Safety Committee Meeting on all jobsites with all available employees
They will discuss all accident investigations, injuries and near miss investigations

DOSH Jurisdiction

In addition to the above program, projects in the Washington DOSH Jurisdiction shall comply with the following.

Superintendents

- Weekly Jobsite Safety Inspections. (Form D2)
  - The Superintendent shall ensure that the weekly safety inspection is performed by a member of the management staff and an employee representative select by the employees
  - The inspection will be documented using Form D2 and will retain such documentation until project is complete

The following is a list of safe work practices that all TGC Structural (TGCS) employees must follow at all times.

Code of Safe Work Practices

- Report to work in good physical shape and alert mental condition
- The use or possession of alcohol or illegal drugs on the jobsite is prohibited
    - Reporting to work under the influence of alcohol or illegal drugs is prohibited
    - The use of certain prescription or over the counter medications may impair your performance on the job
    - Please notify your supervisor when using prescription or over the counter medications
- Obey all posted rules, instructions, cautions or warning signs
- Obey all traffic laws on and off the jobsite
- Understand your work assignment and make certain you are fully qualified for the job
- No firearms, knifes (with blades longer than 5", switchblades, etc.) mace or weapons of any type are allowed on the projects
- Learn and follow the specific safety regulations which apply to your job
    - If you don't know or understand the regulations that apply to you job ask your supervisor
- Housekeeping is a critical part of site safety
    - Clean your work area as you go
    - Dispose of the debris in a proper manner
- Hard hats must be worn at all times on the jobsite without exception until superintendent determines it is safety not to wear hard hats
- Proper work clothing and work shoes are necessary for your personal safety
    - Specifically: Shirts must be work at all times; no working shorts, cutoffs, tank tops, thongs, sandals or "tennis" type shoes until superintendent determines it is safe to wear tennis shoes
- Report accidents immediately to your foreman and follow the instructions given to you when you are referred for medical treatment for any injury
    - Injuries minor or not, must be reported that same day
- Follow instructions given by your supervisors - if you don't understand, please ask questions - know exactly what you are doing at all times - work safely and look out for your fellow workers
- No horseplay, fighting, gambling, or practical joking will be tolerated to any degree
    - Be serious with your work and your safety
- Safety equipment will be furnished as the job requires
    - Use this equipment at all times and use it properly
    - Goggles or a face shield with safety glasses must be used when grinding, chipping, using powder actuated tools, hot saws, open air hoses and blasting
        - They won't protect you unless you use them
    - Safety harnesses and life lines are required for some operations - when guardrails are impractical or when working above or outside of guardrails - use the harness properly and inspect before each use
- Moving machinery and equipment must not be serviced while in operation - stay clear of moving belts, pulleys, gear, and rollers at all times
    - Operate and/or service only equipment that you are qualified to do so
    - Fuel operated equipment must be kept clean and fuel stored in designated areas
- Material handling and lifting must be done properly and with careful attention to the job
    - Use proper tools, methods, and gloves when hoisting equipment is being used
- Ladders and scaffolding, working platforms and walkways must be properly maintained and used in a safe accepted manner
    - Access areas and walkways must be kept clear of material and debris
    - Always face the ladder – Do not move rolling scaffolding with people onboard

- Electrical tools and equipment must be used properly - all tools require a ground wire (third wire) circuit on 110 volts and (fourth wire) on 220 volts
    - No tools plugs, connectors, outlet boxes or lines may be altered
- Sanitary facilities are maintained on the job
    - Toilets must be used and any violators will be terminated
- Lunch trash should be placed in debris cans or boxes.
- Fire protection is a vital part of safety
    - Know where the extinguishers are and how to use them
    - More importantly know which fires you should fight and which ones you should not
- When lifting heavy objects, use the large muscles of the leg instead of the smaller muscles of the back
- Do not throw materials, tools or other objects from buildings or structures until proper precautions are taken to protect others from falling object hazards
- Employees shall not enter confined spaces (manholes, underground vaults, chambers, silos, etc.) until all conditions of the "Confined Space Entry Procedures" have been complied with
- Gasoline shall not be used for cleaning purposes at any time
- Air hoses should not be disconnected at compressors until the hose line has been bled
- Use hand tools for the purpose they were designed
- Portable electric tools must be lifted or lowered by means of a rope
    - Do not use the cord to lift or lower
- All unsafe conditions or practices must be reported to your foreman at once
- Disregarding these Safe Work Practices or other safety instructions could be cause for termination of employment

OSHA and OR-OSHA Jurisdictions

TGC Structural (TGCS) and all their subcontractors shall have at least one person certified in First Aid and CPR at the job site at all times. Subcontractors are solely responsible to ensure the required and proper training of their employees. Only properly trained personnel shall administer First Aid.

TGCS and all their subcontractors shall provide a first aid kit on the jobsite based on their crew size. The TGCS and subcontractor site superintendents are responsible for ensuring that the kit is properly stocked and maintained, and inspected weekly. This first aid kit will also contain equipment and materials to be compliant with Blood Borne Pathogen regulations, including mouth-to-mouth resuscitation devices, bleach, and latex disposable gloves.

If an AED is available in the field office only properly trained personnel shall use the AED at the jobsite.

DOSH Jurisdiction

In addition to the above program, projects in the Washington DOSH Jurisdiction shall comply with the following.

- All crew leaders, supervisors or persons in direct charge of one or more employees must have a valid first-aid certificate
    - For the purposes of this section, a crew means a group of two or more employees working at any worksite
- The requirement that all crew leaders, supervisors or person in direct charge of one or more employees applies even if other first-aid trained person(s) are available
- In emergencies, crew leaders will be permitted to work up to thirty days without having the required certificate, providing an employee in the crew or another crew leader in the immediate work area has the necessary certificate
- An adequate number of first aid kits and supplies shall be immediately available
- First aid kits and supplies should reflect the hazards of the work environment
- All transport vehicles must have a first aid kit
- When practical, a poster must be fastened and maintained either on or in the cover of each first-aid kit and at or near all phones plainly stating the worksite address or location, and the phone numbers of emergency medical responders for the worksite
- Employers with fifty or more employees at one project must establish a first-aid station in accordance with DOSH requirements

The following are required to be posted at all jobsites. Postings are available from the Corvallis Office.

ALL SITES

- Code of Safe Work Practices (A3)
- Visitor's Hold Harmless Agreement (D3)
- Emergency Response Plan (A15.1)
- Site Specific Fire Prevention Program (C11.2)
- Listing of Hazardous Chemical on Site (A7.1)
- Listing of HAZ-COM Trained Personnel (A7.2)
- Listing of Ladder Trained Personnel (C16.2)
- Listing of Excavation Trained Personnel (C9.2)
- Listing of Equipment Trained Personnel (From Office)
- Color Code for Quarterly Cord Testing (C7.1)
- Site Specific Fall Protection Plan (C10.1)
- Site Specific Fire Prevention Program (C11.2)
- Safety Committee Meeting Minutes
- Sexual Harassment Policy (Office)
- EEO Policy (Office)
- Military Family Leave (Office)

OREGON

- Federal Minimum Wage
- Federal EEO is the Law
- Federal Family & Medical Leave
- Employee Polygraph Protection Act
- State of Oregon Construction Contractors Board License
- Worker's Comp Notice of Compliance
- OROSHA "It's the Law"
- Oregon Family Leave Act
- Oregon Minimum Wage
- OSHA 300 Log (February 1st to April 30th)
- BOLI Prevailing wage rates and benefits (On Prevailing wage jobs)
- USERRA Poster
- Oregon's Smoke Free Workplace Law

WASHINGTON

- Maternity Leave
- L&I Rights as Non-Agriculture Worker
- L&I Rights as Agriculture Worker
- Washington Minimum Wage
- Unemployment Benefits
- Job Safety & Health Protection
- L&I Notice to Employees
- Certificate of Coverage
- OSHA 300 Log (February 1st to April 30th)
- BOLI Prevailing wage rates and benefits (On Prevailing wage jobs)
- Notice to Employees – If a job Injury Occurs

- Job Safety and Health Law
- Your Rights as a Worker

Weekly Safety Meeting Sign In Form

☐ **TGC Structural Weekly Safety Meeting** ☐ **Jobsite Weekly All Hands Meeting**

Jobsite Name: _____

Date of Meeting: _____ **Time of Meeting:** _____

Topics Discussed:
☐ Required PPE onsite ☐ Job Specific Safety Requirements
☐ Up Coming Task and Conditions Onsite ☐ Any Accidents/Incidents/Near Misses
☐ Employee/Sub Safety Concerns or Questions ☐ Toolbox Topic ☐ Others

_____

_____

SDS Reviewed:

_____ _____

_____ _____

_____ _____

_____ _____

Superintendent's Signature: _____

Meeting Attended By:

Company:	Print Name:	Signature:

Company:	Print Name:	Signature:

Workplace Labeling

Ensure that each container of hazardous chemicals in the work place is labeled, tagged or marked with either:

- The Five Label Elements or
- The product identifier and words, pictures, symbols or a combination of, which will provide at least general information regarding the hazards of the chemical and which in conjunction with other information immediately available to employees, will provide employees with the specific information regarding the hazards of the chemical
    - Signal word(s), hazard statement(s) and pictogram(s) must be located together on the label

Secondary Container Labeling

- Secondary container labeling must be:
    - In English
    - On all secondary containers at all times
- Label are not required on secondary containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer
- The foreman will ensure that all secondary containers meet this standard
- If there is any question as to the safe handling of any material covered by this program, do not handle until the safe handling procedures have been reviewed
- Please contact the Foreman, the Project Superintendent, or the Safety Department for help labeling

Safety Data Sheets (SDS)

- All SDS's must be in English and must include at least the following section numbers and headings, and associated information under each heading, in the order listed:
    - Section 1, Identification
    - Section 2, Hazard(s) identification
    - Section 3, Composition/information on ingredients
    - Section 4, First-aid measures
    - Section 5, Fire-fighting measures
    - Section 6, Accidental release measures
    - Section 7, Handling and storage
    - Section 8, Exposure controls/personal protection
    - Section 9, Physical and chemical properties
    - Section 10, Stability and reactivity
    - Section 11, Toxicological information
    - Section 12, Ecological information
    - Section 13, Disposal considerations
    - Section 14, Transport information
    - Section 15, Regulatory information
    - Section 16, Other information, including date of preparation or last revision
- The chemical manufacturer must provide Safety Data Sheets which include the five label elements for each hazard class associated hazard category in the product
- Electronic access and other alternatives to maintaining paper copies of the SDS's are permitted as long as no barriers to immediate employee access are created by such options

- Copies of the SDS's for the hazardous chemicals to which company employees or subcontractors or other's employees may be exposed will be kept at the appropriate work site with the written Hazard Communication Program
- SDS's will be available to all employees in their work area for review during each work shift
- If the SDS's are not available or new chemicals in use do not have SDS's immediately contact the Project Superintendent.
- All SDS's will be readily available during non-emergency situations and immediately available in emergency situations
- Where employees must travel between work places during a work shift, the SDS's can be located at the Corporate Office.
- Please call company Safety Department in any emergency pertaining to hazardous chemicals

Employee Training And Information

- Employees will receive effective information and training on:
    - An overview of the requirements in OSHA's hazard communication rules
    - Hazardous chemicals in the work place
    - Location of the hazardous communication program and the SDS's
    - How to read, understand and use the information on labels and in safety data sheets
    - Physical and health hazards of the chemicals in their work areas
    - Methods used to detect the presence or release of hazardous chemicals in the work area
    - Steps we have taken to prevent or reduce exposure to these chemicals
    - How employees can protect themselves from exposure to these hazardous chemicals through use of engineering controls/work practices and personal protective equipment
    - An explanation of any special labeling present in the workplace
    - Emergency procedures to follow if an employee is exposed to these chemicals
- Employees will receive training at the time of their initial assignment, and whenever a new chemical hazard the employees have not previously been trained about is introduced
- Every new employee will receive an overview of the Hazardous Communication requirements during new employee orientation
- After attending the training class, each employee will be required to sign a form to verify that they have attended the training, received the written material, and understand the Company's policies on Hazard Communications.
- Prior to a new and different chemical being introduced into the work site, each employee involved in the use of the material will be given the information outlined above
- Training will be tracked on the Required Safety Training List A7.2

List Of Hazardous Chemicals

- A list of all hazardous chemicals onsite will be posted on safety bulletin board
- A list of hazardous chemicals onsite will be kept current at all times
- As each project will have a different list of hazardous chemicals, the list for the project will be accessible on site only

Hazardous Non-Routine Tasks

- Periodically, employees may perform hazardous non-routine tasks
- Before starting work on such a project, any affected employee will be given specific instruction as to the hazards involved by the foreman or superintendent

Weekly Safety Meeting
Superintendents will hold weekly Tool Box Safety Meetings and require all TGC Structural (TGCS) jobsite employees to attend. You may use the topics sent to you from the office, www.toolboxtalk.com or other topics which are site specific. Any hazards noted at Safety Meeting must be investigated immediately and corrective action must be taken to preclude potential hazards. See Form A6.1- Weekly Safety Meeting Sign In Form at the end of this section for documentation of meetings.

Subcontractor Safety Meeting
When working as the General Contractor, superintendents will hold weekly safety meetings with subcontractors at the foreman's meeting. You should discuss site specific concerns, review the superintendent's safety inspection report and review the Safety Department safety inspection report if your jobsite has been visited. Topics discussed shall be documented as part of the meeting minutes.

Jobsite Weekly All Hands Safety Meeting
When working as the General Contractor, superintendents will hold weekly jobsite all hands safety meetings with all workers on site. If this meeting is held and TGCS employees attend, the Weekly Safety Meeting listed above is not required. At a minimum the following topic should be discussed:

- Required PPE
- Job Specific Safety Requirements
- Upcoming tasks and conditions onsite
- Safety concerns and questions
- Any Accidents/Incidents/Near Misses

Safety Meeting Sign in Form
The attendance to the Weekly Safety Meeting and the Jobsite Weekly All Hands Safety Meeting will be documented by use of Form A6.1 - Weekly Safety Meeting Sign in Form located at the end of this section. The original meeting documentation should be kept onsite in the job file and a copy sent to the Corvallis Office.

Written Hazard Communication Program

The OSHA Hazard Communication Standard, require an employer to provide information to its employees as to the hazardous chemicals/agents that they may be exposed to in the work place. Therefore, the following written Hazard Communication Program has been established for TGC Structural (TGCS).

Definitions

Hazard Class – describes the nature of the physical or health hazard(s) e.g. flammable solid, carcinogen, oral toxicity.

Hazard Statement – a statement assigned to a hazard class and category that describes the nature of the hazard(s).

Immediate Use – means that the hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

Pictogram – a symbol plus other graphic elements that convey specific information about a hazard.

Precautionary Statement – a phrase that describes recommended measures to minimize or prevent adverse effects resulting from exposure to the hazardous chemical.

Product Identifier – unique name or number used for a hazardous chemical on a label by which the user can identify the chemical.

Signal Word – a word used to indicate the relative level of severity of the hazard related to the chemical you are using. They are "Danger" which is used for more severe hazard and "Warning" which is used for less severe hazard.

Container Labeling

All containers of hazardous chemicals will be labeled to ensure that employees have a means to identify the hazards involved.

- Each container of hazardous chemicals coming into the work place must have the following on the label: (5 Label Elements)
    - Product Identifier(s)
    - Signal Word(s)
    - Hazard Statement(s)
    - Pictograms(s)
    - Precautionary Statement(s)
    - Name, Address and Telephone Number of the chemical manufacturer
- The foreman will verify that all hazardous chemical containers received will:
    - Arrive with the SDS or verify the SDS is already onsite
    - Be clearly labeled as per indicated above
    - Ensure the five label elements are legible.
- It is company policy that no incoming container will be released for use until the above data is verified
- Do not deface original labels on incoming containers.
- The Employee is responsible to know how to identify the hazards of a material from the label and to ensure it is handled in a safe manner

- This information will include:
  - The specific chemical hazards involved
  - Protective / safety measures employees are to take
  - Measures taken to lessen the hazards, including: ventilation, personal protective equipment, hygiene practices, and other emergency procedures

Chemicals In Pipes

- Work activities are often performed by employees in areas where chemicals are transferred through pipes
- Prior to starting work in these areas, the employee shall contact the foreman for information regarding:
  - The chemical in the pipes, or the insulation material on the pipe
  - The potential chemical hazards
  - The safety precautions which should be taken

Jobsite Procedures/Responsibilities

- The TGCS Superintendent will:
  - Verify the chemicals are added to the Haz-Com Inventory List
  - Make several copies of the Haz-Com Program Inventory List (A7.1) and distribute them to all subcontractors onsite
  - Require subcontractors submit their list to the Superintendent
  - Require the subcontractors keep their lists updated
  - Post all the lists on the safety bulletin board or where the SDS's are kept
  - Verify all TGCS employees are trained in this program

PICTOGRAMS

Hazard Symbols (to be used in pictograms for substances of the particular class)		
		
FLAME OVER CIRCLE—USED FOR THESE CLASSES : ▪ Oxidizers	**FLAME—USED FOR THESE CLASSES:** ▪ Flammables ▪ Self Reactives ▪ Pyrophorics ▪ Self-Heating ▪ Emits Flammable Gas ▪ Organic Peroxides	**EXPLODING BOMB—USED FOR THESE CLASSES:** ▪ Explosives ▪ Self Reactives ▪ Organic Peroxides
		
SKULL & CROSSBONES—USED FOR THESE CLASSES: ▪ Acute toxicity (severe)	**CORROSION—USED FOR THESE CLASSES:** ▪ Corrosives	**GAS CYLINDER—USED FOR THESE CLASSES:** ▪ Gases Under Pressure
		
HEALTH HAZARD—USED FOR THESE CLASSES: ▪ Carcinogen ▪ Respiratory Sensitizer ▪ Reproductive Toxicity ▪ Target Organ Toxicity ▪ Mutagenicity ▪ Aspiration Toxicity	**ENVIRONMENTAL HAZARD—USED FOR THESE CLASSES:** ▪ Environmental Toxicity	**EXCLAMATION MARK—USED FOR THESE CLASSES:** ▪ Irritant ▪ Dermal Sensitizer ▪ Acute toxicity (harmful) ▪ Narcotic Effects ▪ Respiratory Tract Irritation

Below is the list of Hazardous Chemicals in use onsite.

Company Name: _____

Superintendent: _____

Chemical	**Manufacturer**

Below is a list of TGC Structural Employees who have been trained on the Haz-Com program, Labeling Elements, SDS format and on the chemicals they will use onsite.

Employee Name	Employee Signature	Date:	Trainer Initials

OSHA and OR-OSHA Jurisdictions

This policy will apply to all work performed by TGC Structural (TGCS) Project employees, contractors and tool vendors including, but not limited to, the following activities: construction, installation, demolition, remodeling, relocation, refurbishment, testing, and servicing or maintenance of equipment or machines.

Procedures

- Work areas must be kept clear and free of obstructions by material/debris as follows:
  - Clean-as-you-go practices are required
  - Do not wait until all work has been completed before cleaning up
    - Break the work down into smaller tasks and clean the area after each task is completed
  - Cleanup must be accomplished by proper means in order to reduce airborne dust (Clean Sweep)
  - Materials will not be stored in a manner that will block, restrict, impede or prevent access to an egress path or emergency equipment, such as fire extinguishers, emergency eyewash or shower, emergency shutoff buttons or emergency disconnect devices
  - Stairways shall not be used as storage areas
  - Work that may temporarily block emergency exits, safety showers, elevators, corridors, and hallways will require prior superintendent approval
- Material Storage:
  - Materials stored in the vicinity of the area where work is performed should be limited to only those materials that will be used in the same shift
  - Any material stored in a work area longer than 24 hours must be approved by the superintendent
  - Materials should be stacked in a safe and orderly manner
  - Store all items neatly in cabinets or on shelves, where feasible
  - Gang boxes and toolboxes should not have materials stored on top of them
  - If more storage area is needed, contact the superintendent
- Chemical Storage:
  - The user of the chemical must provide the superintendent a Material Safety Data Sheet prior to bringing the substance on site
  - All chemicals and equipment containing chemicals must be stored in approved containers and/or areas
  - Contractors are responsible for removing all unused chemicals from the project site at the completion of their contract
  - All chemical containers must be properly labeled
  - Chemical/gas cylinders (welding, purging, leak detection cylinders, etc.) must be stored in an upright position and secured at all times
  - All dedicated chemical storage areas must have safety data sheet (SDS) available at the storage location
  - If you are unsure of appropriate storage areas, contact the superintendent for direction
- Material/Waste Disposal:
  - All hazardous waste must be stored and disposed of in accordance with Federal, State, and Local regulations
  - All hazardous waste must be properly labeled
  - Hazardous waste materials must be discarded into proper disposal containers
  - Non-hazardous waste must be disposed of into appropriate recycle or disposal containers
- Daily Cleanup:
  - Contractors are solely responsible for the cleanup of their immediate work areas on a daily basis

- Contractors may be required to participate in a general cleanup effort to include stairs, walkways and loading areas, on a weekly basis, commonly known as "Tidy Friday"
- "Tidy Friday" participation guidelines:

Crew Members	Cleaners
1-9	1 every Friday
10-20	2 every Friday
21-30	3 every Friday
30+	4 every Friday

- "Tidy Friday" can be changed to a daily basis as the need may arise as directed by the superintendent
- It is not the intent to have "Tidy Fridays" become the norm. It is intended to be a motivator for each subcontractor to perform clean up on a daily basis
- If a subcontractor fails to complete housekeeping tasks, the superintendent will assign those duties to another subcontractor and back-charge the failing subcontractor for all expenses incurred
- It is the goal of TGCS to provide and maintain a clean worksite during construction
- Early and often implementation of procedures described above will achieve this goal

DOSH Jurisdiction

In addition to the above program, projects in the Washington DOSH Jurisdiction shall comply with the following.

- Hoses and electrical conductors across aisles or passageways shall be covered or suspended overhead so that there is no tripping hazard
- Storage of material shall not create a hazard
  - Bags, containers, bundles, construction materials and other equipment shall be stored in tiers, stacked, blocked or interlocked
  - They shall be limited in height so that they are stable and secure against falling, sliding, or collapse
- Working and storage areas shall be kept free from accumulation of materials that pose hazards of tripping, fire, explosion, or pest harborage
- Vegetation control shall be exercised
- All lunchrooms, washrooms and restrooms shall be kept in a clean and sanitary condition
- Garbage cans in lunchrooms and restrooms shall be equipped with fitted covers and the contents disposed of daily
- Containers shall be provided for the collection and separation of waste, trash, oily or used rags, and other refuse
- Containers used for garbage and other oily, flammable or hazardous wastes, such as caustics, acids, harmful dusts or similar materials shall be equipped with covers
- Common garbage and other waste shall be disposed of at frequent and regular intervals
- Chemical agents or substances which might react to create a hazardous condition shall be stored and disposed of separately

Housekeeping/Safety Violation Notice

Jobsite: _____

Contractor: _____

Location: _____

Date: _____ **Time:** _____

TGC Structural's responsibility is to provide a safe working environment to our employees, subcontractors, and vendors. We find your company has the following condition:

_____

_____

_____

_____

_____

_____

_____

PLEASE TAKE CARE OF THIS PROBLEM IMMEDIATELY!

TGC Structural's Contract, Section ????, States "If the Subcontractor fails to immediately commence compliance with such safety duties or commence clean-up duties within 24 hours after receipt from the Contractor of written notice of non-compliance, the Contractor may implement such safety or cleanup measures and deduct cost thereof from amounts due to the Subcontractor".

Superintendent: _____

Subcontractor: _____

Sub Foreman: _____

Compliance Date: _____ **Time:** _____

A copy of this notice will be sent to the Subcontractor's main office, and a copy will be sent to TGC Structural's main office.

The intent of this section to ensure all injuries and incidents are reported, and then investigated to determine the root cause and corrective actions implemented to prevent recurrence. Any injury which requires medical attention is considered reportable. All accidents/incidents/near misses shall be reported.

Superintendents Responsibilities

- Ensure the safety and security of the individuals who were injured or involved, other people on site, the public, and the project
- Secure the accident scene
  - Disturb only as necessary for rescue of injured workers or preventing further injury or damage
- Contact the main office immediately
- In case of fatality or catastrophic contact Nate Gerding
- Conduct an accident/incident investigation
- Complete the Incident Report Form at the end of this section and submit to the Safety Department within 2 hours of the incident.
- Complete the A9.2 Grab & Go Incident Report and Investigation Form at the end of this section and submit to the Safety Department within 48 hours of the incident
- Take photos of the accident scene and the surrounding area immediately
  - A digital camera can be used for this purpose
  - Use the date stamp function if the camera has it
  - If the camera does not document the day and time the pictures were taken, you must then document in some way the date the pictures were taken
- Have the employee(s) fill out worker portion of A9.3 801Form located at the end of this section and return form to the office within 24 hours
- Superintendent to fill out Employer section of A9.3 801Form.
- Have the employee(s) and any others involved with the accident/incident or are in the area of the accident/incident, complete a witness statement.
- Have employee(s) involved with the accident/incident transported for drug/alcohol testing
- Complete the root cause analysis form
- Report **all** accidents/incidents/near misses

Safety Department Responsibilities

- Ensure the accident scene is secured and unmodified until the investigations are complete
- Assist the project team in the accident/incident investigation
- Collect the facts about what happened
- Develop the sequence of events
- In case of a fatality or catastrophe the Safety Department will lead the investigation
- Conduct or cause to have conducted an incident review meeting with, project team, any subcontractors involved, the involved party and the Vice President (VP) in attendance
- In case the VP is unavailable any one of the upper management group can fill in
- In case of a fatality or catastrophe, the Safety Department will notify **OR-OSHA** within 8 hours after occurrence or employer knowledge
  - A catastrophe is defined as an accident in which two or more employees are fatally injured, or three or more employees are admitted to a hospital or an equivalent medical facility
- In case of an overnight hospitalization of an injured employee, the Safety Department will notify OR-OSHA within 24 hours after occurrence or employer knowledge
- In **Washington**, the Safety Department will notify the nearest office of the **DOSH** office by phone within 8 hours of the work related incident or accident as listed below:
  - In case of a fatality
  - In case of a probable fatality

- In case of 2 or more employees are admitted to the hospital
  - See WAC296-800-32005 for further requirements

Safety Committee Responsibilities

- Evaluate the root cause analysis form for all accidents to determine the causes
  - Analyze the injury event to identify and describe the direct cause of injury
  - Analyze events occurring just prior to the injury event to identify those conditions and behaviors that caused the injury (primary surface causes) for the accident
  - Analyze the conditions and behaviors to determine other specific conditions and behaviors (contributing surface causes) that contributed to the accident
  - Analyze each contributing condition and behavior to determine if weaknesses in carrying out safety policies, programs, plan, processes, procedures and practices (inadequate implementation) exist
  - Determine implementation flaws to determine the underlying design weaknesses
- Determine possible disciplinary actions.
- Recommend corrective actions and improvements
  - Engineering Controls- Remove or reduce the hazard
  - Management Controls- Remove or reduce the exposure
  - Personal Protective Equipment- Put up a barrier
- Implement the solution
- Share or cause to share the findings with all projects teams.
- Follow up to verify solution is working

Forms for Each Incident

- Non-Injury, Vehicle, Property Damage and Near Miss Incidents
  - Form A9.1 Incident Report Form (Submitted within 2 hours of the incident)
  - Form A9.4 Root Cause Analysis Form
  - Any photos of the scene
  - Other relevant documentation (Pre-task plans, fall protection plans, forklift inspection sheets, etc)
- Injury Incident (Non-Employee)
  - Form A9.1 Incident Report Form (Submitted within 2 hours of the incident)
  - Form A9.2 Grab and Go Incident report and Investigation Form.
  - Form A9.4 Root Cause Analysis Form
  - Any photos of the scene
  - Other relevant documentation (Pre-task plans, fall protection plans, forklift inspection sheets, etc)
- Injury Incident (Employee)
  - Form A9.1 Incident Report Form (Submitted within 2 hours of the incident)
  - Form A9.2 Grab and Go Incident report and Investigation Form.
  - Form A9.3 801 Form
  - Form A9.4 Root Cause Analysis Form
  - Form A9.5 Work Release and Physical Capacity Form (This can be substituted for doctors form)
  - Any photos of the scene
  - Other relevant documentation (Pre-task plans, fall protection plans, forklift inspection sheets, etc)

To be completed and submitted within 2 hours by Supervisor

General Information

Date: _____ **Project Name:** _____

Project Address: _

Superintendent: _ **Phone:** _____ **Cell:** _____

PM: _ **Phone:** _____ **Cell:** _____

Date of Incident: _ **Time of incider t:** _____

Area of jobsite where incident occurred: _____

Weather at Time of: ____ **Lighting Conditions:** _____

Type of incident:

☐ **Non-Injury** ☐ **Injury** ☐ **Vehicle** ☐ **Property** ☐ **Near Miss** ☐ **Other** _____

Injured Party Information

Name: _____

Address: _____

Phone: _____ **Job Title:** _____

Employer: _____ **Supervisor:** _____

Employer Address: _____

Incident Description

How did the incident occur? Describe in detail the task the employee/third party was doing when injured or became ill. Include specifics such as equipment, structure tools, materials, objects (size, shape and weight), people involved in the task, positions, distances, rate of movement, sequence of events, etc. [Please State Facts Only]

Witness Information

Name: _____ **Company:** _____ **Phone:** _____
Name: _____ **Company:** _____ **Phone:** _____
Name: _____ **Company:** _____ **Phone:** _____
Name: _____ **Company:** _____ **Phone:** _____

Incident Information

Describe the nature and extent of injury/illness (body part affected, type of injury, severity if known, etc.

Was First Aid Administered? **Yes** ☐ **No** ☐ **If yes, by whom:** _____

Was Injured party taken to a Hospital/Clinic **Yes** _ **No** __

If yes, the name of the facility: _____

You should use the space below or attach a diagram of the incident scene or site layout if it helps better describe the incident.

Date: _____ **Prepared By:** _____

To be completed and submitted within 2 hours by Supervisor

General Information

Date:_____ **Project Name:**_____

Project Address:_____

Superintendent:_____ **Phone:**_____ **Cell:**_____

PM:_____ **Phone:**_____ **Cell:**_____

Date of Incident:_____ **Time of incident:**_____

Area of jobsite where incident occurred:_____

Weather at Time of:_____ **Lighting Conditions:**_____

Type of incident:_____

___ Non-Injury ___ Injury ___Vehicle ___Property ___Near Miss ___Other:_____

Injured Party Information

Name:_____

Addres:_____

Phone:_____ **Job Title:**_____

Employer:_____ **Supervisor:**_____

Employer Address:_____

Incident Description

How did the incident occur? Describe in detail the task the employee/third party was doing when injured or became ill. Include specifics such as equipment, structure tools, materials, objects (size, shape and weight), people involved in the task, positions, distances, rate of movement, sequence of events, etc. [Please State Facts Only]

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Witness Information

Name:_____ **Company:**_____ **Phone:**_____

Name:_____ **Company:**_____ **Phone:**_____

Name:_____ **Company:**_____ **Phone:**_____

Name:_____ **Company:**_____ **Phone:**_____

Incident Information

Describe the nature and extent of injury/illness (body part affected, type of injury, severity if known, etc.

_____

_____

_____

Was first aid administered? ___**Yes** ___**No** **If yes, by whom:**_____

Was injured party taken to a Hospital/Clinic? ___**Yes** ___**No**

If yes, the name of the facility:_____

You should use the space below or attach a diagram of the incident scene or site layout if it helps better describe the incident.

Date:_____ **Prepared by:**_____

TGC Structural Grab & Go

Incident/Accident Reporting and Investigation Form

Ensure the safety and security of the individuals who were injured or involved, other people on site, the public, and the project.

Form to be filled out by the superintendent/foreman of the injured worker.

Secure the accident scene. Disturb only as necessary for rescue of injured workers or preventing further injury or damage.

Contact the Safety Department immediately.

Complete the entire GRAB & GO packet thoroughly. You have a maximum of 24 hours to complete the Grab & Go – at the end of 24 hours all documents are to be submitted to Safety Department

If the injured worker is a TGC Structural employee, someone from the field management team must accompany them to the medical facility.

Instruct the employee to ask the treating physician to offer to purchase over-the-counter medications instead of prescriptions for minor injuries such as small lacerations or puncture wounds.

Before leaving the medical facility after the initial visit and for each and every subsequent visit, instruct the injured worker to obtain the Work Release/Physical Capacities/Job Analysis Form.

Report Prepared By:_____Phone Number: _____

Date of Report:_____ ❑ Contacted the Safety Department

❑ Contacted Supervisor

 # 1 Project Information:

Jobsite Name:_____Job No.: _____

Address_____

Contractor:_____Superintendent:_____

Contractor Foreman:_____Project Manager:_____

Project Superintendent:_____

 # 2 Employee/Incident Information:

Employee Name:_____Job Title: _____

Address:_____Phone Number: _____

Exact location of incident (Bldg/Level/Area): _____

General task at time of incident (ie. Hanging Drywall): _____

Specific activity at time of incident (ie. Cutting Sheetrock): _____

#3 Injury/Illness Information:

Date of Incident:_____Day of Week:_____Time of Incident: _____

Date reported :_____, to whom? _____

Type of Injury:_____Part of body injured: _____

Was first aid given onsite? ❑ Yes ❑ No If Yes, by whom: _

Was employee taken to a medical facility offsite? ❑ Yes ❑ No Date: _____

Treating Facility & Phone Number: _____

Transported by: ❑ Ambulance ❑ Company Vehicle ❑ Private Vehicle Name of driver: _____

Employee returned to: ❑ Regular Work ❑ Modified Work If not, estimated return date: _____

Employee's Supervisor: _____

Working on a Crew? ❑ Yes ❑ No If yes, Crew size: _____

Was a Pretask Plan made for the work being performed at the time of the incident? ❑ Yes ❑ No If yes, Attach.

#4 Incident Designation:

❑ Valid Claim ❑ Suspicious Claim ❑ Unknown Claim (Completely unaware of the incident)

Reasons why this is a suspicious claim: _____

❑ First Aid Incident ❑ Recordable Incident ❑ Lost Time Incident

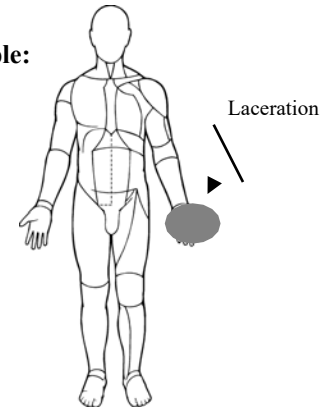
#5 Description of the Incident *(not to be completed by the injured worker)*:

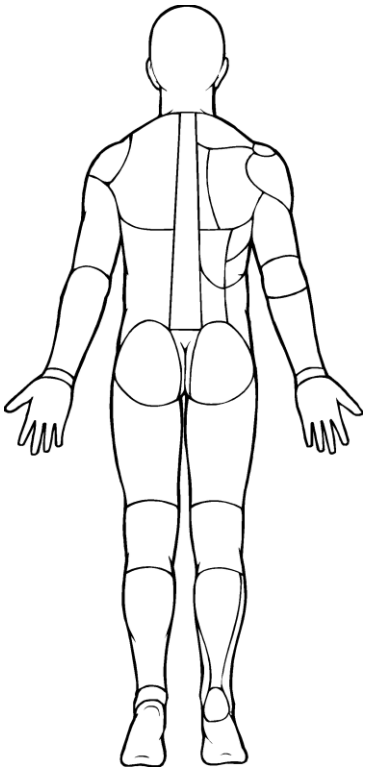
Describe in detail the circumstances of the incident (attach diagrams, drawings and/or photos of accident scene). Give a chronological sequence of events. If materials and/or equipment were involved, start before the materials/equipment are brought to the incident scene describing who, what, where, when, how: _____

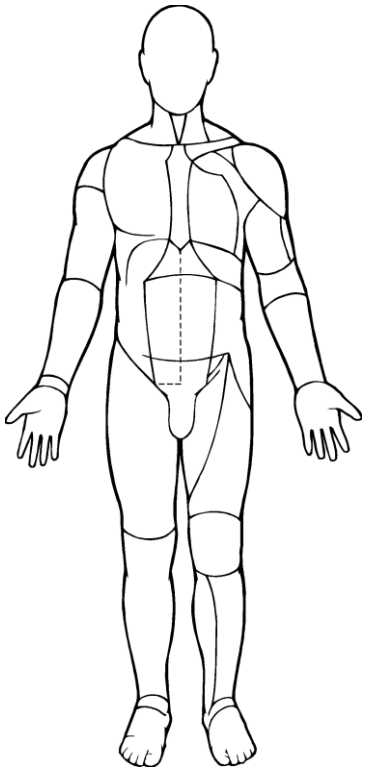
To be filled out by Employer Foreman or Superintendent

Please indicate the location of all incurred injuries and describe the type of injury. For example, for a laceration to the right palm – shade the right hand palm and write laceration next to it connected by a line.

Example:







6 Additional Information:

Name of witnesses and others working with injured worker (attach witness statements): _____

Object, substance, equipment involved in incident (desc/model/serial #): _____

PPE worn at time of incident: _____

Safety equipment & training required for job: _____

Does employee normally operate this equipment? ❑ Yes ❑ No

Was employee instructed in the safe use of this equip? ❑ Yes ❑ No When/How? – Describe in detail & attach copies of equipment certifications? _____

Was any defect with the equipment noted or reported prior to accident/incident? ❑ Yes ❑ No

Was any recent maintenance/service performed on this equipment? ❑ Yes ❑ No If yes, when/what – Describe in detail and attach copies of invoices/work orders? _____

Were standard work procedures followed? ❑ Yes ❑ No If no, why not – Describe in detail, attach additional sheets if necessary and attach a copy of the standard site procedures? _____

Was a safety rule or specific instruction violated? ❑ Yes ❑ No If yes, what – Describe in detail, attach additional sheets if necessary and attach a copy of the rule/regulation? _____

When/How was this rule, regulation or specific instruction communicated to the injured worker(s)? _____

#7 Signatures:

Foreman: _____ _____

Print Name *Signature*

Superintendent: _____ _____

Print Name *Signature*

Injured Worker's Statement *(To be filled out by Employee)*

I_____am submitting this statement made on_____of my
(Employee Name) (Date)
own free will. I have not been coerced or threatened in any way to submit this statement.

Consider in your statement and write below in the area provided below:

- What happened? Tell a story.
- Where were you when the incident took place?
- What activity was being performed prior to the event?
- Any other information or detail
- If you were not a witness to this incident, please state
- What do you believe happened?

Statement:

If you were injured in the incident, have you ever injured this body part before? ❑ Yes ❑ No

Employee Signature:_____I have received a copy of this statement: ❑ Yes ❑ No

Today's Date:_____Employer:_____

Home Address: _____

_____

Home Phone:_____Cell: _____

Employee/Witness Statement *(Employer: hand to Witness)*

I_____am submitting this statement made on_____of my
(Employee Name) (Date)
own free will. I have not been coerced or threatened in any way to submit this statement.

Consider in your statement and write below in the area provided below:

- What happened? Tell a story.
- Where were you when the incident took place?
- What activity was being performed prior to the event?
- Any other information or detail
- If you were not a witness to this incident, please state
- What do you believe happened?

Statement:

If you were injured in the incident, have you ever injured this body part before? ❑ Yes ❑ No

Employee Signature:_____I have received a copy of this statement: ❑ Yes ❑ No Today's

Date:_____Employer:_____

Home Address: _____

_____

Home Phone:_____Cell: _____

Employee/Witness Statement *(Employer: hand to Witness)*

I_____am submitting this statement made on_____of my
(Employee Name) (Date)
own free will. I have not been coerced or threatened in any way to submit this statement.

Consider in your statement and write below in the area provided below:

- What happened? Tell a story.
- Where were you when the incident took place?
- What activity was being performed prior to the event?
- Any other information or detail
- If you were not a witness to this incident, please state
- What do you believe happened?

Statement:

If you were injured in the incident, have you ever injured this body part before? ❑ Yes ❑ No

Employee Signature:_____I have received a copy of this statement: ❑ Yes ❑ No Today's

Date:_____Employer:_____

Home Address: _____

_____

Home Phone:_____Cell: _____

Employee/Witness Statement *(Employer: hand to Witness)*

I_____am submitting this statement made on_____of my
(Employee Name) (Date)
own free will. I have not been coerced or threatened in any way to submit this statement.

Consider in your statement and write below in the area provided below:

- What happened? Tell a story.
- Where were you when the incident took place?
- What activity was being performed prior to the event?
- Any other information or detail
- If you were not a witness to this incident, please state
- What do you believe happened?

Statement:

If you were injured in the incident, have you ever injured this body part before? ❑ Yes ❑ No

Employee Signature:_____I have received a copy of this statement: ❑ Yes ❑ No Today's

Date:_____Employer:_____

Home Address: _____

_____

Home Phone:_____Cell: _____

Employee/Witness Statement *(Employer: hand to Witness)*

I_____am submitting this statement made on_____of my
(Employee Name) (Date)
own free will. I have not been coerced or threatened in any way to submit this statement.

Consider in your statement and write below in the area provided below:

- What happened? Tell a story.
- Where were you when the incident took place?
- What activity was being performed prior to the event?
- Any other information or detail
- If you were not a witness to this incident, please state
- What do you believe happened?

Statement:

If you were injured in the incident, have you ever injured this body part before? ❑ Yes ❑ No

Employee Signature:_____I have received a copy of this statement: ❑ Yes ❑ No Today's

Date:_____Employer:_____

Home Address: _____

_____

Home Phone:_____Cell: _____

saifcorporation
400 High St. SE, Salem, OR 97312

SAIF Corporation
2010-02-01 21:55:13

When you become aware of an job injury, complete the 801 form as soon as possible and mail it to SAIF at the

Toll-free phone: 1.800.285.8525
Toll-free FAX: 1.800.475.7785

Report of Job Injury or Illness

Workers' compensation claim

Worker

To make a claim for a work-related injury or illness, fill out the worker portion of this form and give to your employer. **If you do not intend to file a workers' compensation claim with SAIF Corporation, do not sign the signature line.** Your employer will give you a copy.

1. Date of injury or illness:	2. Date you left work:	3. Time you began work on day of injury: ☐ a.m. ☐ p.m.	4. Regularly scheduled days off: ☐☐☐☐☐☐☐ M T W T F S S	DEPT USE:
5. Time of injury or illness: ☐ a.m. ☐ p.m.	6. Time you left work: ☐ a.m. ☐ p.m.	7. Shift on day of injury: (from) ☐ a.m. ☐ p.m. (to) ☐ a.m. ☐ p.m.		Emp
8. What is your illness or injury? What part of the body? Which side? (Example: sprained right foot) ☐ Left ☐ Right			9. Check here if you have more than one job: ☐	Ins
10. What caused it? What were you doing? Include vehicle, machinery, or tool used. (Example: Fell 10 feet when climbing an extension ladder carrying a 40-pound box of roofing materials)				Occ
				Nat
				Part
				Ev
				Src
				2src

Information ABOVE this line: date of death, if death occurred; and Oregon OSHA case log number must be released to an authorized worker representative upon request.

11. Your legal name:	12. Worker's language preference other than English: ☐ Spanish ☐ Other (please specify):	13. Birthdate:	14. Gender: ☐ M ☐ F
15. Your mailing: Address City State Zip			16. Home phone:
17. Social Security no. (see back*):	18. Occupation:		19. Work phone:
20. Names of witnesses:			
21. Name and phone number of health insurance company:		22. Name and address of health care provider who treated you for the injury or illness you are now reporting:	
23. Have you previously injured this body part? ☐ Yes ☐ No			
24. Were you hospitalized overnight as an inpatient? ☐ Yes ☐ No			
25. Were you treated in the emergency room? ☐ Yes ☐ No			

26. By my signature, I am making a claim for worker's compensation benefits. The above information is true to the best of my knowledge and belief. I authorize health care providers and other custodians of claim records to release relevant medical records to the workers' compensation insurer, self-insured employer, claim administrator, and the Oregon Department of Consumer and Businesss Services. **Notice:** Relevant medical records include records of prior treatment for the same conditions or of injuries to the same area of the body. A HIPAA authorization is not required (45 CFR 164.512(I)). Release of HIV/AIDS records, certain drug and alcohol treatment records, and other records protected by state and federal law requires separate authorization.

27. Worker signature:	28. Completed by (please print):	29. Date:

Employer

Complete the rest of this form and give a copy of the form to the worker. Notify SAIF Corporation within five days of knowledge of the claim. Even if the worker does not wish to file a claim, maintain a copy of this form.

30. Employer legal business name: TGC Structural	31. Phone: (541) 753-2012	32. FEIN: 93057902
33. If worker leasing company, list client business name:		34. Client FEIN:
35. Address of principal place of business (not P.O. Box): 200 SW Airport Road, Corvallis, Oregon 97339		36. Insurance policy no.: 522037
37. Street address from which worker is/was supervised: ZIP:		38. Nature of business in which worker is/was supervised: Construction
39. Address where event occurred:		
40. Was injury caused by failure of a machine or product, or by a person other than the injured worker? ☐ Yes ☐ No		41. Class code:
42. Were other workers injured? ☐ Yes ☐ No	43. Did injury occur during course and scope of job? ☐ Unknown ☐ Yes ☐ No	44. OSHA 300 log case no:

45. Date employer knew of claim:	46. Worker's weekly wage: $	47. Date worker hired:	48. If fatal, date of death
49. Return-to-work status: Not returned ☐ Regular Date: ☐ Modified Date:			50. If returned to modified work, is it at regular hours and wages? ☐ Yes ☐ No
51. Employer signature:	52. Name and title (please print):		53. Date:

801
X801 1/10

OSHA requirements: On the job fatalities and catastrophes must be reported to Oregon OSHA within eight hours. Report any accident that results in overnight hospitalization within 24 hours to Oregon OSHA. Call 800.922.2689, 503.378.3272, or Oregon Emergency Response 800.452.0311, on nights and weekends.

801

RESET PRINT

A guide for workers recently hurt on the job

The following information is provided by SAIF Corporation
at the request of the Workers' Compensation Division

saifcorporation
400 High St. SE, Salem, OR 97312

How do I file a claim?

- Notify your employer and a health care provider of your choice about your job-related injury or illness as soon as possible. Your employer cannot choose your health care provider for you.
- Ask your employer the name of its workers' compensation insurer.
- Complete **Form 801, "Report of Job Injury or Illness,"** available from your employer and **Form 827, "Worker's and Physician's Report for Workers' Compensation Claims,"** available from your health care provider.

How do I get medical treatment?

- You may receive medical treatment from the health care provider **of your choice**, including:
  - Authorized nurse practitioners
  - Chiropractors
  - Medical doctors
  - Naturopaths
  - Oral surgeons
  - Osteopathic doctors
  - Physician assistants
  - Podiatrists
  - Other health care providers
- The insurance company may enroll you in a managed care organization at any time. If it does, you will receive more information about your medical treatment options.

Are there limitations to my medical treatment?

- **Health care providers may be limited in how long they may treat you and whether they may authorize payments for time off work.** Check with your health care provider about any limitations that may apply.
- **If your claim is denied, you may have to pay for your medical treatment.**

If I can't work, will I receive payments for lost wages?

- You may be unable to work due to your job-related injury or illness. In order for you to receive payments for time off work, your health care provider must send written authorization to the insurer.
- Generally, you will not be paid for the first three calendar days for time off work.
- You may be paid for lost wages for the first three calendar days if you are off work for 14 consecutive days or hospitalized overnight.
- If your claim is denied within the first 14 days, you will not be paid for any lost wages.
- Keep your employer informed about what is going on and cooperate with efforts to return you to a modified- or light-duty job.

What if I have questions about my claim?

- SAIF Corporation or your employer should be able to answer your questions. Call SAIF Corporation at 800.285.8525.
- If you have questions, concerns, or complaints, you may also call any of the numbers below:

  Ombudsman for Injured Workers:

  An advocate for injured workers

  Toll-free: 800.927.1271

  Email: oiw.questions@state.or.us

  Workers' Compensation Compliance Section

  Toll-free: 800.452.0288

  Email: workcomp.questions@state.or.us

* **Do I have to provide my Social Security number on Forms 801 and 827? What will it be used for?**
You do not need to have an SSN to get workers' compensation benefits. If you have an SSN, and don't provide it, the Workers' Compensation Division (WCD) of the Department of Consumer and Business Services will get it from your employer, the workers' compensation insurer, or other sources. WCD may use your SSN for: quality assessment, correct identification and processing of claims, compliance, research, injured worker program administration, matching data with other state agencies to measure WCD program effectiveness, injury prevention activities, and to provide to federal agencies in the Medicare program for their use as required by federal law. The following laws authorize WCD to get your SSN: the Privacy Act of 1974, 5 USC § 552a, Section (7)(a)(2)(B); Oregon Revised Statutes chapter 656; and Oregon Administrative Rules chapter 436 (Workers' Compensation Board Administrative Order No. 4-1967).

440-3283 (01/10/DCBS/WCD/WEB) for distribution with X801 SAIF Corporation 1/10

To be completed by the Superintendent after the Grab and Go Form is complete

Should be submitted with the Grab and Go Form

General Information

Date: _____ **Project Name:** _____

Date of Incident: _____ **Time of incident:** _____

Root Cause Analysis (check all that apply)

Unsafe Acts	Unsafe Conditions	Management Deficiencies
☐ Improper work technique	☐ Poor work station design or layout	☐ Lack of written procedure/policy
☐ Safety policy violation	☐ Congested work area	☐ Safety policy not enforced
☐ Improper or no PPE used	☐ Hazardous substance	☐ Hazards not identified
☐ Operating without authority	☐ Fire or explosion hazard	☐ PPE unavailable
☐ Failure to warn or secure	☐ Inadequate ventilation	☐ Insufficient worker training
☐ Operating at improper speeds	☐ Improper material storage	☐ Insufficient supervisor training
☐ By passing safety device	☐ Improper tool or equipment	☐ Improper maintenance
☐ Guards not used	☐ Insufficient knowledge of the task	☐ Inadequate supervision
☐ Improper loading or placement	☐ Slippery Conditions	☐ Inadequate job planning
☐ Improper lift techniques	☐ Poor housekeeping	☐ Inadequate hiring practices
☐ Servicing machinery in motion	☐ Excessive noise	☐ Inadequate work place inspection
☐ Horseplay	☐ Inadequate guarding of hazards	☐ Inadequate equipment
☐ Drug or alcohol use	☐ Defective tools or equipment	☐ Unsafe design or construction
☐ Unnecessary haste	☐ Insufficient lighting	☐ Unrealistic scheduling
☐ Unsafe acts of others	☐ Inadequate fall protection	☐ Poor process design
☐ Other	☐ Other	☐ Other

Incident Analysis

Using the root cause analysis list above, explain the cause(s) of the incident in as much detail as possible

How bad could the incident have been?
☐ Very Serious ☐ Serious ☐ Minor

What is the chance of the incident happening again?
☐ Frequent ☐ Occasional ☐ Rare

Preventative Actions

Describe actions that will be taken to prevent a recurrence	Deadline	By Whom	Complete

Person(s) performing the Root Cause Analysis

Print Name: **Signature:**

Reviewed By: **Initials**

Superintendent: _____

Safety Department: _____

Safety Committee Representative: _____

Work Release and Physical Capacity Form

Employee Name:_____Todays' Date: _____

Employer Name:_____Date of Injury: _____ Employee Job

Title: _____ ☐ **Regular Duty** ☐ **Modified Duty**

Specific Tasks: _____

Location of worksite: _____

Physical Demands

Sit (Hours)_____Consecutive hours at a time_____Total hours per day

Stand (Hours)_____Consecutive hours at a time_____Total hours per day

Walk (Hours)_____Consecutive hours at a time_____Total hours per day

Employee may alternate between sitting and standing every_____Hours.

	Seldom	**Occasionally**	**Frequently**	**Continuously**	**N/A**
Restrictions below are for the: Lt. Hand_____Rt. Hand_____Both Hands _____					
No Restrictions ☐					
Hand/Wrist work	☐	☐	☐	☐	☐
Grasping	☐	☐	☐	☐	☐
Pushing/Pulling	☐	☐	☐	☐	☐
Fine manipulation	☐	☐	☐	☐	☐
Reach above shoulder	☐	☐	☐	☐	☐
Bend/twist	☐	☐	☐	☐	☐
Kneel/Squat	☐	☐	☐	☐	☐
Climb/Ladder/Stairs	☐	☐	☐	☐	☐
Lifting 1-10 lbs.	☐	☐	☐	☐	☐
Lifting 11 – 20 lbs.	☐	☐	☐	☐	☐
Lifting 21 – 50 lbs.	☐	☐	☐	☐	☐
Lifting over 50 lbs.	☐	☐	☐	☐	☐
Distance objects can be carried _____					

Key

Seldom (0-1 Hrs) **Occasionally (1-3 Hrs)** **Frequently (3-6 Hrs)** **Continuously (6-8 Hrs)**

Specific restrictions: _____

The above-captioned worker is able to physically commute to and perform the work tasks as described above, effective (Date)_____for_____hours per day.(unless otherwise indicated, full shift and immediate effective date assumed)

_____ _____

Physician **Date:**

TGC Structural (TGCS) provides "Train the Trainer" safety training for Superintendents which enables them to train their crew. Superintendents are responsible for the Site Specific portion of training. See the appropriate section of the Injury Illness Prevention Program Manual for training requirements. The table below shows required training which must be documented.

DEFINITIONS: OR-OSHA has general training requirements intended to make workers aware of the overall safety and health aspects of their jobs and specific training requirements that apply to workers who perform special jobs or tasks. OR-OSHA's safety and health requirements frequently use the words *certified, designated, authorized, competent person,* and *qualified person* to identify workers who must meet specific training requirements.

- **Certified** indicates that a worker has successfully completed specialized training and that the training has been certified in writing by a professional organization. For example, OROSHA's safety and health rules allow only trained audiologists, otolaryngologists, or technicians who have been certified by the Council of Accreditation in Occupational Hearing Conservation to perform audiometric tests
- **Designated** generally refers to a person who has received extensive training in a particular task and is assigned by the employer to perform the task
- **Authorized** refers to a person permitted by an employer to be in a regulated area; the term also refers to a person assigned by an employer to perform a specific task or to be in a specific location at a jobsite
- A **competent person** is someone who has broad knowledge of worksite safety and health issues, who is capable of identifying existing and predictable worksite hazards, and who has management approval to control the hazards. Only a competent person can supervise erecting, moving, or dismantling scaffolds at a worksite, for example
- A **qualified person** is someone who, through training and professional experience, has demonstrated the ability to resolve problems relating to a specific task or process. For example, an individual may be qualified to perform electrical circuit tests but not qualified to perform hydraulic pressure tests

SAFETY TRAINING

Type	Specialized	Site Specific	IIPP Reference	Expires
Forklift	X	X	C13	3 Years
First Aid/CPR	X		A4	2 Years
Respirator	X		B2	1 Year
Powder Actuated Tools	X		C12	
Welding/Cutting		X	C18	
Excavation		X	C9	
Permit Required Confined Space	X	X	C4	
Fall Protection	X	X	C10	
Ladders		X	C16	
Aerial Work Platforms (AWP)			C15	5 Years
Generalized Training	X		C15	5 Years
Familiarization Training		Lift Specific	C15	
Scaffold Erector	X		C15	
Scaffold User		X	C15	
HazCom		X	A7	
Lead Awareness	X		B5	1 Year
Asbestos Awareness	X		B8	1 Year
PPE		X	A12	
Rigging	X		C5	5 Years
Signalman	X		C5	5Years

In an effort to ensure compliance to this program and all OR-OSHA, OSHA and DOSH Standards, TGC Structural (TGCS) has implemented the following disciplinary policy for all employees and contractors working on TGCS projects. This is established to promote safety and eliminate offenders and repeat offenders. This program may be used or may be superseded with more severe discipline based on the degree of the infraction(s). In any case TGCS has sole authority in what type of discipline is issued up to and including removal from the project.

Procedures:

- **1st offense** give a verbal warning (written record kept)
- **2nd offense** written safety violation and his/her supervision is brought into the office for a "discussion" with the TGCS Project Management Personnel. A copy of the safety violation is sent to the offending workers company's office. With a statement to the effect that if this happens again, the worker will be removed from the project and could lead to a termination of the contract
- **3rd offense** the worker is removed from the project and all TGCS Projects for a specific period of time to be determined by the TGCS Project Team
- **If repeat occurrences with other crewmembers are found** the supervisor of said offenders shall be subject to removal from the project

Immediate removal from the project may result when the nature of the violation or when repeated violations make retention of the violator unacceptable. Willful disregard for serious safety hazards will result in immediate removal from the project of individuals directly responsible. Examples: fall protection, lockout/tag out, confined space, trenching. Violations involving these types of work could result in serious injury or death to one or more employees.

Employee/Subcontractor Safety Violation Notice

Employer: _____

Employee: _____ **Date:** _____

Supervisor: _____ **Jobsite:** _____

State Safety Policy Violation: _____

_____

_____

_____

_____

_____

_____

☐ **First Offense:** Employee was found working in an unsafe manner. The employee was counseled in his/her work habits and how working in an unsafe manner is inconsistent with our goals. **Verbal Warning** (written record kept)

☐ **Second Offense:** Employee was again found working in an unsafe manner. The employee was counseled in his/her work habits and how working in an unsafe manner is inconsistent with our goals. The employee is in jeopardy of being terminated for further non-compliance with safety policy and procedures. **Written Warning** (supervisor brought in for a "discussion" with the TGCS Project Management Personnel. A copy of the safety violation is sent to the offending workers company's office)

☐ **Third Offense:** Employee was found working in an unsafe manner or has blatantly placed themselves or others in extreme or excessive danger and is to be immediately terminated. **Removal** (worker is removed from the project and all TGCS Projects for a specific period of time TBD by the TGCS Project Team)

☐ **Repeat Offense:** A repeat occurrence with other crewmembers. **Removal** (supervisor is removed from the project and all TGCS Projects for a specific period of time TBD by the TGCS Project Team)

Employee Signature: _____

Supervisor Signature: _____

Witness Signature: _____

TGC Structural (TGCS) has adopted this Personal Protective Equipment (PPE) Program to ensure that when hazards cannot be fully controlled with engineering or process controls that employees or subcontractor employees use appropriate personal protection. It is also to assist in ensuring compliance with OSHA, OR-OSHA and DOSH Standards in addition to the following TGCS requirements.

Appropriate training on the use and maintenance of PPE will be provided by, or arranged for by, our supervisors. Employees are required to wear proper personal protective equipment.

The PPE provided shall be used as outlined by specific job procedures and maintained in a sanitary and reliable condition.

The selection of PPE shall be made by our management staff and designed to match the hazard to allow employees to safely conduct their job tasks.

PPE is designed to protect the worker from injury or harm. However, it is not designed to prevent the *occurrence* of an incident which might cause harm or injury. Therefore, we must ensure that working conditions are safe and PPE is used as a back-up for additional protection.

Workplace hazards will be assessed by the project superintendent.

Prior to achieving Temporary Certificate of Occupancy (T.C.O.) the requirements for PPE are 100% coverage all the time for all people onsite. After achieving T.C.O., should conditions change, the area and requirements can be reassessed, by the project superintendent and workers shall be retrained if necessary.

- Prior to T.C.O. the superintendent has the option of removing the hard hat and tennis shoe restrictions only after approval of management

Defective or damaged PPE shall not be used.

Appropriate Clothing

- Long pants are required at all time
- Shorts, dresses and sweat pants are not allowed on the jobsite
- Shirts with sleeves that cover the shoulder are required
- No muscle, mesh, tank top or similar shirts are allowed on the jobsite
- Shirts with the hem on the sleeve cut off are not allowed on the jobsite
- Clothing that may get caught in tools or equipment, such as loose fitting, torn or ragged clothing shall not be allowed on the jobsite
- Workers exposed to roofing tar must wear long sleeved shirts

High-Vis Clothing or Vests

- Shall be worn at all times when workers are exposed to vehicle traffic or may become exposed to vehicle traffic
- Colors for the clothing that meets this policy shall be determined by the project
- Reflective clothing and/or vests are required when working after dark or in low light levels

Head Protection

- All employees, subcontractor employees and visitors to the project sites are required to wear hardhats that comply with ANSI Z89.1
- Aluminum hardhats, and bump caps are not permitted
- Hard hats shall be worn whenever ‘hard hat’ signs are posted regardless of whether an overhead hazard exists

Hearing Protection

- When an employee could be exposed to noise in excess of 85 dBA, their employer will provide hearing protection, which will reduce the noise to an acceptable level
- Earmuffs and earplugs are used to protect against hazardous noise levels when they cannot be adequately lessened by various engineering controls
- Hearing protective devices are supplied to all employees

Eye and Face Protection

- All employees, subcontractor employees and visitors to the project sites are required to wear safety glasses that comply with ANSI Z87.1
- Prescription eyeglasses and sunglasses that do not comply with ANSI Z87.1 are **prohibited**
- All ANSI approved prescription glasses shall have ANSI approved side shields
- Employees performing work that could potentially cause materials to become flying objects such as, but not limited to, chipping, welding, grinding, cutting and chiseling, shall utilize a face shield in addition to safety glasses or goggles whichever is appropriate
- A face shield shall be worn while using powder-actuated tools
- Employees performing work that could potentially expose them to harmful chemicals may be required to utilize safety goggles and/or a face shield
    - Please refer to manufacturer SDS for specific requirements

Hand Protection

- Hand protection is worn to protect the hands from a mechanical injury due to friction, heat, shearing/cutting actions, and for protection against chemicals
- Chemical protective gloves are selected based on the type of rubber/plastic material which affords proper protection against specific chemicals used
    - The selection will be made by the supervisor
- Chemical protective gloves will be worn when there is skin contact with the following chemicals:
    - Solvents
    - Any corrosives
    - Spill clean-up
    - Concrete
- As an option Kevlar gloves may be worn when using hand held grinders
- AS an option Kevlar gloves may be worn when erecting tilt panels

Foot Protection

- All employees, subcontractor employees and visitors to project sites are required to wear work boots with sturdy leather uppers
- Employees working with jackhammers, tampers and similar equipment are required to utilize metatarsal guards over their work boots
- Soft soled shoes are allowed only in specific areas or tasks (I.E. finished areas, sloped roofing work)
- Tennis or running type shoes are not allowed on the jobsite

Leg Protection

- Persons using chainsaws must wear chaps or leg protectors that cover the leg from the upper thigh to mid-calf
- The chaps must be made of a material designed to resist cuts from the chainsaw

This program identifies the method of Pre-Task Planning that is required for each work operation. The Pre-Task Plan (PTP) will be made available to the project team for review and comment. (Sample forms are available at the end of this section.)

Pre-Task Plan – (PTP) This daily plan is designed to take place at the start of each work shift. Supervisors shall meet with their crews to discuss the tasks to be accomplished and the steps that need to take place to work safely. All workers shall review and sign the relevant PTP for their assigned work. The main components of the PTP will include but are not limited to the following:

- Evaluating the Work Area
- Potential Hazard Checklist
- Description of Steps to be Performed
- Hazards Associated with Each Step
- Required Actions to Eliminate or Control the Hazard
- Crew Sign-off

A copy of the PTP shall be kept near the work location and made available for review.

Roles and Responsibilities

- The Project Superintendent will ensure that PTP's are completed
- When applicable, pre-construction meetings will be held to review the PTP's

Pre Task Planning Worksheet

Company Name: _____

Creator Name: _____ **Phone #:** __

Start Date: _____ **Completion Date:** __

Project Location: _____

Specific Location: _____

Type of Work: _____ **Crew Size:** _____

Are the following required?

Lock out Tag out:	Yes	No	Hot Work Permit:	Yes	No
Confined Space Permit:	Yes	No	Critical Lift Plan:	Yes	No
Ladders:	Yes	No	Ladders inspected:	Yes	No

HAVE YOU WALKED YOUR WORK AREA?	**Yes**	**No**
Does this task require special training?	Yes	No
Is the work area congested with other crafts?	Yes	No
Has the work plan been coordinated with other crafts in the area?	Yes	No
Does this task require any special permits or procedures?	Yes	No
Have you addressed any barricading requirements appropriate to the task?	Yes	No
Are you working around live systems or energized equipment? (sub grade 5')	Yes	No
Have all portable electric tools and equipment been inspected prior to use?	Yes	No
Will weather conditions affect the safe completion of this work?	Yes	No
Do you need to review a SDS to proceed with this work?	Yes	No
Have employees been trained in the proper usage and disposal of PPE?	Yes	No
Are enough personnel assigned to this task to complete it safely?	Yes	No
Does task require disassembly of systems or equipment? Is demolition to be performed?	Yes	No
Identified all emergency equipment? Fire extinguishers, eyewashes and phones, etc?	Yes	No
Does this work involve working underneath the raised floor?	Yes	No
Does this work involve awkward positions or static postures?	Yes	No
Have you looked at all ergonomic issues related to this work?	Yes	No
Is there adequate material handling equipment available?	Yes	No
Are you familiar with evacuation routes?	Yes	No
Have you contacted the appropriate personnel?	Yes	No
Are drawings on hand?	Yes	No
Should the safety department be involved in this planning?	Yes	No
Have you performed a sequential step job analysis? (Form Attached	Yes	No

PPE Required

Hand Protection:	Yes	No	Type:	Kevlar	Rubber	Leather	Cotton	Nitrile	Other
Fall Protection:	Yes	No							
Face Shield:	Yes	No							
Foot/Toe Protection:	Yes	No							

Sequence of basic job steps	Hazards involved in completing steps	Method to eliminate hazards and/or PPE to be utilized

Crew Members Signatures

Creators Signature: _____ **Date:** _____

Superintendents Signature: _____ **Date:** _____

All TGC Structural (TGCS) employees will receive a New Hire Safety Orientation before they are allowed to start work. The New Hire Safety Orientations will be given when they are: new employee's, transfers, rehires, or when they have demonstrated they did not understand the first orientation by not following the TGCS safety policies and procedures. The New Hire Safety Orientation maybe found in Section A14 of the TGCS's IIPP Manual.

In addition to The New Hire Orientation, TGCS employees will also receive a Site Specific Safety Orientation when they first arrive at the jobsite. If a new employee reports directly to the jobsite, they must receive both orientations. . The Site Specific Safety Orientation maybe found in Section A14 of the TGCS's IIPP Manual.

All subcontractors working on TGCS projects are solely responsible to ensure their employees and the employees of their subcontractors either attend the site orientation provided by TGCS or provide the Site Specific Safety Orientation to their own employees. If the contractor elects to give the orientations themselves, the foreman of the contractor must provide TGCS with the signed Site Specific Safety Orientation Form before the employee is allowed to work onsite.

No employee will be permitted to work until such orientation has been successfully completed and documented.

Procedures New Hire Safety Orientation:

- It is the responsibility of the direct supervisor to the employee to conduct this orientation
- Must be filled out and signed by the supervisor as well as the employee
- The signed form is then sent to the TGCS office and placed in the employees file

Procedures Site Specific Safety Orientation:

- It is the responsibility of the direct supervisor to the employee to conduct this orientation
- Must be filled out and signed by the supervisor as well as the employee
- The signed form is then sent to the TGCS office and placed in the employees file

Employee's Name: _____

Job Assignment: _____

Date of Hire: _____

☐ **New Employee** ☐ **Transfer** ☐ **Re-Hire** ☐ **Re-Orientation**

☐ **Other (specify)** _____

General

☐ Production goals and expectations

☐ Timesheets, overtime, payday

☐ Absentee calling procedures

☐ Vacation/Leave/Time off request policy

☐ Harassment Policy

☐ Use of company vehicles

☐ Personal use of company facilities/property

☐ Tobacco use policy

☐ Handheld electronic device use policy

☐ Drug and Alcohol policy

☐ Appropriate clothing

☐ No fire arms, explosives or knifes

☐ Lockout/Tagout and assured grounding

☐ Hand and power tool procedures

☐ HazCom Overview

☐ Confined space locations

Incident/Accident Reporting

☐ Report all incidents, accidents, injuries, near misses (no matter how small) to you supervisor immediately

Overall Safety Program (IIPP)

☐ Read and review the Safety Policy Statement

☐ Read the Code of Safe Work Practices

☐ Explain the function of the Safety Committee and Safety Meetings

First Aid/CPR

☐ Explain how to get treatment

☐ Show location(s) of First Aid supplies, equipment

☐ Inform who is First Aid / CPR trained

☐ Discuss bloodbourne pathogen program

☐ Show location of the nearest emergency medical facility

Emergency Action Plan

☐ Explain the emergency action plan procedures including
- Emergency phone numbers
- Emergency exit locations
- Emergency evacuation routes
- Collection/Rally points
- Head count

Fall Protection Program

☐ Fall protection plan

☐ 6 ft. fall protection requirement

☐ Required training to use Personal Fall Arrest Systems (PFAS)

Training Requirements

☐ Site Specific training will be required for the following: (When performing the training use the sign in sheets at the end of each respective section to document this training.)
- Ladders
- Scaffolding
- Fall Protection
- HAZ-COM
- Forklift
- Aerial Work Platforms

☐ Specialized training will be required for the following:
- Forklift
- Boom and Scissor lifts
- Rigging
- Signaling
- Scaffold erection
- Respirators
- Powder actuated tools

Others Items

☐ _____
☐ _____
☐ _____
☐ _____
☐ _____
☐ _____
☐ _____
☐ _____
☐ _____
☐ _____
☐ _____
☐ _____

Employee's Name (Print)

Employee's Signature

Supervisor's Name (Print)

Supervisor's Signature

In the event of an incident (fire, injury, etc.) requiring the assistance of outside personnel, craft persons shall contact a TGC Structural (TGCS) Project Management Team Member immediately. If the situation requires immediate outside attention and there is no time to contact a management team member, individuals shall dial # *911*. Upon calling, the person shall state their name, their contractor's name, the location of the emergency, and the type of emergency. Immediately after this emergency call is made, the person shall contact the TGCS Project Management Team and their direct superiors.

The TGCS Project Management Team will work with the subcontractors in developing appropriate evacuation procedures as the job progresses. For emergencies involving building evacuation all craft persons shall follow the posted evacuation routes to their designated evacuation assembly area. Craft persons shall remain at the evacuation assembly area until they are accounted for by their supervision and an "all clear" is given to return to the project. TGCS will designate and establish the evacuation assembly area for the project.

A list of "key" onsite and home office personnel (with phone numbers) shall be developed by each subcontractor and submitted to TGCS Project Management Team prior to any work commencing, to assist communication in case of a project emergency.

Prior to the start of the project the TGCS Superintendent will identify the nearest Urgent Care facility and the nearest Hospital Emergency Room and place that information on the Emergency Response Plan Form at the end of this section. Maps for these locations will be posted and copies made available to the subcontractors. The superintendent will also determine the best location for the onsite rally point where the crews can safely gather for a head count.

IN THE EVENT OF A SERIOUS ACCIDENT OR INJURY DIAL 911

Project Name: _____

Project Address: _____

Cross Streets: _____

(Note: If multiple entrances are present, specify to dispatch which entrance and that someone will meet them)

Project Phone#: _____

Rally Point Location: _____

First Aid Kit Locations: _____

First Aid Trained Personnel: _____

Superintendent: _____

Home Phone: _____ **Cell Phone:** _____

Alternate Contact: _____

Home Phone: _____ **Cell Phone:** _____

Urgent Care Facility: _____

Address: _____ **Phone #** _____

Emergency Hospital: _____

Address: _____ **Phone #** _____

This Plan Must be Posted at All Phones on TGCC Projects

Subcontractors: Please Post By Phone in Your Job Trailer

The overall reason for planning for an emergency is to provide a systematic approach to managing the crisis in an organized fashion, without causing a major disruption of normal activities. A crisis management plan is designed to maintain the TGC Structural (TGCS) credibility and positive image with all of its identified audiences in the face of adversity. Our customers, employees, management, financial supporters, industry peers and others, should all feel we were well organized and handled the emergency in a professional manner. Because emergencies do not pause to allow us to think through the problem, we need to be prepared for every emergency most apt to happen.

Our plan is organized for immediate use in the event of an emergency. The project teams should develop the Crisis Management Plan (see section A 16.1) prior to starting the project. Copies of the plan should be printed out and kept on hand by all senior staff of the project.

This plan must be developed for each project regardless who would be taking the lead with the media. Whether we are a subcontractor, the general contractor on a stand alone site or the general contractor on a large site where the owner has requested that all media relations be handled by their spokesperson the information within this plan will help who ever is dealing with the media.

The Crisis Management Plan template and the instructions for developing the Crisis Mangement Plan can be obtained by contacting the Safety Department.

TGC Structural (TGCS) will strive to maintain a positive working relationship with all regulatory agencies. By law, any regulatory agency or compliance officer (Authority) has the right to enter and inspect any place of employment during normal working hours. It is TGCS policy NOT to deny entry and to fully cooperate with Regulatory Inspectors. TGCS expects all subcontractors to follow that policy.

OR-OSHA Consultative Services

- TGCS encourages the use of OR-OSHA consultative services to help employers and employees identify and correct occupation safety and health hazards
- Consultants can be utilized for pre-job and pre-task planning. Contact the Safety Consultant to arrange an OR-OSHA Consultation

DOSH Consultations

- TGCS encourages the use of DOSH consultative services to help employers and employees identify and correct occupation safety and health hazards
- Consultants can be utilized for pre-job and pre-task planning. Contact the Safety Consultant to arrange a DOSH Consultation

AGC and/or Third Party Safety Consultants

- TGCS encourages the use of AGC and/or Third Party consultative services to help employers and employees identify and correct occupation safety and health hazards
- Consultants can be utilized for pre-job and pre-task planning. Contact the Safety Consultant to arrange an AGC or Third Party Consultation

PURPOSE

To propagate a safe working environment throughout TGC Structural. To assist in the detection and elimination of unsafe conditions and work procedures. Our safety committee consists of representations from employees and management.

OBJECTIVE

- To establish procedures to ensure a safe and hazard free work areas for our employees.
- Evaluate all accidents for cause and possible disciplinary action.
- Evaluate the need for additional safety training
- Improve the spirit of cooperation between employer and employee.
- Provide a channel for communication between employees and management to address safety questions or concerns.
- Monitor the safety program effectiveness and propose changes to the program as needed
- Promote and publicize safety.

PROCEDURE

- Safety Committee Meeting will be conducted on company time and employees will be paid for that time
- The committee will consist of at least four volunteer members of the workforce and management. There will be an equal or greater number of field and office employees, unless agreed upon otherwise.
- Meetings will be held monthly.
- Minutes will be maintained in the file for a period of three years.
- Copies of the minutes will be distributed to all superintendents to be posted on their bulletin board, and to all office and shop personnel.
- Once a quarter the committee will conduct a site visit and perform a safety inspection of that site.
- Quarterly inspection will count as that months committee meeting
- Safety inspections will be documented by use of form 18.1 Quarterly Safety Inspection Form

Quarterly Safety Inspection Form

Jobsite Name: _____

Jobsite Address: _____

Inspected By: _____ **Inspection Date:** _____

Check the appropriate box (S for Safe, U for Unsafe or N for Not Applicable) for each observation. All Unsafe observations require corrective action be taken. Identify the responsible contractor for correcting the unsafe observations.

	S	U	N	Comments
Program Administration				
All OSHA and required posting up?				
SDS's and hazardous chemical list posted?				
Medical service locations identified and posted?				
Are all emergency numbers been posted?				
Weekly all hands meetings held and documented?				
All safety training complete and up to date?				
Is the first aid kit present and up to date?				
Injuries, incidents, accidents and near misses investigated and tracked?				
Accident Investigation forms available?				
First Aid				
First Aid kits present and properly stocked?				
CPR / First Aid trained personnel present?				
Employee emergency data cards available?				
Emergency numbers posted?				
Housekeeping and Sanitation				
Overall neatness of the project?				
Regular disposal of trash and debris?				
Passageways, walkways and egress paths clear?				
Adequate lighting for all egress paths?				
Nails removed from wood?				
All oil or grease spots cleaned up?				
Debris containers provided and used?				
Adequate number of toilet facilities provided?				
Toilet facilities are cleaned regularly?				
Proper drinking container and cups provided?				
Adequate amount of drinking water provided?				
Disposal container for drinking cups provided?				
All landings and stairs are kept clean?				
Adequate lighting throughout?				
Adequate ventilation in the work area?				
Fire Prevention	**S**	**U**	**N**	**Comments**

Site specific fire prevention program posted?				
Adequate number of fire extinguishers present?				
Fire extinguishers been inspected each month?				
Fire hydrants active and available for use?				
No smoking allowed in the building?				
Site is easily accessible for the Fire Department?				
Overall housekeeping in generally good shape?				
Electrical				
Temp Power Cords, Extension Cords, Temp Lights Strings, in good condition?				
Temp power cords, extension cords, temp lights strings, inspected and color code for the quarter?				
GFCI provided at temp power locations?				
Exterior outlets protected by covers?				
Hot electrical panels protected?				
Hand Tools				
Proper tool for the job?				
Transported and stored properly?				
Inspected and properly maintained?				
Damaged tools taken out of service and tagged?				
Employee's tools inspected?				
Power Tools				
Good housekeeping where tools are used?				
Tools and cords in good condition?				
Tool double insulated or properly grounded?				
All guards are in place?				
Workers properly instructed on the proper use?				
Properly stored when not in use?				
Correct tool for the task at hand?				
Powder Actuated Tools				
Operators are properly trained?				
Tools and loads protected from unauthorized use?				
Tools inspected and in good condition?				
Tool used only on recommended materials?				
Safety glasses or face shields used?				
Flying material hazards addressed?				
Powder actuated tool in use sign present?				
Live and spent load strips properly handled?				
Spent load strips disposed of properly?				
Fall Protection				
Written fall protection plan in place?				
Fall protection devices available?				
Fall protection devices inspected daily?				
	S	**U**	**N**	**Comments**

Good fall protection procedures being followed?				
Guardrails are properly installed and in place?				
Falling object protection in place?				
Wall openings protected?				
Floor holes protected?				
Ladders				
Ladders inspected and in good condition?				
Properly secured from slipping, sliding or falling?				
Extended past the landing by 36”?				
Extension ladders used with a 4 to 1 ratio?				
Step Ladders fully opened?				
Step ladders not used in a leaned position?				
Properly maintained and stored?				
All labels and stickers legible?				
Scaffolding				
Erection supervised by a competent person?				
All working surfaces are fully planked?				
Cross bracing and guardrails in place?				
Components are fully compatible?				
Properly secured to the structure? (if needed)				
Working surfaces clear of all debris, material, etc.?				
Are steel feet and mudsills used?				
Fall object protection provided?				
Proper access provided?				
Means of lifting material provided?				
Daily inspections performed and documented?				
User training verified?				
Aerial Lifts				
Operators are trained?				
Operator appears competent?				
Aerial Lifts inspected daily?				
Aerial lifts are operated on a smooth, level surface?				
Operating surface free of holes?				
Scissor lift gate closed?				
Harnesses used in boomlifts				
Hoists, Cranes and Derricks				
Erection supervised by A/D Director?				
Crane has been inspected?				
Wire rope has been inspected?				
Crane annual certification on file at jobsite?				
Crane operator certification on file at jobsite?				
Work zone evaluation completed?				
Crane lift plan on file at jobsite?				
Outrigger fully extended?				
	S	**U**	**N**	**Comments**

Soil baring capacities have been checked?				
Rigging and components have been inspected?				
Qualified rigger on hand?				
Anti-Two Blocking device in place?				
Qualified signalman on hand?				
Heavy Equipment and Motor Vehicle Equipment				
Inspected and properly maintained?				
All lights, warning and signal devices in proper working order.				
Back up alarm is present and can be heard over the surrounding noise?				
Spotter in place where needed?				
Operators appear qualified?				
Glass in good condition?				
High-Vis clothing being worn in work area?				
Pinch points protected?				
Traffic control plan in place?				
Traffic control procedures are being followed?				
Barricades				
Floor openings covered or guard railed?				
Roadways and sidewalks protected?				
Adequate site lighting provided?				
Proper traffic control in place?				
Handling and Storage of Materials				
All materials are properly stored and stacked?				
Materials do not block the egress paths?				
Material not stacked too high and stacks are stable?				
Proper material handling techniques used? (Hand)				
Proper material handling techniques used? (Equip)				
Material protected from the weather?				
Excavation and Shoring				
Are adjacent structures properly supported?				
Excavations properly shored or benched?				
Proper access to the excavation?				
Surface encumbrances address?				
Material 2 feet back from edge?				
Water not allowed to accumulate in the excavation?				
Competent person present?				
Demolition				
Demolition plan in place?				
Temporary shoring or supports in place?				
Debris removal procedures adequate?				
Public protection provided?				

	S	U	N	Comments
Adequate operating space for equipment?				
Adequate access to all levels?				
Flammable Gasses and Liquids				
Fuel containers are metal safety cans or DOT approved?				
All containers are properly identified?				
Proper storage procedures in place?				
Fire extinguisher present at storage locations?				
Fire extinguisher present at fueling operations?				
Cylinders stored in upright, capped and secured?				
Types of gas cylinders are properly separated?				
Welding and Cutting				
Are all welders certified?				
Screens and/or shields in place?				
Proper PPE being worn?				
Equipment in good condition?				
Hoses, gauges, torches, etc. in good condition?				
Welding leads in good condition?				
Equipment grounded?				
Task fire extinguisher present?				
Hot work permit present?				
Fire watch required?				
PPE				
Respirators, cartridges, and pre-filters appropriate?				
Extra cartridges, pre-filters, respirators and spare parts available?				
Positive and negative check performed before use?				
Eye protection available and in use?				
Face shields available and in use?				
Eye wash station present?				
Hard hats available and in use?				
Hearing protection available and in use?				
Hand protection available?				
Proper clothing in use?				
Hi-Vis clothing in use				
Proper work boots worn?				

TGC Structural (TGCS) is concerned about the health and wellbeing of its employees. In the event an employee suffers a job related illness or injury and is unable to perform their regular job duties, TGCS wants to assist the employee in obtaining the best treatment and returning to their regular duties as soon as possible. The following program has been prepared to help the employee understand the procedures to follow for providing us with the information needed to assist the employee in returning to work as quickly as possible.
Studies shows that return to work programs are therapeutic and help speed the recovery process. In addition, injured employees stay "in touch" with the work environment and with fellow employees, which helps to facilitate a smooth and speedy transition back to their normal job. This also creates an opportunity for cross training and developing new skills.

Everybody "wins" with this type of program. The company wins by retaining the use of valuable trained employees while at the same time minimizing workers' compensation and other costs. Employees win by returning to their regular job and income sooner, and by avoiding the negative effects of a long-term absence.

Purpose and Intent

- In order to minimize serious disability due to on-the-job injuries or illnesses and to reduce workers' compensation costs, TGCS has developed procedures to deal with injuries/illnesses in which the worker can be offered light duty or modified work, temporarily
- Light duty jobs will be identified after obtaining and examining the injured worker's physical limitations of restrictions. "Light duty" might be the worker's regular job, modified by removing heavier tasks and reassigning these to other workers; a different regular job currently existing at the workplace, or a job that is specifically designed around the worker's restrictions
- A light duty job offer will be made only when the work is available. The light duty job, if offered, will end with the date the worker received a regular release, and may be ended at any time if there is no longer a need for the light duty work. Each case will be assessed individually based on need
- On-the-job injuries and occupational diseases will be handled by a team consisting of the injured worker, his or her supervisor, the safety department, the company owners, the insurance company, and the injured workers physician. The team approach is the most effective method for achieving a return to productive work at the earliest opportunity. Responsibilities of the injured worker, the supervisor, and the safety department are outlined in the following pages

Employee's Responsibilities

- When an employee has an on-the-job injury, or illness, it must be reported immediately to a supervisor/foreman. Failure to do so could result in your claim being delayed or denied
- If an injury requires treatment at a medical facility, the employee will be required to fill out an 801 Form as soon as possible after the incident
- **You** must inform your physician that there are modified/light-duty jobs available, and provide him with a Work Release and Physical Capacity Form for each separate doctor's visit
- Work Release and Physical Capacity Form with you to the first and all subsequent medical visits.
    - Tell the doctor the company may be able to place you in a temporary modified job if you cannot return to regular work
    - Return form completed by the doctor to your supervisor or to the office the same day, or the next scheduled business day
- You cannot return to work without a release from your doctor
- If you are unable to report for any kind of work, you must call in every Monday, between the hours of 7:30 a.m. and 9:30 a.m. (unless otherwise arranged) to your superintendent or other designated person to report your status
- If you are unable to bring in the information, you should call your supervisor/foreman and then mail in the written information

- It is also your responsibility to supply your supervisor/foreman with your current telephone number (unlisted or not) and an address where you can be reached
- If an appropriate light duty job is developed, whether it is a modified version of your regular job or another light duty job, you must report for work at the time designated by the company
- If you return to a light duty job, you must make sure that you do not go beyond either the duties of the job or your physician's restrictions
    - If your restrictions change at any time, you must notify your supervisor at once and give your supervisor a copy of the new medical release at which time the light/modified duties may be changed to be consistent with your current restrictions
- If you see a Doctor or Emergency facility after hours or on a weekend for a work related injury, you must notify your Supervisor of this fact and the nature of the injury and any restrictions on the next scheduled business day
- Employee must understand that refusal of a light duty job offer may impact the workers worker compensation benefits

Superintendent/Foreman Responsibilities

- Provide Employees with the proper forms
    - 801 Form located in Section A9 document A9.3
    - Work Release and Physical Capacity Form located in Section A9 document A9.5
    - Early Return to Work Employee Instruction Form located at the end of this section, document A19.1
- Assure the employee understands and follows his/her responsibilities as listed above and on Form A19.1
- Work with the safety department and employee to determine what light duty jobs are available that will meet the restrictions specified by the treating physician
- Verify that the employee does not go beyond either the duties of the job or the physician's restrictions

Safety Department's Responsibilities

- Assist the superintendent/foreman in determining available light duty work that will meet the restrictions set by the treating physician
- Track all the paperwork and forms required for this program

TGC Structural (TGCS) has developed a program for its' employees designed to assist workers who are **temporarily** disabled due to an on the job illness or injury. This program is called the "Early Return to Work Program." This includes a team effort, including disabled workers, their attending physician, the insurance carrier, and project management.

When employees report illnesses or injuries, they will be given certain forms and may be sent to a doctor for examination and/or treatment. A separate Work Release and Physical Capacity Form must be completed for each separate doctor visit to help us ensure the greatest degree of health and safety. If the doctor determines that the employee qualifies for our Early Return to Work Program, the doctor will complete the appropriate forms indicating the restrictions and conditions for transitional work. **We will then attempt to provide a modified work position until the employee is able to resume full duties**. All modified work is temporary in nature and is designed to facilitate a return to full duties as soon as possible. Modified work positions may be offered at any project, and/or any shift. Modified work positions can also be offered on a varied schedule.

Failure to report for work at the designated time and place will be regarded as a voluntary resignation and could affect your time loss compensation and/or reemployment/reinstatement rights.

This is not designed as a substitute for reasonable accommodation under any applicable federal and/or state regulations, such as the Americans with Disabilities Act, The Rehabilitation Act 1973 or other applicable laws.

To preserve the ability to meet company needs under changing conditions, we reserve the right to revoke, change or supplement these guidelines at any time with or without written notice. No permanent employment for any term is intended or can be implied by this policy. But, while in effect, all doctor recommended restrictions will be followed. The site management and the claims manager, on a two-week basis or after a doctor's visit, will review with the worker the availability of continued modified work.

The policies and procedures in this program are not intended to be contractual commitments and they shall not be construed as such. This policy is not intended as a guarantee of continuity of benefits or rights.

Studies shows that return to work programs are therapeutic and help speed the recovery process. In addition, injured employees stay "in touch" with the work environment and with fellow employees, which helps to facilitate a smooth and speedy transition back to their normal job. This also creates an opportunity for cross training and developing new skills.

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- If you see a Doctor or Emergency facility after hours or on a weekend for a work related injury, you must notify your Supervisor of this fact and the nature of the injury and any restrictions on the next scheduled business day

Employee must understand that refusal of a light duty job offer may impact the workers worker compensation benefits.

I have read and fully understand all of the above procedures, and know my responsibilities. I understand that failure to complete my responsibilities as stated above may result in disciplinary action up to and including termination from my job and/or loss of my right to re-employment or reinstatement following injury. I have received a copy of this information.

Employee's Signature Date

This Form is for TGC Structural Employees Only

Date: _____ **Send Certified Mail, Receipt Requested or Fill Out In Person**
Injured Workers Name: _____
Street Address: _____
City, State, Zip _____
RE: Claim Number: _____ **Date of Injury:** _____

Dear: _____ *(Employees Name)*

Your doctor released you for temporary alternate/modified duty work and has agreed that you are physically able to commute to modified work. Attached is a copy of the Physician-approved Job Analysis. We are offering you a temporary alternate/modified duty job, as described below. Unless otherwise stated, the duration of the job is unknown.

Job Title: _____ **Start Time:** _
Start Date: _____ **Hours per Day:** _
Wage: _____ **Hours per Week:** _
Where to Report/ Location of Work: **Report to Whom:** _
Address: _____

Description of Job Duties: (see Physician-approved Work Release and Physical Capacity Form)

While on temporary alternate/modified duty work, your workers' compensation benefits may be offset by your wages. If you choose not to accept this job offer or do not report to work as specified, your workers' compensation benefits may be adversely affected. Under Oregon law, you have the right to refuse an offer of employment without termination or reduction of temporary total disability benefits if any of the following conditions apply:

a. The offer is at a site more than 50 miles from where you were injured, unless the work site is less than 50 miles from your residence, or your intent and the intent of the employer at the time of hire or as established by the employment pattern prior to your injury was that the job involved multiple or mobile work sites and the worker could be assigned to any such site. Examples of such sites include, but are not limited to logging, trucking, construction workers and temporary employees;
b. The offer is not with the employer at injury;
c. The offer is not at a work site of the employer at injury;
d. The offer is not consistent with existing written shift change policy or common practice of the employer at injury or aggravation; or
e. The offer is not consistent with an existing shift change provision of an applicable union contract.

If you refuse this offer of work for any of the reasons listed above, you must write to your insurer or employer and tell them your reason(s) for refusing the job to keep your temporary total disability from being reduced or stopped. If the insurer disagrees and reduces or stops your temporary total disability, you have the right to request a hearing.

Sincerely, _____
Title: _____ **Date:** _

I have read the above job offer and accept / decline the job as offered. *(Circle response)*

Employee's Signature and Date Witness Signature and Date

TGC Structural (TGCS) has a ZERO tolerance policy.

Illegal drugs and alcohol of any kind are not allowed on TGCS's project sites. This includes the project worksite, trailers, parking lots and personal vehicles. Anyone found in possession of illegal drugs and/or alcohol on the project site is subject to termination.

This policy is non-discriminatory and applies to all TGCS employees, contractors, subcontractors, owner's sub-contractors and construction managers, and any others working on a TGCS project.

Individuals under the influence of drugs or alcohol on the job pose serious safety and health risks not only to the user, but also to all those who surround or come in contact with the user. Therefore, TGCS asks for your full cooperation and support in implementing this policy.

OR-OSHA and OSHA Jurisdictions

TGC Structural (TGCS) recognizes the importance of proper sanitation on the project sites. This program is designed to meet the needs of proper sanitation on our projects.

Potable Water

- Each employer shall have an adequate supply of potable drinking water for their crews.
- Portable containers used to dispense drinking water shall be capable of being tightly closed and equipped with a tap
- Water shall not be dipped from the container
- Any container used to distribute drinking water shall be clearly marked as to the nature of its contents and not used for any other purpose
- Water containers shall be:
    - Constructed of materials that maintain water quality
    - Refilled daily or more often as necessary
    - Kept covered at all times
    - Cleaned at least once a week or more often if conditions require
- Common drinking cups are prohibited
- Where single service cups (to be used but once) are supplied, both a sanitary container for the unused cups and a receptacle for disposing of the used cups shall be provided
- Potable water means water which meets the quality standards prescribed in the U.S. Public Health Service Drinking Water Standards, published in 42 CFR part 72, or water which is approved for drinking purposes by the State or local authority having jurisdiction

Non-potable water

- Outlets for non-potable water, such as water for industrial or firefighting purposes only, shall be identified by signs to indicate clearly that the water is unsafe and is not to be used for drinking, washing or cooking purposes
- There shall be no cross-connection, open or potential, between a system furnishing potable water and a system furnishing non-potable water

Toilets

- Toilets shall be provided for employees according to the following table:

Number of employees	Minimum number of facilities
20 or less	1
20 or more	1 toilet seat and 1 urinal per 40 workers
200 or more	1 toilet seat and 1 urinal per 50 workers

- Under temporary field conditions, provisions shall be made to assure not less than one toilet facility is available
- At the site of every project with an estimated cost of $1,000,000 or more the following will be enforced
    - Provide flush toilet facilities in accordance with the table above. (all required toilets based on the table must be the flushing type)
    - Where flush toilets are required a chemical toilet will be considered a urinal
    - Washing facilities which include wash basins, warm water and soap
- Toilets and toilet area shall be maintained in good repair and in a clean and sanitary condition
- At locations where women will be using the toilets a lockable toilet will be made available for them

DOSH Jurisdiction

In addition to the above program, projects in the Washington DOSH Jurisdiction shall comply with the following.

Wash Water

- Clean, tepid wash water, between 70 and 100 degrees Fahrenheit, shall be provided at all construction sites
- Individual hand towels shall be provided
- Both a sanitary container for the unused towels and a receptacle for disposal of used towels shall be provided
- Hand soap, industrial hand cleaner or similar cleansing agents shall be provided
- Cleansing agents shall be adequate to remove any paints, coatings, herbicides, insecticides or other contaminants
- Gasoline or solvents shall not be used for personal cleaning
- Wash water areas will be maintained in a dry condition
- Slipping or other hazards shall be eliminated from the wash water area before it is acceptable for use

Toilets

- Where chemical toilets are used the following table shall apply:

Number of Employees	Number of toilets required
1 – 10	1
11 – 25	2
26 – 40	3
41 – 60	4
61 – 80	5
81 and Over	1 additional toilet for each 20 workers or fraction there of

- Where only flush toilets are used the following table shall apply

Number of Employees	Number of toilets required
1 – 15	1
16 – 35	2
46 – 55	3
56 – 80	4
81 - 110	5
111 – 150	6
151 and Over	1 additional toilet for each additional 40 employees

- When the employer provides both flush and portable chemical toilets, the number of employees allowed to be served will be required to meet the chemical toilet table
- Internal latches shall be provided to secure the units from inadvertent entry
- Where there are twenty or more employees consisting of both sexes, facilities shall be provided for each sex
- Each unit shall be properly cleaned on a routine basis
- Chemicals, toilet tissue and sanitary seat covers shall be maintained in a supply sufficient for use
- Any defective or inadequate unit shall be immediately removed from service
- The following specifications apply:
    - A noncaustic chemical toilet (portable chemical toilet) is a self-contained unit equipped with a waste receiving chemical holding container

  - Portable chemical toilets consisting of only a holding tank, commonly referred to as "elevator units" or "elevator toilets" are not acceptable
  - "Elevator units" may be used if they are individually located in a lockable room which affords privacy
  - When this type unit is used in a private individual lockable room the entire room will be considered a toilet facility, as such the room will meet all requirements of toilet facilities
  - Rooms, buildings or shelters housing toilets shall be of sound construction, easy to clean, provide shelter and provide privacy
  - The toilet rooms shall be ventilated to the outside and adequately lighted. All openings into the toilet room shall be covered with 16-mesh screen
- Toilets shall be serviced on a regular schedule
- Toilets shall be inspected daily
- On multistory structures they shall be furnished on every third floor

This program will apply to all TGC Structural (TGCS) employees or subcontractor employees who could be "reasonably anticipated", as a result of performing their job duties, to come in contact with blood and other potentially infectious bodily fluids. Employees trained and certified in First Aid and CPR who might be "reasonably anticipated" to come in contact with bodily fluids also must follow the rules and regulations set forth in this program.

Procedures

- When dealing with blood or other bodily fluids, employees and/or subcontractor employees are required to follow universally accepted precautions
- Accordingly, all human blood and other human body fluids are treated as if known to be infectious for HIV, Hepatitis B, and other blood-borne pathogens
- All jobsite and offices are required to make available to employees who may reasonably anticipate coming in contact with bodily fluids with disposable latex gloves and one-way resuscitation masks
- All certified First Aid providers are required to wear disposable latex gloves and eye protection while performing first aid on an injured individual
- If rescue breathing or CPR is performed, a one-way resuscitation mask shall be provided for the protection of the injured and the provider
- All blood spills shall be immediately contained and cleaned with an anti-viral solution, or by a solution of 5:1 water to bleach
- In the event of a serious accident, TGCS should consider contracting with an outside hazmat firm
- Any material saturated with blood must be considered regulated waste
- This means liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; and items that are caked with dried blood or other potentially infectious materials
- Discarded band-aids and gauze containing small amounts of blood products are not considered regulated waste
- Disposal of all regulated waste shall be the responsibility of emergency medical personnel

At least one TGCS jobsite person shall be trained in First Aid and CPR, and they also shall be trained in the decontamination of blood spills. All individuals are encouraged to attend training in emergency first aid procedures at each jobsite.

TGC Structural (TGCS) has determined that, due to the nature of the construction industry, our employees may at times be exposed to respiratory hazards during the course of their work. These hazards may include lack of sufficient breathable oxygen, and/or the presence of wood dust, and other particulates and vapors (the hazards). The purpose of this program is to ensure that all employees are aware of such hazards, the necessity and procedures for protecting themselves from such hazards, and of remedial health measures to take if they are exposed to such hazards.

Scope and Application

- This program applies to all employees who may come into contact with the hazards
- Any employees required to wear respirators must be enrolled in the company's respiratory protection program
- To be enrolled requires a questionnaire, medical evaluation, fit test for the respirator and training
- Employees who voluntarily wear filtering face pieces (dust masks) are not subject to the questionnaire, medical evaluation, cleaning, storage, and maintenance provisions of this program
- Employees participating in the respiratory protection program do so at no cost to them
- The expense associated with training, medical evaluations, fit testing and respiratory protection equipment will be borne by the company
- Each employee will be assigned a personal respirator
- At no time will employees share the use of a respirator

Responsibilities

- Program Administrator: Duties of the program administrator include:
  - Selection of respiratory protection options
  - Monitoring respirator use by employees in accordance with their certifications
  - Arranging for and/or conducting training
  - Ensuring proper storage and maintenance of respiratory protection equipment
  - Conducting or have conducted qualitative fit testing
  - Administering the medical surveillance program
  - Maintaining records required by the program
  - Evaluating the program
  - Updating written program, as needed
- Supervisors: Duties of the Jobsite Superintendent include:
  - Identifying work areas, or tasks that require workers to wear respirators, and evaluating hazards
  - Ensuring employees under their supervision, required to wear a respirator, are enrolled in the company's respiratory program and have received appropriate training, fit testing, and medical evaluation
  - Ensuring the availability of appropriate respirators and accessories
  - Being aware of tasks requiring the use of respiratory protection
  - Enforcing respirators are properly cleaned, maintained, and stored according to the respiratory protection plan
  - Ensuring that respirators fit well and do not cause discomfort
  - Continually monitoring work areas and operations to identify respiratory hazards
  - Coordinating with the Program Administrator on how to address respiratory hazards or other concerns regarding the program
- Employees: Duties of the employee:
  - Care for and maintain their respirators as instructed, and store them in a clean sanitary location
  - Inform their supervisor if the respirator no longer fits well, and request a new one that fits properly

- Inform their supervisor or the Program Administrator of any respiratory hazard that they feel is not adequately addressed in the workplace and any other concerns they have regarding the program

Selection Procedures:

- The Program Administrator will select respirators to be used on site, based on the hazards to which workers may be exposed and in accordance with all OR OSHA standards
- The Program Administrator will conduct a hazard evaluation for each operation, or work area where airborne contaminants may be present in excess
- The hazard evaluation will include:
  - Identification and development of a list of hazardous substances used in the workplace
  - Review work processes to determine where potential exposure to these hazardous substances may occur
  - Exposure monitoring to quantify air contaminants.
    - Monitoring will be contracted out

Updating the Hazard Assessment:

- The Program Administrator must revise and update the hazard assessment as needed
- If an employee believes respiratory protection is necessary, he/she is to contact the supervisor or the Program Administrator
- The Program Administrator will evaluate the potential hazard and communicate the result to all employees

Medical Evaluation

- Employees who are required to wear respirators must pass a medical exam before using a respirator on the job
- The Program Administrator will select a medical facility to conduct the medical evaluations
- The medical evaluation procedure is as follows:
  - The Program Administrator will set up the appointment with a Physician or other Licensed Health Care Professional (PLHCP) facility for the employees
  - At the time the Program Administrator sets up the appointment he will inform the PLHCP facility of the of potential respiratory hazards and the working conditions the workers will be exposed to
  - The PLHCP facility will provide the questionnaire for the employee to fill out
  - Based on the answers of the questionnaire the PLHCP facility will determine if additional exams or tests are required to determine if the employee is able to wear a respiratory
  - The PLHCP facility will then provide the respirator fit testing for the employee
  - After an employee has received clearance and begun to wear his/her respirator, additional medical evaluations will be provided if the employee reports shortness of breath, dizziness, chest pains, or wheezing
  - All examinations and questionnaires are to remain confidential between the employee and the physician

Fit Testing

All Employees who are required to wear half-face piece or full-face APR's will be fit tested as follows:

- The PLHCP facility will provide the respirator fit testing for the employee after the employee passes the medical evaluation
- Fit testing shall be completed:
  - Prior to being allowed to wear any respirator with a tightly fitting face piece
  - Annually

- When there are changes in the employee's physical condition such as loss/gain of weight, beards, or facial scarring, etc

Respirator Use

- Respiratory protection is required in the following situations:
  - When required by SDS
  - When air particles are greater than tolerance levels
  - When employee requests

Respirator Cleaning

- Respirators are to be cleaned after each use as follows:
  - Remove the filters, canisters, or cartridges
  - Hose off any visible dust or debris
  - Use non-alcohol cleaning wipes of the surface that touches the face
  - Dry the respirator completely before storage
- Respirators are to be regularly cleaned and disinfected as follows:
  - Disassemble respirator, removing any filters, canisters, or cartridges
  - Wash the face piece and associated parts in a mild detergent with warm water. Do not use organic solvents
  - Rinse completely in clean warm water
  - Wipe the respirator with disinfectant wipes to kill germs
  - Air dry in a clean area
  - Reassemble the respirator and replace any defective parts

Maintenance

- The following checklist will be used when inspecting respirators:
  - Face piece – Cracks, tears, or holes, facemask distortion, and cracked or loose lenses/face shield
  - Head straps – Breaks or tears, broken buckles, and loss of elasticity
  - Valves – Residue or dirt, and cracks or tears in valve material
  - Filters/Cartridges – Approval designation, gaskets, cracks or dents in housing, and proper cartridge for hazard

Change Schedule

- Employees shall change the cartridges on their respirators when they first begin to experience difficulty breathing while wearing their masks, or at the end of each work week to ensure the continued effectiveness of the respirators

Storage

- Respirators shall be stored separately from used filters, canisters, or cartridges to prevent contamination of the storage devise and respirator
- Respirators must be stored in a clean, dry area, out of direct sunlight and in accordance with the manufacturer's recommendations
- Each employee will clean and inspect their respirator in accordance with this program

Training

- The Program Administrator will provide training to respirator users and their supervisors on the contents of the Respiratory Protection Program and their responsibilities under it
- Workers will be trained prior to using a respirator in the workplace
- Supervisors will also be trained prior to using a respirator in the workplace, or prior to supervising employees that must wear respirators

- The training course will cover the following topics:
    - The Respiratory Protection Program
    - Respiratory hazards encountered by employees
    - Proper use of respirators
    - Limitations of respirators
    - Fit checks
    - Emergency procedures
    - Maintenance and storage
    - Medical signs/symptoms limiting the effective use of respirators
- Employees will be retrained at least annually or as needed
- Employees must demonstrate their understanding of the topics covered in the training through hands-on exercises and written test
- Respirator training will be documented by the Program Administrator and the documentation will include the type, model, and size of respirator for which each employee has been trained and fit tested

Documentation and Recordkeeping

- A written copy of this program and the OR OSHA standard is kept with the Program Administrator, and is available to all employees who wish to review it
- The Program Administrator will retain copies of the employee's medical determination document from the PLHCP, training and fit test records
    - These records will be updated as new employees are trained, as existing employees receive refresher training, and as new fit tests are conducted
- The completed medical questionnaire and the physicians documented findings are confidential and will remain at the PLHCP Facility

TGC Structural (TGCS) recognizes that excessive noise can cause permanent hearing loss if appropriate engineering, administrative controls or personal protective equipment is not used. Limiting exposure to excessive noise through engineering controls is TGCS's preferred method of control.

PERMISSIBLE NOISE EXPOSURES	
Duration per day, hours	Sound level dBA, slow response
8	90
6	92
4	95
3	97
2	100
1 ½	102
1	105
½	110
¼ or less	115

Procedures

- Protection against the effects of noise exposure must be provided when the noise levels exceed those shown in the table above
- The measurement must be observed on the A-scale of a sound level meter at slow response
- When employees are subjected to noise levels exceeding those shown above, feasible engineering or administrative controls must be utilized
- If such controls fail to reduce sound levels within the levels shown above, personal protective equipment must be provided and used to reduce the noise exposure
- In all cases where the noise levels exceed the values shown in the table above, a continuing, effective hearing conservation program must be administered

During the planning process of the construction project involving a hospital or medical facility, it is important to remember that a hospital is an occupied critical care facility whose primary function is that of patient care. A construction project can be intrusive to medically fragile patients. All construction projects have the potential to impact infection control in patient areas. Construction, demolition and remodeling activities in hospitals have been linked to an increase in certain nosocomial infections in immuno-compromised patients.

The purpose of this policy is to minimize the potential acquisition of nosocomial infection in patients during hospital construction activities.

Procedures

- The following are highlights of TGC Structural (TGCS) Infection Control Construction Policy
  - Planning Phase
    - Number and placement of isolation rooms
    - Air handling systems
    - Number and placement of hand washing facilities
    - Staff and patient traffic patterns for the duration of the project
    - Relocation decisions regarding patient care areas, storage areas, etc.
    - Water supply and plumbing
    - Waste containment, transport and disposal
    - Selection of finishes and surfaces that can be effectively cleaned in clinical areas
    - Accommodation of personal protective equipment
    - Storage of moveable modular equipment
  - Operational Phase
    - Medical waste removal
    - Integrity of barrier walls
    - Environmental control
    - Traffic control
    - Cleaning
    - Contractor personnel requirements
    - Environmental monitoring
    - Policy implementation
  - Completion Phase
    - Ventilation specifications
    - Disinfection procedures
    - Water line flushing
    - Water line disinfection
  - Compliance Monitoring
    - Air handling
    - Integrity of barrier walls
    - Dress code
    - Environmental control
    - Noise
    - Traffic control
    - Water supply
- Roles and Responsibilities
  - TGCS Management:
    - Shall hold an infection control specific pre-planning meeting with the owner and affected subcontractors prior to all work that requires an infection control plan
    - Shall conduct inspections of the workplace for compliance with policy
    - Shall cover policy applications during project orientation with subcontractors

- Subcontractor Management:
  - Shall comply with and furnish materials necessary to comply with TGCS policy
  - Shall attend relevant pre-planning meetings, project orientation, and fully participate in the Job Hazard Analysis program

The TGC Structural (TGCS) Project Superintendent will coordinate with the Safety Department to ensure that this policy is properly implemented.

In the course of renovation and demolition, workers may encounter lead containing or lead based paint. Lead is a poison, and exposure to lead containing or lead based paint could be hazardous to your health. In order to mitigate these problems, the following procedures have been developed.

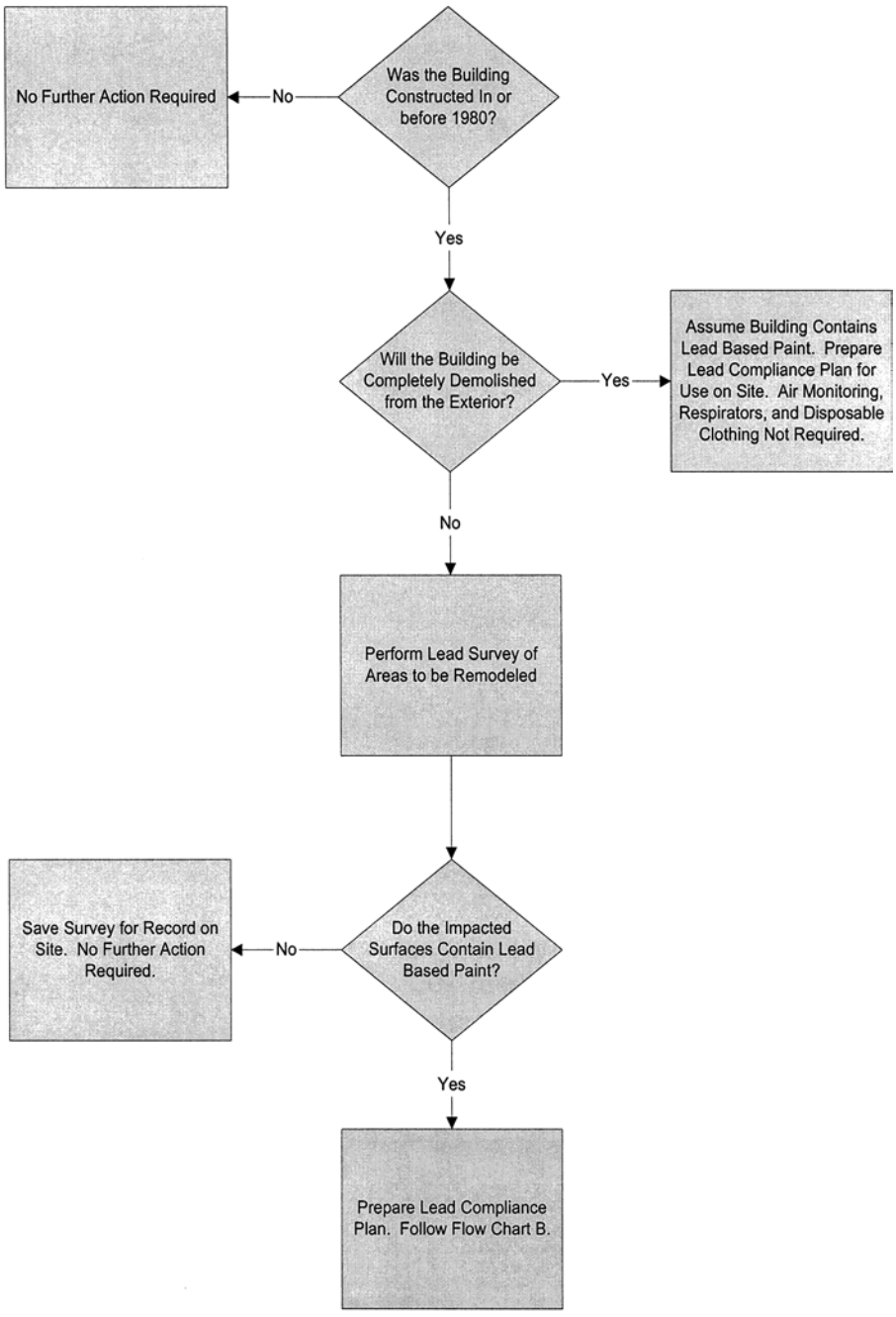
General Requirements

- Prior to the renovation or demolition of any building, a lead paint survey from a certified technician must be provided
  - Buildings built after 1980 are assumed to be free from lead containing or lead based paint, and do not require a survey
  - Only the areas of the building that are being renovated or demolished need to be surveyed
  - The results of this survey must be kept on the jobsite for the duration of the renovation or demolition
- If lead containing or lead based paint is discovered by the certified technician, the following procedures must be followed
  - Develop a lead compliance plan:
    - A sample plan is attached
    - Plan must be project specific
    - Plan must be kept on site
  - Have an on-site lead competent person:
    - Person will be the jobsite superintendent
    - Person must have received lead competence training
  - All employees working on the project will be required to have lead awareness training
  - Employees working on tasks that disturb the lead must be respirator trained
    - Contact your Safety Department to arrange training
  - Provide a hepa-filtered vacuum at the jobsite
  - Provide hand washing facilities at the jobsite
  - Sign the project as required in the lead compliance program
  - Set up containment for the work area (if needed)
  - Perform a Negative Exposure Assessment for each different task that will impact the lead containing or based paint
  - During the Negative Exposure Assessment all employees working on the tasks shall be provided with and required to wear:
    - Tyvek suits
    - Respirators
  - If the Negative Exposure Assessment indicates there is no exposure above the permissible exposure limit for an 8 hour TWA, then the use of the Tyvek suits and respirators becomes optional
  - If above the permissible exposure level, modify the task or the procedures for the task and retest
  - Never work on a task that is above the permissible exposure level
  - Record the tasks and results in the written lead compliance plan
  - Dispose of debris that contains lead based paint only in approved landfill
  - It is intended that the written lead compliance program shall be used by subcontractors as well
  - Subcontractors will follow the written lead compliance program
  - Air monitoring will be required for each of their tasks that disturb the lead containing or lead based paint
- Work to minimize the exposure of adjacent facilities to debris that contains lead containing or lead based paint
  - Consider utilizing temporary barriers to protect adjacent people and spaces

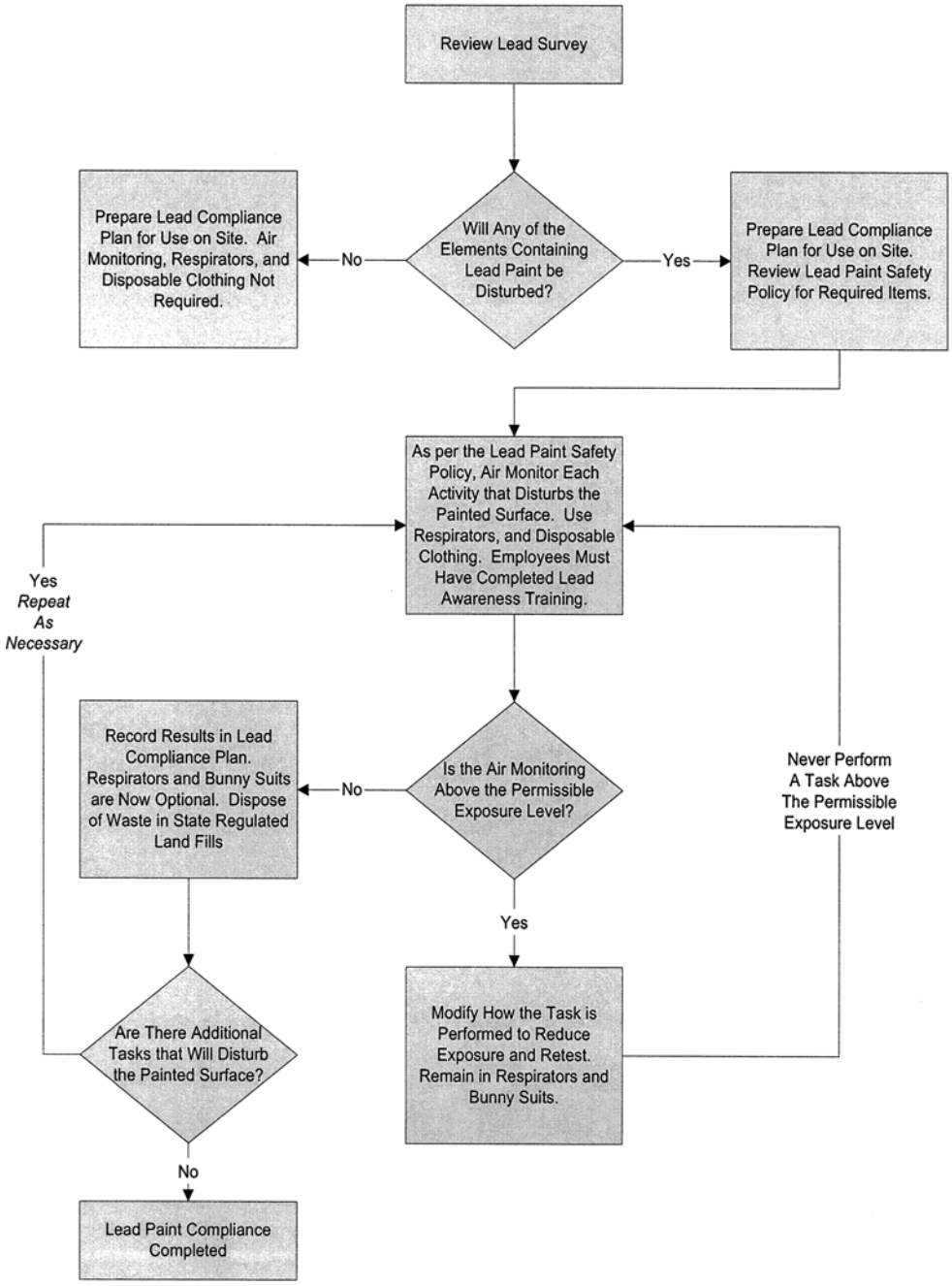
  - Consider utilizing air moving equipment to exhaust air from the contaminated area
- Free-Air (whole building) demolitions done entirely from the exterior with a back-hoe or similar equipment will not require to develop a lead compliance plan but will be required to follow approved lead demolition procedures (as an example hosing down the building at the location the backhoe is working)

A copy of this policy shall be made available to all employees and concerned parties.

Lead Based Paint Compliance
Flow Chart A - Lead Paint Discovery
To Be Completed on Every Remodel/Demolition Project



Lead Based Paint Compliance
Flow Chart B - Lead Compliance Plan
To Be Completed on Projects Qualified in Flow Chart A



TGC Structural

Lead Compliance and Control Plan
For Exposure to Lead During Construction Activities

1.0 Introduction

This Lead Compliance and Control Plan (the Plan) provides TGC Structural (TGCS) personnel and subcontractors with worker protection procedures and dust control procedures for operations with the potential for exposure to lead at or above the OSHA action level of 30 µg/m^3. This Plan seeks to minimize the foreseeable hazards of exposure to lead contaminated dust from retrofit operations to construction personnel and other subcontractors. This Plan includes requirements for engineering controls, work practices, personal protective equipment, respirators, air monitoring and dust, fume and mist controls for protection from exposure to lead.

The requirements of this Plan shall apply wherever the potential for employee exposure to lead above the action level of 30 µg/m^3 exists.

It is also the intent of this Plan to provide guidance to TGCS for complying with the regulatory requirements of 29 CFR 1926.62 and OAR 437 1926.62.

2.0 Scope of Work

2.1 Work Activities

Bulk paint samples were taken from the project by ***(Name Lead Consulting Firm)***. These samples indicated the presence of Lead in the paint found on the ***Name Specific Location in the Building*** in ***(Name City)*** Oregon.

The following employees are involved with the lead program: ***(Name the Employees specifically working with the lead materials.)***

This plan includes but is not limited to potential lead exposure associated with the following operations where lead, lead containing coatings, or paint are present:

- ***(Name Specific activities that will impact the lead containing materials)***
- ***(Name Specific activities that will impact the lead containing materials)***

3.0 Site Personnel

No one is allowed in the demarcated area without the approval of the Safety Department and/or ***(Name Superintendent)***. All persons entering the demarcated area are required to participate in the TGCS's Lead Awareness training and Respirator training and to comply with all sections of this Plan.

3.1 On-Site Safety Supervisor

The On-Site Safety /Lead Competent Person shall be designated by TGCS and shall have the authority to immediately halt work during the exposure assessment phase if the provisions of this Plan are not met. The On-site Safety Person is ***(Name Superintendent)***. The On-Site Safety Person shall be required to perform the following duties:

- Establish regulated areas by posting appropriate signs and other necessary measures
- Review medical records and training for lead awareness and respirator fit testing
- Notify the Owner immediately of exposure to lead at or above the action level of 30 µg/m^3 of air outside the demarcated area

- Inspect work operations on a frequent basis to ensure compliance

- Record any illness, disease, injury, pulmonary disorder, or death of any person on site
- Ensure only authorized employees enter the demarcated area
- Supervise or perform all air monitoring required by this Plan
- Ensure that employees working within the demarcated area wear protective clothing and respirators as required by applicable regulations and this Plan
- Ensure that employees use the hygiene facilities and observe the decontamination procedures specified in this Plan
- Ensure containment, local exhaust with HEPA filtration and work area is maintained by following the lead plan

3.2 Emergency Procedures - Project Shut-Down

The On-site Safety Person shall immediately halt work on the project under any of the following conditions:

- Release of visible emissions from the contamination control boundaries. Visible emissions include potentially contaminated water, dust, fumes, or mist
- Breech of the contamination control system which could potentially lead to contamination release
- Improper handling of waste generated by the project which is either designated as hazardous or pending analysis
- Any other conditions the On-site Safety Person identifies as having the potential to release contamination beyond the contamination control boundary

Upon halting the work, the On-site Safety Person shall direct project personnel to immediately correct the deficiency and document the event in writing. The project may recommence only after written approval of the On-site Safety Person that he or she has visually inspected and approved correction of the deficiency.

3.3 Site Workers

Site workers will be required to perform the following duties:

- Attend all job-related training
- Read and follow this Plan
- Participate with biological monitoring and respirator program as needed
- Check all personal safety equipment daily to ensure it is in good working condition
- Immediately report any accidents, illness, spills, unsafe conditions, near misses and any unusual smells to the On-site Safety Person

4.0 Worker Protection

Section 4.0 applies to all employees who will be entering the demarcated areas (see Section 4.1) and is intended to meet all requirements of OSHA 29 CFR 1926.62 and OAR 437 1926.62.

4.1 Establishment of the Demarcated Work Area

This Section describes the requirements for demarcating work areas where the potential for lead exposure exists and access to those areas.

4.1.1 Demarcation

Although lead warning signs are not required until the OSHA permissible exposure limit of 50 $\mu g/m^3$ is exceeded, the work area shall be clearly demarcated with warning signs denoting the potential danger of lead at designated entrances to the demarcated area. At a minimum, the signs shall meet the requirements of 29 CFR 1926.62 (m), and shall read as follows:

WARNING
LEAD WORK AREA

POISON
NO SMOKING OR EATING

4.1.2 Access to Demarcated Area

During the exposure assessment phase of the project (see Section 6.0), no employee shall be allowed to enter the demarcated area of the project without complying with the provisions outlined in Section 4.0 and 6.0. If the exposure assessment determines exposures to be below the action level and the PEL, other personnel will be allowed to enter the demarcated area. However, access will be limited to those personnel with work duties that require them to be present in the demarcated area.

While within the demarcated area all eating, drinking, smoking, chewing gum or tobacco, and applying of cosmetics shall be strictly prohibited.

All persons entering the demarcated shall sign the sign in log upon entry and the sign out log upon exit (see Appendix D).

5.0 Waste

TGCS is considered the generator of the hazardous waste for this project and TGCS will be responsible for implementing the following requirements.

5.1 Sampling and Testing of Debris

Testing of samples of bulk samples was done by: ***(Name the testing lab who will be performing the tests)***

5.1.1 Sample Procedure

(Give bulk sample results here).

All selective waste will be placed in sealed hefty bags and disposed of properly. Selective waste includes:

- Paint chips
- Dust from HEPA filters and damp sweeping
- Plastic sheets, duct tape, or tape used to cover floors and other services during the demolition and renovation work
- Rags, sponges, mops, HEPA filters, respirator cartridges, scrapers, and other materials used for testing, abatement and cleanup
- Disposable work clothes and respirator filters
- Any other items contaminated with lead

5.1.2 Hazardous Waste

If the tests of the debris in Section 5.1.1 show the waste to be hazardous, the following requirements shall apply:

- TGCS shall pay strict attention to the requirements of 40 CFR 262 and 40 CFR 265 for the on-site handling of debris
- Paint debris (paint chips) will be prevented from accumulating on the ground by using a HEPA vacuum filtration system in the work area to eliminate dispersion of the debris

6.0 Exposure Assessment

This Section outlines the requirements for assessing if the work operations listed in this Plan will result in an employee exposure to lead at or above the action level.

For each workplace or work operation listed in this Plan it shall be initially determined if any employee may be exposed to lead at or above the action level through the use of air monitoring as outlined in

Section 6.0. Personal samples shall be representative of a full shift including at least one sample for each job classification in each work area listed in this Plan.

6.1 Protection of employees during exposure assessment

6.1.1 Personal Protective Clothing and Equipment During Exposure Assessment

The following table is a summary of the personal protective clothing and respirator required for each operation during interim exposure assessment. For a more complete description of the required personal protective clothing and respirators, refer to section 4.0 (Worker Protection).

(List all tasks or operations, PPE required and minimum respirator required for each task. See examples below. Note: Examples must be removed when filling this section out)

Operation	Personal Protective Equipment	Minimum Respirator
Trim Removal	*Safety Glasses, Gloves, Hard Hat, Tyvek Suit*	*6200 series respirator from 3M, N100 filters*
Plaster Demolition	*Safety Glasses, Gloves, Hard Hat, Tyvek Suit*	*6200 series respirator from 3M, N100 filters*

6.1.2 Hygiene Requirements During Interim Exposure Assessment

Until the exposure assessment is complete, for each work operation where an employee may be exposed to lead, the following procedures shall be implemented.

- All external non-disposable work clothing will be washed at least weekly
- Hand washing facilities shall be provided and required to be used
- Hand washing facilities shall be located near the entrance to the demarcated area for access by employees who are required to work in the demarcated areas
- Each employee who enters a demarcated area during the exposure assessment shall be required to wash their hands and face at the end of each work shift before eating, drinking or smoking

6.2 Biological Monitoring During Exposure Assessment

Section 6.2 applies to each employee who will be required to enter a demarcated area during the exposure assessment phase of the project. Biological monitoring shall consist of blood sampling and analysis for lead and zinc protoporphyrin levels. Biological monitoring shall be made available within 48 hours of the onset of exposure. If air sample results are received within 48 hours and indicate exposure below the action level of 30 $\mu g/m^3$ for the activity monitored (as required by Section 6.0), biological monitoring shall not be required.

The employer shall notify each employee who has received biological monitoring of the results within five working days of the receipt of the results.

The following employees are now involved with biological monitoring: ***(List each employee's name that is involved with the exposure assessment.***

6.3 Training Requirements During Exposure Assessment

Section 6.3 applies to each employee who will be required to enter a demarcated area during the exposure assessment phase of the project. Information concerning the hazards associated with lead shall be communicated to employees according to the requirements of the Hazard Communication Standard and OAR 437 1926.62 (m) and 29 CFR 1926.62(l). This information shall include but not be limited to the requirements concerning warning signs and labels, material safety data sheets, and the contents of this work plan. In addition, employees exposed to airborne levels of lead at or above the action level shall receive the following training:

- TGCS medical removal level for this lead program is 30 $\mu g/m^3$
- The competent person will notify employees with elevated blood lead levels
- The content of 29 CFR 1926.62 and its appendices
- The specific nature of operations which could result in exposures to lead at or above the action level
- The purpose and description of the health effects of lead and the medical monitoring requirements
- The engineering, work practice and administrative controls associated with the employees job assignment
- The contents of this compliance plan
- Instructions that chelating agents should not be used except under the direction of a physician
- Information on employee's rights of access to exposure and biological monitoring data

6.4 Negative Initial Determination

If the exposure assessment determines that no employee is exposed to airborne concentrations of lead at or above the action level, a written record of this determination shall be made. This record shall include the date of determination, location within the work site, and the name and social security number of each employee monitored.

6.5 Positive initial determination

If the exposure assessment determines that employees are exposed to airborne concentrations of lead at or above the action level but below the PEL, air monitoring shall continue at least every six months. The employer shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least 7 days apart, are below the action level.

If the exposure assessment determines that employees are exposed to airborne concentrations of lead at or above the PEL, the activity associated with the exposure may be re-engineered to lower the exposure and the exposure assessment repeated or, the following requirements shall apply:

6.5.1 Respiratory Protection

TGCS's written respirator protection plan is on site along with records for respirator training and fit testing. Proper respiratory protection shall be selected according to the levels of airborne lead as determined by the exposure assessment. Respirators shall be selected from the respirator selection table in 29 CFR 1926.62 or OAR 437 1926.62(f)(1) through (f)(4).

6.5.2 Eating Facilities

Eating facilities shall be provided for employees whose exposure is above the PEL, without regard to the use of respirators, otherwise an employee may eat, drink or use tobacco products anyplace outside the marked lead abatement area after at least washing their hands and face. Eating facilities shall be as free as practicable from lead contamination. Employees shall be required to wash their hands and face before eating, drinking, smoking or applying cosmetics. Employees shall not be allowed to enter eating areas with protective clothing.

6.6 Frequency

If the exposure assessment reveals employee exposure to be below the action level, further exposure determination need not be repeated unless there is a change of equipment, process, control, personnel, or a new task has been initiated that may result in additional employees being exposed at or above the action level. If there has been such a change, further monitoring will be required.

6.7 Employee Notification of Results of Exposure Assessment

Within five (5) working days after the completion of the exposure assessment the employer shall notify each employee in writing of the results that represent that employees exposure in accordance with OAR 437 1926.62(d)(8).

7.0 Housekeeping

HEPA vacuum system is used for cleaning tools and clothing on the work deck that is contaminated with noticeable dust and paint chips. Keep floors and work area clean of paint chips and debris by vacuuming with HEPA vacuum.

Wipe down respirators, tools and any applicable surfaces on a daily basis or when needed and through away any paper towels or wipes used for this purpose into an approved lead waste container.

Place dirty towels and coveralls in proper storage places.

8.0 Air Monitoring

Section 8.0 describes the procedures and requirements for air monitoring during the retrofit operations.

8.1 Exposure monitoring

Air samples shall be representative of a full shift including at least one sample for each job classification in the work area where employees will be required to enter demarcated areas. Each activity required to be monitored shall be monitored

8.2 Air sample equipment and protocols

All air monitoring will be conducted by ***List the Consulting firm or other entity conducting the air monitoring.)*** The lab used by ***List the Consulting firm or other entity conducting the air monitoring.)*** is ***(List the lab that will be used by the consulting firm or other entity)***, an AIHA Accredited laboratory.

Monitoring equipment to be used shall include the following:

- ***(List the air pump to be used)***
- ***(List the filter media to be used)***
- Appropriate tubing.
- A calibrated rotameter capable of determining a flow rate range of 2.0 liters per minute

All monitoring shall be performed according to NIOSH Method 7082 (see Appendix A) and collected on the attached sample data collection form (see Appendix B). All air monitoring shall be performed under the supervision of an industrial hygienist.

The laboratory performing the analysis shall be accredited under the Environmental Lead Laboratory Accreditation Program (ELLAP) and, in addition, certified by the American Industrial Hygiene Association's Laboratory Accreditation Program for metals on filters.

8.3 Results of Air Sampling Are In Appendix C

8.4 Personal Protective Clothing and Equipment After Exposure Assessment

The following table is a summary of the personal protective clothing and respirator protection required for each operation based on the exposure assessment completed on the ***(List the project here)*** lead work procedure. For a more complete description of the required personal protective clothing and respirators refer to section 4.0 (Worker Protection).

(List all tasks or operations, PPE required and minimum respirator required for each task. See examples below. Note: Examples must be removed when filling this section out)

Operation	Exposure Characterized @ or below÷	Personal Protective Equipment	Minimum Respirator
Demo of Trim		*Safety Glasses, Gloves, Hard Hat, Tyvek Suit*	*N95 Particulate Dust Mask*
Removal of plaster		*Safety Glasses, Gloves, Hard Hat, Tyvek Suit*	*N95 Particulate Dust Mask*
Removal of walls		*Safety Glasses, Gloves, Hard Hat, Tyvek Suit*	*N95 Particulate Dust Mask*

APPENDIX

A. Air Monitoring Data

B. Biological Monitoring

C. Training

Excessive amounts of silica dust may be generated during activities such as: sandblasting, rock drilling, roof bolting, stonecutting, drilling, quarrying, brick/block/concrete cutting, gunite operations, lead-based paint encapsulate applications, asphalt paving, cement products manufacturing, demolition operations, hammering, and chipping and sweeping concrete or masonry.

The following policy is designed to protect TGC Structural (TGCS) employees who may come into contact with silica during the course of their work.

Definitions

- Action Level- A concentration of airborne Respirable Crystalline Silica of 25 µg/m3, calculated as an 8-hour TWA.
- Competent Person- An individual capable of identifying existing and foreseeable Respirable Crystalline Silica hazards in the workplace and who has authorization to take prompt corrective measures to eliminate or minimize those hazards.
- Employee Exposure- The exposure to airborne Respirable Crystalline Silica that would occur if the employee were not using a respirator.
- High-Efficiency Particulate Air (HEPA) Filter- A filter that is at least 99.97 percent efficient in removing monodispersed particles of 0.3 micrometers in diameter.
- Objective Data- Information, based on the composition of a substance, such as air monitoring data from industry-wide surveys or calculations, that demonstrates employee exposure to Respirable Crystalline Silica associated with a particular product or material, or a specific process, task, or activity. The data must reflect workplace conditions closely resembling or with a higher exposure potential than the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.
- Permissible Exposure Limit (PEL)- The employer shall ensure that no employee is exposed to an airborne concentration of Respirable Crystalline Silica in excess of 50 µg/m3, calculated as an 8-hour TWA.
- Physician or Other Licensed Health Care Professional (PLHCP)- An individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide or be delegated the responsibility to provide some or all health care services required by the Medical Surveillance Section of the OSHA Respirable Crystalline Silica Standard.
- Respirable Crystalline Silica- Quartz, Cristobalite, and/or Tridymite contained in airborne particles that are determined to be respirable by a sampling device designed to meet the characteristics for respirable-particle size- selective samplers specified in the International Organization for Standardization (ISO) 7708:1995: Air Quality-Particle Size Fraction Definitions for Health-Related Sampling.
- Specialist- An American Board Certified Specialist in Pulmonary Disease or an American Board Certified Specialist in Occupational Medicine.

Procedures

- In order to determine whether a product contains silica, the Safety Data Sheet must be obtained and evaluated
- In the event silica is present in products on-site, the following safe working procedures shall be followed to eliminate or control silica dust exposure:
    - The Project Safety Orientation should include information on potential areas for exposure and the hazards of silica exposure
    - Utilize Table 1 when applicable (see B6.1)
        - For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to minimize the accumulation of visible airborne dust;
        - For tasks performed using wet methods, apply water at flow rates sufficient to minimize release of visible dust;

- For measures implemented that include an enclosed cab or booth, ensure that the enclosed cab or booth:
  - Is maintained as free as practicable from settled dust;
  - Has door seals and closing mechanisms that work properly;
  - Has gaskets and seals that are in good condition and working properly;
  - Is under positive pressure maintained through continuous delivery of fresh air;
  - Has intake air that is filtered through a filter that is 95% efficient in the 0.3-10.0 μm range (e.g., MERV-16 or better); and
  - Has heating and cooling capabilities.
- Where an employee performs more than one task included on OSHA's Construction Standard Table 1 during the course of a shift, and the total duration of all tasks combined is more than four hours, the required respiratory protection for each task is the respiratory protection specified for more than four hours per shift. If the total duration of all tasks on Table 1 combined is less than four hours, the required respiratory protection for each task is the respiratory protection specified for less than four hours per shift.

- Engineering controls and best work practices must lower the exposure to workers at or below the PEL
- Engineering controls must be considered as a primary means to eliminate the hazard, whenever feasible. If it is not feasible then every effort must be taken to minimize the employee exposure and if the exposure is above the PEL then respiratory protection must be used
- If respiratory protection is required, refer to the Respiratory Protection Program for specific guidelines
- Respiratory protection is required where specified by the OSHA Construction Standard Table 1, for tasks not listed in Table 1, or where the company has not fully and properly implemented the engineering controls, work practices, and respiratory protection described in Table 1
  - Where exposures exceed the PEL during periods necessary to install or implement feasible engineering and work practice controls
  - Where exposures exceed the PEL during tasks, such as certain maintenance and repair tasks, for which engineering and work practice controls are not feasible;
  - During tasks for which an employer has implemented all feasible engineering and work practice controls and such controls are not sufficient to reduce exposures to or below the PEL
- Proper housekeeping techniques must be followed while working with or around silica
- No dry sweeping or dry brushing where such activity could contribute to employee exposure to Respirable Crystalline Silica unless wet sweeping, HEPA-filtered vacuuming, or other methods that minimize the likelihood of exposure are not feasible
- Use power tools with built-in high-efficient particulate air (HEPA) dust extraction units to capture the dust before it is released into the exhausted air
- Shall not allow compressed air to be used to clean clothing or surfaces where such activity could contribute to employee exposure to Respirable Crystalline Silica unless:
  - The compressed air is used in conjunction with a ventilation system that effectively captures the dust cloud created by the compressed air; or
  - No alternative method is feasible.
- Always wet dry materials and surfaces before cutting, chipping, grinding, sanding, sweeping or cleaning
- After working with products that contain silica, each individual will be required to thoroughly wash their hands before eating, drinking or smoking. Eating, drinking or smoking near silica or in silica-regulated areas is strictly prohibited
- This engineering control shall be used to the greatest extent feasible, so that airborne concentrations of silica are minimized

- All subcontractors are to supply any exposure monitoring, testing, or engineering information regarding silica exposure in their operations prior to beginning work
- An example may be the masonry contractor using brick/block saws and associated experience data that the subcontractor has obtained

Monitoring

- Industrial hygiene exposure monitoring must be conducted in order to confirm that the engineering and administrative controls in place are effective and whether personal protective equipment (PPE) is or is not required
- Exposure monitoring will be required of each employee who is or may reasonably be expected to be exposed to Respirable Crystalline Silica at or above the Action Level in accordance with either the Performance Option or the Scheduled Monitoring Option.
  - Performance Option- Will assess the 8-hour TWA exposure for each employee on the basis of any combination of air monitoring data or objective data sufficient to accurately characterize employee exposure to Respirable Crystalline Silica
  - Scheduled Monitoring Option- Initial monitoring will be performed to assess the 8-hour TWA exposure for each employee on the basis of one or more personal breathing zone air samples that reflect the exposure of employees on each shift, for each job classification, and in each work area. Where several employees perform the same tasks on the same shift and in the same work area a representative fraction of these employees will be sampled in order to meet this requirement. In representative sampling employees who are expected to have the highest exposure to Respirable Crystalline Silica will be sampled.
- If initial sampling (per specific task) indicates that employee exposures are below the Action Level then additional monitoring will not be required
- Where the most recent exposure monitoring indicates that employee exposures are at or above the Action Level but at or below the PEL, repeat monitoring will be performed within six months of the most recent monitoring
- Where the most recent (non-initial) exposure monitoring indicates that employee exposures are above the PEL, then repeated monitoring will be performed within three months of the most recent monitoring on file
- Where the most recent (non-initial) exposure monitoring indicates that employee exposures are below the Action Level, then repeat monitoring must be taken within six months of the most recent monitoring session. Once two consecutive monitoring results that are taken seven or more days apart are below the action level then further monitoring is not required

Notification of Results

- The impacted employees will be notified within 5 working days of sampling of the results of the survey
- If the exposure is above PEL then the results will be provided in writing which will include corrective actions on the risk and exposure will be reduced

Written Exposure Plan

- If TGC Structural workers are exposed to Silica then a written exposure plan must be provided and includes the following:
  - A description of workplace tasks that involve exposure to Silica
  - A description of the engineering controls, work practices, and respiratory protection used to limit employee exposure for each task;
  - A description of the housekeeping measures used to limit employee exposure

    - A description of the procedures used to restrict access to work areas, when necessary, to minimize the number of employees exposed to Respirable Crystalline Silica and their level of exposure, including exposures generated by other employers or sole proprietors
- A Competent Person shall be designated to make frequent and regular inspections of job sites, materials, and equipment to implement the written exposure control plan
- The written exposure control plan shall be readily available for examination and copying, upon request, to each employee covered by this chapter, their designated representatives and OSHA
- Minimally annually the written exposure plan will be reviewed, and updated as needed

Medical Surveillance Plan

- Medical surveillance available at no cost to the employee who will be required to use a respirator 30 or more days per year as it pertains to Respirable Crystalline Silica exposure
- All medical examinations and procedures will be performed by a Physician or other Licensed Health Care Professional (PLHCP).
- Initial (baseline) medical examination within 30 days after initial assignment, unless the employee has received a medical examination that meets the requirements of this chapter within the last three years.
- The examination shall consist of:
    - A medical and work history, with emphasis on past, present, and anticipated exposure to Respirable Crystalline Silica, dust, and other agents affecting the respiratory system in addition to any history of respiratory system dysfunction, including signs and symptoms of respiratory disease (e.g., shortness of breath, cough, wheezing), history of tuberculosis, and smoking status and history;
    - A physical examination with special emphasis on the respiratory system;
    - A chest X-ray (a single postero-anterior radiographic projection or radiograph of the chest at full inspiration recorded on either film [no less than 14 x 17 inches and no more than 16 x 17 inches] or digital radiography systems) interpreted and classified according to the International Labour Office (ILO) International Classification of Radiographs of Pneumoconiosis by a NIOSH-certified B Reader;
    - A pulmonary function test to include forced vital capacity (FVC) and forced expiratory volume in one second (FEV1) and FEV1/FVC ratio, administered by a spirometry technician with a current certificate from a NIOSH-approved spirometry course;
    - Testing for latent tuberculosis infection; and
    - Any other tests deemed appropriate by the PLHCP.

Medical Surveillance

- Will make medical surveillance available at no cost to the employee, and at a reasonable time and place, for each employee who will be required under this chapter to use a respirator 30 or more days per year.
- All medical examinations and procedures required by this chapter shall be performed by a Physician or other Licensed Health Care Professional (PLHCP).
- Will make available an initial (baseline) medical examination within 30 days after initial assignment, unless the employee has received a medical examination that meets the requirements of this chapter within the last three years.
- The examination shall consist of:

- A medical and work history, with emphasis on past, present, and anticipated exposure to Respirable Crystalline Silica, dust, and other agents affecting the respiratory system in addition to any history of respiratory system dysfunction, including signs and symptoms of respiratory disease (e.g., shortness of breath, cough, wheezing), history of tuberculosis, and smoking status and history;
- A physical examination with special emphasis on the respiratory system;
- A chest X-ray (a single postero-anterior radiographic projection or radiograph of the chest at full inspiration recorded on either film [no less than 14 x 17 inches and no more than 16 x 17 inches] or digital radiography systems) interpreted and classified according to the International Labour Office (ILO) International Classification of Radiographs of Pneumoconiosis by a NIOSH-certified B Reader;
- A pulmonary function test to include forced vital capacity (FVC) and forced expiratory volume in one second (FEV1) and FEV1/FVC ratio, administered by a spirometry technician with a current certificate from a NIOSH-approved spirometry course;
- Testing for latent tuberculosis infection; and
- Any other tests deemed appropriate by the PLHCP.

Periodic Examinations

- Medical examinations that include the preceding procedures (except testing for latent tuberculosis infection) at least every three years, or more frequently if recommended by the PLHCP.
- Ensure that the examining PLHCP has a copy of the OSHA Respirable Crystalline Silica Construction Standard, this chapter, and the following information:
- A description of the employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to Respirable Crystalline Silica;
    - The employee's former, current, and anticipated levels of occupational exposure to Respirable Crystalline Silica;
    - A description of any personal protective equipment (PPE) used or to be used by the employee, including when and for how long the employee has used or will use that equipment; and
    - Information from records of employment-related medical examinations previously provided to the employee.
- The PLHCP explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of each medical examination performed. The written report shall contain:
    - A statement indicating the results of the medical examination, including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to Respirable Crystalline Silica and any medical conditions that require further evaluation or treatment;
    - Any recommended limitations on the employee's use of respirators;
    - Any recommended limitations on the employee's exposure to Respirable Crystalline Silica; and;
    - A statement that the employee should be examined by a Specialist if the chest X-ray is classified as 1/0 or higher by the B Reader, or if referral to a Specialist is otherwise deemed appropriate by the PLHCP.

- Obtain a written medical opinion from the PLHCP within 30 days of the medical examination. The written opinion shall contain only the following;
    - The date of the examination;
    - A statement that the examination has met the requirements of the OSHA Respirable Crystalline Silica Construction Standard; and
    - Any recommended limitations on the employee's use of respirators.
- If the employee provides written authorization, the written opinion shall also contain either or both of the following:
    - Any recommended limitations on the employee's exposure to Respirable Crystalline Silica; and/or
    - A statement that the employee should be examined by a Specialist if the chest X-ray is classified as 1/0 or higher by the B Reader, or if referral to a Specialist is otherwise deemed appropriate by the PLHCP.
- Ensure that each employee receives a copy of the written medical opinion within 30 days of each medical examination performed.
- Should additional examinations be necessary and shall make available a medical examination by a Specialist within 30 days after receiving the PLHCP's written opinion.
- Ensure that the examining Specialist is provided all information the employer is obligated to provide to the PLHCP.
- Ensure that the Specialist explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of the examination. The written report will contain:
    - A statement indicating the results of the medical examination, including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to Respirable Crystalline Silica and any medical conditions that require further evaluation or treatment;
    - Any recommended limitations on the employee's use of respirators; and
    - Any recommended limitations on the employee's exposure to Respirable Crystalline Silica.
- Will obtain a written opinion from the Specialist within 30 days of the medical examination. The written opinion shall contain the following:
    - The date of the examination;
    - Any recommended limitations on the employee's use of respirators; and
    - If the employee provides written authorization, the written opinion shall also contain any recommended limitations on the employee's exposure to Respirable Crystalline Silica.

Communication to Employees

- Will ensure that each employee has access to labels on containers of Crystalline Silica and Safety Data Sheets and is trained in accordance with the OSHA Hazard Communication Standard and the training section of this chapter.
- Ensure that at least the following hazards are addressed: cancer, lung effects, immune system effects, and kidney effects.
- Each employee will be able to demonstrate knowledge and understanding of at least the following:
    - The health hazards associated with exposure to Respirable Crystalline Silica;

  - Specific tasks in the workplace that could result in exposure to Respirable Crystalline Silica;
  - Specific measures will be implemented to protect employees from exposure to Respirable Crystalline Silica, including engineering controls, work practices, and respirators to be used;
- The contents of the site specific program will cover the following:
  - The designated Competent Person
  - The purpose and a description of the Medical Surveillance Program.
  - A copy of the OSHA Respirable Crystalline Silica Construction Standard readily available without cost to all employees

Record Keeping

- With regards to air monitoring data, will make and maintain an accurate record of all exposure measurements taken to assess employee exposure to Respirable Crystalline Silica. This record will include at least the following information:
  - The date of measurement for each sample taken;
  - The task monitored;
  - Sampling and analytical methods used;
  - Number, duration, and results of samples taken;
  - Identity of the laboratory that performed the analysis;
  - Type of personal protective equipment (PPE), such as respirators, worn by the employees monitored; and
  - Name, social security number, and job classification of all employees represented by the monitoring, indicating which employees were actually monitored.
- Exposure records will be kept for at least 30 years.
- Exposure records are maintained and made available in accordance with 29 CFR 1910.1020.
- Accurate record will be maintained and available of all objective data relied upon to comply with the requirements of the OSHA Respirable Crystalline Silica Construction Standard. This record shall include at least the following information:
  - The Crystalline Silica-containing material in question;
  - The source of the objective data;
  - The testing protocol and results of testing;
  - A description of the process, task, or activity on which the objective data were based; and
  - Other data relevant to the process, task, activity, material, or exposures on which the objective data were based.
- Ensure that objective data are maintained and made available in accordance with 29 CFR 1910.1020.
- Will make and maintain an accurate record for each employee covered by the Medical Surveillance.
- The record shall include the following information about the employee:
  - Name and social security number;
  - A copy of the PLHCPs' and/or Specialists' written medical opinions; and
  - A copy of the information provided to the PLHCPs and Specialists.
  - Objective data records will be kept for at least 30 years.

TGC Structural (TGCS) is not only concerned about our employees and the employees of our subcontractors, but also the environment. All chemicals, whether considered toxic or not need to be handled in a proper and responsible way. This program is designed to help TGCS meet those responsibilities.

Safety Data Sheet (SDS) And Container Labeling

- All hazardous chemicals brought onto the job site must have an SDS on file at the job site
- All hazardous chemicals delivered to site must have label from manufacture on container that meets the GHS
- All hazardous chemicals that are put into a secondary container must be properly labeled per GHS guidelines or per client mandate

Chemical Handling Procedure

- Do not dump or drain any chemicals (this includes oils) into a process sewer, storm drain, sanitary sewer, sump, pond, stream, on the ground, or into any scrap or waste dumpster
- Secure chemical container lids and caps at all times except when adding, withdrawing, or using chemical
- Chemical containers shall be stored so as to prevent rainwater from entering container either by covering container or tipping container to allow water to run off
- Have spill control materials available ie: Spill kit(s), kitty litter, sawdust, absorbent pads, brooms, drain covers, etc.

Special Procedures

- Empty Chemical Containers
    - Never dump or drain chemicals to empty containers. Use the chemical up
    - Reusable containers should be returned to the supplier
    - All non-reusable containers are to be completely emptied before disposal
    - Containers in poor condition are to be emptied, crushed and placed in a dumpster
- Paints, Thinners, and Solvents
    - Open paint, thinner, or solvent cans only as needed
    - Use proper secondary label and also label as “Hazardous Waste”, unless chemical is not listed and does not meet any Hazardous Waste characteristics. Do not date the container!
    - All chlorinated solvents must be approved for use by the Safety Department, and also per client mandate
    - Dispose of per client contact or Safety Department
- Other Special Chemicals
    - If project requires work with other special chemicals, check with the Safety Department for special handling requirements

Purchasing Hazardous Materials

- Purchase only the amount of material necessary to complete the project at hand
    - If less than 55 Gallons of product is needed, purchase only 5 Gallon cans
    - If less than 110 Gallons of product is needed, purchase one 55 Gallon Drum and the remainder in 5 Gallon cans etc.
- Many clients require advanced SDS review/approval prior to delivery of hazardous materials to the project
    - Check with the project manager prior to purchasing hazardous materials

    - Leave ample time for client review
- Substitutions can often be made with materials that do not create hazardous waste
    - Many clients require that alternative materials be used whenever possible

Containment And Clean-Up Of A Sudden Or Accidental Release

- Notification
    - If anyone is injured, seek medical help
    - Inform foreman immediately of any spill or release
    - As soon as possible notify the Safety Department or project superintendent
    - Any spill with potential to affect human health or the environment (except when occurring in secondary containment) must be reported to local authorities in accordance with the local emergency plan
        - Also contact client site safety representative
- Protection
    - Get personal protective equipment as required by HMIS label or SDS
- Liquid Spills
    - Immediately confine liquid spills to the smallest possible area using dams, dikes, and/or absorbent
    - In case of a large liquid spill, contact client site safety representative for instructions for disposal. Contain spill as above where possible
- Gaseous Release
    - Evacuate area in case of a gaseous release. Contact superintendent and Safety Department immediately
- Disposal
    - Consult warning labels on container and/or SDS's for procedures and precautions necessary for safe and proper disposal of the hazardous waste
    - Use Personal Protective Equipment (PPE) as required
    - Dispose of small quantities of oil soaked absorbent material as solid waste
    - Place contaminated materials inside an approved container, dispose of in accordance with all Federal, State and Local Regulations

TGC Structural (TGCS) is not in the business of performing asbestos abatement work. It is the policy of TGCS to refrain from engaging in the removal or abatement of asbestos containing materials when performing renovation or building activities. TGCS will request that owners have a Hazardous Material Survey made by a certified testing company, or industrial hygienist prior to the start of work. Where asbestos is found, the owner must contract for its removal. TGCS must obtain certification that the asbestos has been removed and the area is safe to work.

In the course of renovation and demolition, workers may encounter materials which contain asbestos fibers. Exposure to asbestos fibers has been linked to cancer and asbestosis. In order to mitigate these problems, the following policy prevents exposure to asbestos fibers.

General Requirements

- Prior to the renovation or demolition of any building, an asbestos survey from a certified asbestos technician must be provided. The result of this survey must be kept on the jobsite for the duration of the renovation or demolition
    - Only the areas of the building that are being renovated or demolished need to be surveyed
- If asbestos is discovered by the certified asbestos technician, it must be abated by a licensed abatement contractor
    - Employees should never attempt to remove dispose of, or disturb asbestos containing materials
    - Subcontractors are not permitted to abate asbestos, regardless of whether they are properly licensed or not
    - If the asbestos containing material is in an area where it will not be disturbed, it does not need to be abated
        - Do not disturb asbestos containing materials
        - Make sure all asbestos containing material are properly labeled
- If materials are discovered that could be asbestos containing, stop the work activity and bring this occurrence to the immediate attention of the project superintendent or the project manager
- Do not remove or disturb these materials until they have been tested and proven to be non-asbestos containing
- The following items are commonly asbestos containing materials. If you discover these items, and they do not appear on the building survey, notify your project superintendent or project manager and do not disturb them:
    - VCT Flooring, Floor Base and Mastic (Commonly 9” x 9”)
    - Black VCT Mastic (even if used with 12” x 12” tiles)
    - Roofing Material
    - Plaster
    - Mortar
    - Vermiculite use as insulation of CMU walls
    - Ceiling Tile and Mastic
    - Pipe Lagging
    - HVAC Duct Tape/Lagging
    - Insulation
    - Window putty
    - Exterior caulking
- Do not allow subcontractors to remove, disturb, or dispose of materials that are suspected of being asbestos containing

Procedures When Working in an Area That Contains Asbestos

- All employees must receive Asbestos Hazard Awareness Training prior to beginning work in areas that have materials containing asbestos

- All employees must take steps not to disturb any Asbestos containing materials
- If an Asbestos containing material is disturbed:
    - Immediately stop work activity
    - Barricade the area to prevent other trades from entering
    - Notify Superintendent immediately
- Superintendent will make provisions to have a clean up

Roles and Responsibilities

- TGCS Management:
    - Must conduct inspections of the workplace for compliance with this policy
    - Must discuss policy applications during project orientation with subcontractors
    - Must assure that Asbestos Hazard Awareness Training has been conducted for all employees working in or around material containing asbestos
- Subcontractor Management:
    - Must comply with and furnish materials necessary to comply with TGCS policy
    - Must provide and participate in the Asbestos Hazard Awareness Training for their employees
- Subcontractor Employees:
    - Must attend and participate in project orientations and Asbestos Hazard Awareness Training.
    - Must report immediately anytime asbestos containing material is discovered or disturbed

OSHA and OR-OSHA Jurisdictions

No specific regulatory requirements

DOSH Jurisdiction

Each contractor working on a TGC Structural (TGCS) project will comply with DOSH Construction Industry Regulations in addition to the following policies/procedures.

TGCS has determined that, due to the nature of the construction industry, our employees may at times be exposed excessive heat in the outdoor environment. The purpose of this program is to ensure that all employees are aware of such hazards, the necessity and procedures for protecting themselves from such hazards, and of remedial health measures to take if they are exposed to such hazards.

Scope and Application
This program applies to and is required for all:

- Employees performing work in an outdoor environment
- All outdoor work activities between May 1st and September 30th
- Only when the employees are exposed to outdoor heat at or above the temperatures indicated in Table #1
- Except those employees which outdoor work activities do not last for more than fifteen (15) minutes in any sixty (60) minute period

TABLE #1
Outdoor Temperature Action Levels

Clothing/PPE Condition	Temperature
Non-breathing clothes including vapor barrier clothing or PPE such as chemical resistant suits	52°
Double-layer woven clothes including coveralls, jackets and sweatshirts	77°
All other clothing	89°

Responsibilities

- Employer
  - Encourage employees to frequently consume water or other acceptable beverages to ensure hydration
  - Supply at least one (1) quart of drinking water per employee per hour
  - Ensure that a sufficient supply of drinking water is readily available to employees at all times
  - Ensure the employees have an opportunity to drink at least one (1) quart of drinking water per hour
  - Ensure a readily available means to replenish the drinking water supply.
- Employees
  - Monitoring their own personal factors for heat related illness including consumption of water or other acceptable beverages to ensure hydration

Procedures

- Employees showing signs or symptoms of heat related illness must be:
  - Relieved from duty and provided sufficient means to reduce body temperature (Shade, fluids, etc)
  - Monitored to determine whether medical attention is needed

OSHA and OR-OSHA Jurisdictions

Each contractor working on a TGC Structural (TGCS) project will comply with OSHA, OR- OSHA, DOSH, Construction Industry Concrete Regulations, in addition to the following policies/procedures.

General Requirements

- Construction Loads
  - No construction loads shall be placed on a concrete structure or portion of a concrete structure unless the employer determines, based on information received from a person who is qualified in structural design, that the structure or portion of the structure is capable of supporting the loads
- Reinforcing Steel
  - All protruding reinforcing steel, onto and into which employees could fall shall be guarded to eliminate the hazard of impalement
- Post-Tensioning Operations
  - No employee (except those essential to the post-tensioning operations) shall be permitted to be behind the jack during tensioning operations
  - Signs, concrete safety and barriers shall be erected to limit employee access to the post-tensioning area during tensioning operations
- Working Under Loads
  - No employee shall be permitted to work under concrete buckets while buckets are being elevated or lowered into position
  - To the extent practical, elevated concrete buckets shall be routed so that no employee, or the fewest number of employees are exposed to the hazards associated with falling concrete buckets
- Personal Protective Equipment
  - Rubber gloves and eye protection shall be worn to protect employee from cement burns
    - Immediately rinse with clean water eyes, skin, or clothing that comes in contact with concrete
    - Employees with a cement burn should immediately seek medical treatment
    - By the time an employee becomes aware of a cement burn, the damage has been done, and the burn can continue to get worse even after the cement has been rinsed off

Concrete Pumping

- Concrete Pump Setup
  - Before using a concrete boom pump, the TGCS superintendent/foreman must determine the size of the outrigger stabilizer pads/cribbing required for the boom pump size, manufacturer and the soil type and conditions onsite
  - To determine the size of the stabilizer pads/cribbing, the superintendent/foreman shall use the Concrete Boom Pump Outrigger Stabilizer Pad Decision Matrix at the end of this section
  - Once the pad size has been determine the superintendent/foreman must use that size of pad for all concrete pours
  - If the superintendent/foreman feels the pad size is larger than what is really needed and he wants to reduce the size of the pad. He must get approval from the Safety Manager before he reduces the size
  - If the concrete boom pump is controlled by a subcontractor, the TGCS Superintendent/foreman is still required to determine the size of the outrigger stabilizer pads/cribbing
  - The Stabilizer Decision Matrix calculations shall be performed for each soil type and condition encountered onsite

- The Stabilizer Pad Decision Matrix calculations shall be performed for each size and manufacturer of boom pump used. (As an example, a Putzmeister 52 meter boom pump has different load specifications (76,875 lbs.) than a Schwing 52 meter boom pump. (60,000 lbs.))
- When the size and/or manufacturer of the boom pump that shows up onsite is different than the size and/or manufacturer of the boom pump ordered, the Stabilizer Pad Decision Matrix calculations shall be recalculated for the boom pump used
- In order for the Stabilizer Pad Decision Matrix calculations to be accurate the follow must be in place
  - All outriggers must be fully extended
  - All outriggers must have the proper size stabilizer pads/cribbing
  - Outrigger pads/cribbing must be level and have 100% bearing on the soil. (No voids under the pads/cribbing)
  - Outrigger pads/cribbing must be made of a substantial material
  - Outrigger pads/cribbing must be full and continuous (No spaces between components)
- In order for the Stabilizer Pad Decision Matrix calculations to be accurate the follow must be known
  - Bearing capacity of the soil type(s) onsite. This can be taken from a soils report generated by a soils engineer or the structural drawings of the blue prints generated by a structural engineer
  - The size and manufacturer of the boom pump used for the pour
  - The Superintendent/Foreman must determine the maximum outrigger load for the size and manufacturer of the boom pump used for the pour
  - When the front and back outrigger maximum load pressures are dissimilar in the Stabilizer Pad Decision Matrix you must use the highest load in your calculations
- Avoid hazardous proximity or contact with electric lines. Position the pump so a minimum safety distance of 20 feet is maintained in all the boom positions needed to do the job
- Consider the safe approach and departure of the ready-mix trucks
- Never hang more than one pipe or hose from the boom
- Maintain a safe distance between the concrete and the edge of a cliff or excavation
- Have the pump operator test soil bearing capacity by slowly moving empty boom over each outrigger

- Safety Rules for the Placing Crew
  - Assure there is a safety sling from the boom to the first section of pipe
  - Do not look into the end of a plugged hose or pipe
  - Stay away from the point of discharge when starting or restarting, or when there's air in the pipe
  - Never open a pressurized pipeline
  - Do not hug the boom hose, hold it with both hands to allow the hose to move freely
  - Never hold the hose with your shoulder. Do not walk backwards, stay out of the path of the boom
  - Never kink the hose
  - Watch out for pinch points
  - Never straddle or sit on a pressurized pipeline
  - Only one person should signal the pump operator. Before the pour begins, the hose man, the operator and the spotter should agree on hand signals

Cast In-Place Concrete

- General Requirements for Formwork
  - Formwork must be designed, fabricated, erected, supported, braced, and maintained so that it will be capable of supporting without failure all vertical and lateral loads that might be applied to the formwork. Concrete pour rates for wall forms must not be exceeded. Lateral concrete pressure on forms is affected by the following:

        - Height of pour
        - Pour rate
        - Unit weight of concrete
        - Temperature
        - Type of cement
        - Vibration
        - Concrete slump
        - Chemical Additives
- Shoring and Re-shoring
    - All shoring equipment must be inspected prior to erection to determine that the equipment meets requirements specified in the formwork drawings
    - Damaged shoring equipment must not be used for shoring
    - Erected shoring equipment must be inspected immediately prior to, during, and immediately after concrete placement
    - Shoring equipment that is found to be damaged or weakened after erection must be immediately reinforced
- Reinforcing Steel
    - Reinforcing steel for walls, piers, columns, and similar vertical structures must be adequately supported to prevent overturning and collapse
    - Measures must be taken to prevent unrolled wire mesh from recoiling
    - Such measures may include, but are not limited to, securing each end of the roll or turning over the roll
- Removal of Formwork
    - Forms and shores (except those used for slabs on grade and slip forms) must not be removed until it is determined that the concrete has gained sufficient strength to support its weight and superimposed loads
    - Such determination shall be based on compliance with one of the following:
        - The plans and specifications stipulate conditions for removal of forms and shores, and such conditions have been followed, or
        - The concrete has been properly tested with an appropriate ASTM standard test method designed to indicate the concrete compressive strength, and the test results indicate that the concrete has gained sufficient strength to support its weight and superimposed loads
        - Re-shoring shall not be removed until the concrete being supported has attained adequate strength to support its weight and all loads in place upon it

DOSH Jurisdiction

In addition to the above program, projects in the Washington DOSH Jurisdiction shall comply with the following.

Fall Protection

- No employee shall be permitted to place or tie reinforcing steel more than six feet above any adjacent working surface unless the employee is protected by personal fall arrest systems, safety net systems, or positioning device systems
- Each employee on the face of formwork or reinforcing steel shall be protected from falling 6 feet or more to lower levels by personal fall arrest systems, safety net systems, or positioning device systems

Concrete Boom Pump Outrigger Stabilizer Pad Decision Matrix

Soil bearing capacity is known based on the soils report from a licensed soil engineer or structural drawings generated by a structural engineer.
In PSI or PSF

NO

If you can't determine the soil bearing capacity you must contact the soil or structural engineer to determine what bearing capacity was used to determine the footing sizes. You can't perform the pad calculations without this number.

YES

If in PSF convert to PSI and use this number to perform the load bearing capacities calculation to determine the pad size requirements.

To determine the pad size, use Formula #1.

$$\frac{\text{F.G.}}{\text{L.B.C.}} = \text{Pad Area Required}$$

F.G. = Forces Generated from Outrigger Chart Below
L.B.C. = Load Bearing Capacity of Soil
Pad Area Required = Size of the Outrigger Stabilizer Pad that is required. (in Sq.In.)

Or

If you have pads available you can verify if those pads are of proper size by using Formula #2.

$$\frac{\text{Load}}{\text{Area}} = \text{PSI}$$

Load = Forces Generated from Outrigger Chart Below
Area = Size of the Available Pad in Square Inches
PSI = Pressure that will be expected to be generate on the soil.

Example #1
You have a soils report from the soil engineer indicating the soil in the area will take a 5,000 PSF load. The pump you are using is a Schwing KVM 52. What size of outrigger pads will be required? (You are trying to determine the pad size you will use Formula #1)

First convert the PSF from the soils report to PSI. (5000 ÷ 144 = 34.72 or 35 PSI) (L.B.C = 35)

Look at the Schwing chart below and determine the forces generated by the outriggers of a KVM 52 Pump. (F.G. = 60,000 Pounds) Now do the calculation.

$$\frac{\textbf{F.G}}{\textbf{L.B.C}} = \textbf{Pad Area Required} \quad \text{or} \quad \frac{60{,}000}{35} = 1714 \text{ Sq. In}$$

Convert Sq.In. to Sq.Ft. (1714 ÷ 144 = 11.90 Sq.Ft.) Your outrigger pad should have 12 square feet of soil contact.

Example #2
The structural engineer has indicated on the structural drawings the allowable soil bearing pressure in the area is 5,000 PSF. The pump you are using is a Schwing KVM 52. You already have 4 foot by 4 foot pads onsite from another pour. Are these pads large enough to support this pump? (You are trying to determine if the pad size is large enough so you will use Formula #2)

Convert 16 Sq.Ft. to Sq.In. (16 × 144 = 2304)

Look at the Schwing chart below and determine the forces generated by the outriggers of a KVM 52 Pump. (F.G. = 60,000 Pounds) Now do the calculation.

$$\frac{\textbf{Load}}{\textbf{Area}} = \textbf{PSI} \quad \text{or} \quad \frac{60{,}000}{2304} = 26.04 \text{ PSI}$$

Convert the PSF from the soils report to PSI. (5000 ÷ 144 = 34.72 or 35 PSI)
Load bearing capacity (LBC) of the soil is 35 PSI.
The load you will exert on the soil with a 4 foot by 4 foot plate is 26 PSI.
Load Bearing Capacity of the soil is greater than the Load being exerted on the soil 35≥26.
Therefore your plates are more than adequate to handle the pump.

Conversion Table	
Pounds per Square Foot to Pounds per Square Inches	PSF ÷ 144 = PSI
Square Feet to Square Inches	Sq.Ft. × 144 = Sq.In.

Concrete Boom Pump Outrigger Spreads and Loads

Putzmeister Pumps

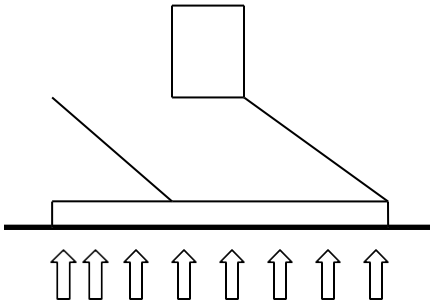
Model	Front Outrigger Spread in Ft. & In. L-R	Rear Outrigger Spread in Ft. & In. L-R	Front to Rear Outrigger Spread In Ft. & In.	Front Outrigger Load in Lbs. L-R	Rear Outrigger Load in Lbs. L-R
20Z – Meter	11-2	8-6	16-3	23,605	38,220
28Z – Meter	20-5	8-7	23-1	37,125	18,000
31Z – Meter	20-7	21-8	22-11	39,750	41,350
32Z – Meter	18-8	18-8	23-1	43,850	43,850
36Z – Meter	20-7	21-8	22-11	43,850	43,850
40Z – Meter	20-7	21-8	22-11	41,350	43,850
47Z – Meter	26-1	29-6	28-6	58,435	57,310
52Z – Meter	34-9	35-0	38-1	76,875	75,000
58 – Meter	32-11	38-7	35-9	89,925	77,560
61 – Meter	32-11	38-10	35-8	89,925	77,560
63Z – Meter	37-9	42-1	40-9	97,800	92,200

Schwing Pumps

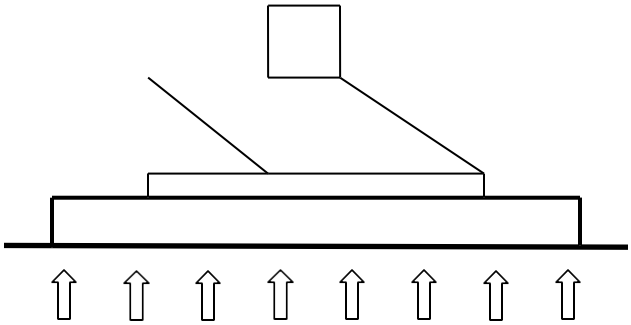
Model	Front Outrigger Spread in Ft. & In.	Rear Outrigger Spread in Ft. & In.	Front to Rear Outrigger Length in Ft & In.	Maximum Front Outrigger Load in Lbs.	Maximum Rear Outrigger Load in Lbs.
KVM 17	11-9	7-2	14-2	16,860	11,240
KVM 23	19-8	7-2	18-6	20,947	14,332
KVM 23-4H	18-9	11-2	19-10	22,050	15,250
KVM 24-4H	19-7	11-10	22-4	27,000	20,500
KVM 25	18-9	11-2	20-4	23,200	14,300
KVM 26-4	19-7	11-10	22-4	29,000	23,500
KVM 28	20-5	15-0	22-7	27,560	17,420
KVM 28X	19-7	11-10	22-4	28,500	22,800
KVM 31	20-4	20-4	20-8	24,255	28,665
KVM 32	23-2	16-0	22-7	30,430	22,930
KVM 32XL	19-8	17-2	24-4	32,600	27,000
KVM 34X	20-5	18-8	24-5	39,500	31,500
KVM 36	22-10	24-6	23-6	32,630	36,380
KVM 36X	24-4	19-4	29-5	37,800	33,300
KVM 42HW	29-6	29-6	30-3	49,600	52,900
KVM 42LW	27-11	27-7	27-9	43,400	45,400
KVM 42LW NEW STYLE	27-11	27-7	27-9	43,400	45,400
KVM 45SX	27-3	27-3	29-0	60,000	60,000
KVM 47SX	27-3	27-3	29-0	60,000	60,000
KVM 52	32-2	32-2	33-6	60,000	60,000

TO REDUCE GROUND PRESSURE

Without Blocking, Ground Pressure is High

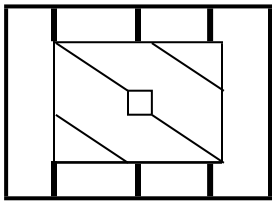


With Blocking, Ground Pressure Reduced

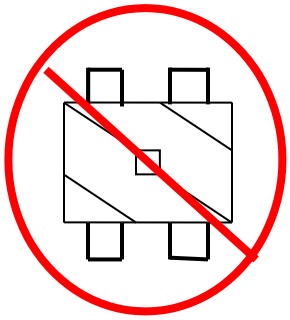


TEST OF TYPES OF BLOCKING

Properly Blocked

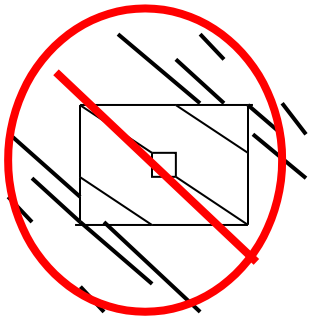


Span Blocking



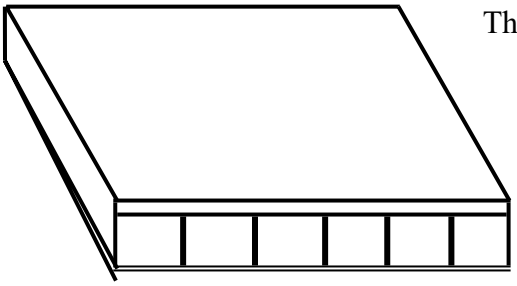
Approx. 70% of proper blocking

Corner Blocking

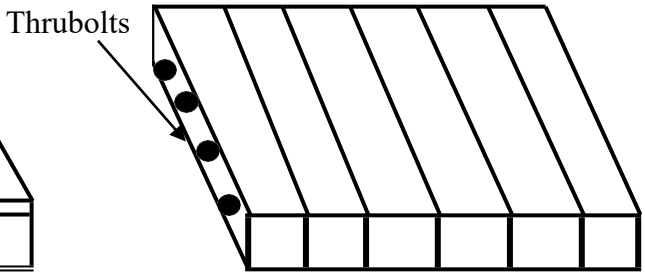


Approx. 50% of proper blocking

APPROVED CRIBBING



4X4 or 4X6 with plywood top and bottom to stiffen enough to span soft spots plywood screwed to 4x



4X4 or 4X6 with thrubolts to stiffen enough to span soft spots

Each contractor working on a TGC Structural (TGCS) project will comply with OSHA, OR- OSHA, DOSH, Construction Industry Regulations, in addition to the following policies/procedures.

TGCS recognizes the nature of tilt-up construction dictates the need for thorough planning. The success of tilt-up construction is realized by efficient on-site production operation and careful planning with each step of the construction sequence building on the previous step. The erection of the wall panels is the most important phase of tilt-up construction. It is critical for the engineers and contractors to plan and review this process completely and thoroughly. In an effort to ensure that the tilting phase of the job is done safely and efficiently TGCS has developed this program.

Planning:

- Site Access and Job Conditions
  - It is advisable to investigate regulations on daily start up times, noise and dust control and job site perimeter fencing. Also, check job site restriction on tonnage or limitations on access to the site
- Slab as a Work Platform
  - Initial grading of the site should include completion of all sub-grade work for the building floor, and parking and truck areas
  - A roadbed and an accessibility ramp to the sub-grade should also be completed at this time
  - Emphasis must be placed on having a strong, well compacted sub-grade. Regardless of how much effort goes into producing a good slab, the slab will only be as good as its sub-base
  - Slab thickness and compressive strength must meet bracing designs. You may have to pour a thickened slab at brace locations
- Bondbreaker and Curing Compounds
  - Bondbreakers and curing compounds are among the most critical materials used on a tilt-up project
    - These products should have their performance criteria carefully evaluated
  - Check the slab and bondbreaker before pouring any concrete
  - Bondbreaker can be tested by dropping a small amount of water on the casting bed, from two feet above to allow it to splatter
    - If the bondbreaker is applied correctly, the water will bead into small droplets as it would on a freshly waxed automobile
    - If the water does not bead, re-spray all of the suspected areas of the casting slab
  - A final note: whenever there is doubt about sufficient bondbreaker on the casting slab, always apply more. It is the cheapest insurance available for a successful tilt-up job
- Panel Casting Layout
  - The panel contractor should develop a good casting layout
  - For a smooth construction sequence, two important criteria must be met:
    - The panels must be located for efficient casting
    - The panels must be located for safe and efficient erection
  - Tilt-up panels should be cast as near as possible to their final location in the structure
  - An effort should be made to place as many side by side as possible
  - If a panel must be "walked" to its final position, try to keep the distance as short as possible. "Walking" the panels should be avoided, if possible

Erection

- Preparation for Lifting
  - Clean the panel and the surrounding floor slab area
  - Locate and prepare all pertinent embedded devices that are accessible
  - Attach all pipe braces and strong backs as required
  - Each panel should be numbered and clearly identified according to the panel layout/erection sequence plan

- Place the identifying mark in a position that will not be exposed when the structure is completed
- Mark locations and heights of all shims in case they are displaced
- The structure footing should also be marked with the corresponding identifying numbers to give the erection crew clear indication where each panel goes
- The footing should be appropriately marked to show the proper position of each panel on the footing
- All lifting inserts should be uncovered, cleaned out and tested with a hardware unit several days prior to erection day
- Rotary hammers, drills, leveling shims, cutting torch, steel wedges, pry bars, level and plumb bob and a full set of hand tools should be available at the job site
- Have back up tools onsite
- Verify concrete compressive strength (f'c) at time of initial lift is at least the strength listed in the insert selection chart for the insert being used
- Have additional cylinders cast on your last tilt panel pour

- Crane Certification
  - Cranes selected for tilt-up projects should be properly certified
  - Superintendent should make certain that they have documentation available at the job site attesting to the crane's certification
  - Superintendent should make certain that they have documentation available at the job site attesting to the crane operator's certification
  - The crane supplier must itemize the rigging and equipment required for a proper and safe lift
- Pre-Planning Meetings
  - The superintendent and the crane supplier shall conduct as many onsite pre-planning meetings as necessary to assure a safe lifting operation
  - Items to be reviewed and/or completed are:
    - Review the route of crane and it's supporting trucks onto the site
    - Identify the crane assembly and break down area
    - Review engineered panel drawings for weights
    - Site soil bearing conditions
    - Perform a work zone site assessment per Section C5 Cranes and Rigging
    - Slab bearing conditions
    - Review panel layout drawings
    - Review panel erection sequence
    - Develop a crane lift plan with the panel with worst case scenario (Typically determined by distance away from crane no necessarily the heaviest panel)
    - Determine the type of rigging to be used
    - Determine who is supplying the rigging components
- Day of Erection Safety Meeting
  - A full crew safety meeting should be held each day prior to lifting, where all pertinent safety details are discussed and all questions answered
  - See Section C2.1 for the Tilt Up Erection Safety Meeting Form
    - All crew members sign it at the end of the safety meeting
  - Delineate the erection zone with a visual barrier
  - Only members of the erection crew will be allowed in area
  - All members of the erection crew will wear high-vis safety vests
  - The rigger foreman/signalman should be identified at the safety meeting (typically the Oiler)
  - This individual will be the one the crane operator looks to for all signals during the lifting process
  - During the safety meeting, the rigger foreman/signalman should demonstrate the proper use of the lifting hardware and bracing hardware, and how to use any necessary tools or equipment
  - If the crane is to use rolling outriggers, a warning to stay clear is in order
- Prior to Lifting

- Check wind conditions prior to lifting a panel
- Make sure the area is clear of spectators
- Inspect all panels for projections (such as rebar) that may interfere with the process
- Inspect all rigging and hardware for alignment and be sure that the rigging is free of snags
- If non swivel sheaves are being used, make certain the sheaves are properly aligned
- Braces are usually attached to the panels prior to lifting; be sure that the braces will not be trapped by the rigging during the lift
- Be alert for panels sticking to the casting bed
- Carefully positioned pry bars and/or wedges at the insert lines can often help the crane successfully release the panel from the casting bed
- Do not stand on the panel being lifted, or in a pinch point while wedging panels

- During the Lift
  - As the cables are being tensioned, they invariably tend to twist and rotate the hardware
  - The rigging crew needs to be alert for this condition and halt the lift to realign the hardware
  - It is the rigger foreman's responsibility to be alert to any obstacles in the path of the panel and crew
- Plumbing the Panels
  - Make certain that the panel being plumbed does not strike a previously erected panel or panel bracing
  - Keep the drop zone area of the panel clear of the erection crew until the panel is firmly set
  - Keep the drop zone area of the panel clear of all workers until the panel is firmly braced
  - If the panel being plumbed is a closure panel, take exact measurements prior to lifting to be sure the panel will fit
  - Tilt-up panels should be as plumb as possible prior to attaching the bracing to the floor slab
  - Temporary out-of-plumb should not exceed 4" at the top of the panel
  - Fine tuning of the panel plumb can be accomplished with the pipe braces
  - There are two common conditions that require a panel to be plumb before releasing the crane:
    - When the panel is going to support an adjacent spandrel or lintel panel. The supporting panels need to be accurately placed in their exact position to prevent the need of adjusting them after placement of the spandrel or lintel panel
    - When the bracing design specifies a subsequent system of knee, lateral, and end or cross bracing. Attempts to adjust a panel after subsequent bracing is in place would necessitate loosening or removing the bracing, putting the panel and workers in a dangerous position
- Bracing Panels
  - All bracing should be in place and complete before relaxing the crane load. The crane load should be released slowly
  - Do not release the crane load if for any reason, the bracing does not appear adequate
  - Bracing anchors must be installed per manufacturer’s instructions, **do not use wedge anchors for braces**
  - After winds of more than 35 mph or more have been experienced, tightness of bolts must be checked
  - Bolted hardware must have full bearing on the concrete surface, and attachment bolts bear fully on the hardware
  - Caution must be taken so that the hardware is not subjected to a side loading that will cause an additional, unintended loading
  - Coil bolts must have a minimum coil penetration through the insert coil, but are not bearing on concrete at the bottom of the void
  - There are instances when the crane's position will prevent the lateral bracing to be completed
    - Once the crane has cleared the area, the lateral and end bracing can be completed
    - This should be accomplished as soon as possible, no more than one panel behind the erection crew

- Bracing on erected panels must be completed at the end of the work day

After the Lift

- Grouting of panels should take place as soon as possible after the last panel has been set.
- Wall braces should never be removed until all structural connections are complete.
- Note that the pour back strip between the floor slab and the wall panels maybe considered a structural connection.
- If the building's structural drawings do not indicate when the braces can be removed, the engineer of record should be consulted.

Job Name: _____ **Date:** _____

Discussion Topics and Training

- ☐ Verify concrete meets minimum compressive strength required for erection.
- ☐ Only erection crew allowed in the work zone.
- ☐ Work zone boundaries must be demarked with flags and danger tape.
- ☐ Crane operator is prohibited from exceeding these boundaries.
- ☐ Erection crew must wear proper PPE (safety vests, hardhats. safety glasses, Kevlar work gloves as needed)
- ☐ The signalman will be the ONLY one the crane operator looks to for all signals.
- ☐ The foreman will designate who is authorized to tell the rigging crew to release panel.
- ☐ Review locations of overhead obstructions, and slab block outs and any other danger locations.
- ☐ Review each member of tilt crew's role. Place experienced crew members with inexperienced members.
- ☐ Review proper use of rigging and brace hardware. Verify correct bolts and torque required.
- ☐ A qualified rigger will provide training to all crew members attaching the clutches to the panels.
- ☐ When panel is traveling, crew is often required to support braces. Braces must never be held by the foot because a sudden movement of the panel will push the brace into the body. Brace should be passed under an arm to allow freedom of movement. More than one person may be required to support heavy braces.
- ☐ Review panel erection sequence and location for man- lifts and equipment
- ☐ If wedges are used to break the bond, worker using hammers should stand on the ground and not on the panel.
- ☐ Watch panel inserts during lift. If cracks appear set panel down and consult with the Engineer
- ☐ Never allow heads, hands or feet on the underside of a panel for any reason.
- ☐ During placement crew should never get behind a panel (on the underside of tilt).
- ☐ Do not use a burke bar until panel is set down. Use wood to guide panel in.
- ☐ Fingers must never be placed between footing and a panel being places. (Use a tool to reposition shims).
- ☐ Tilt-up panels should be as plumb as possible prior to attaching the bracing to floor slab.
- ☐ Temporary out-of-plumb should not exceed 4" at the top of the panel
- ☐ Bracing (or welds to the adjacent panel) on erected panels must be completed before end of shift
- ☐ Stay alert at all times, watch out for pinch points.
- ☐ If the crane is to use rolling outriggers, a warning to stay clear is in order.
- ☐ Ensure area is kept clean. Designate cleanup crew.
- ☐ Precautions must be taken during adverse weather conditions. Crew and the crane may slip on wet or icy slabs.
- ☐ Verify maximum wind speed for safe tilt erection.
- ☐ Have proper back up equipment, generator and tools available
- ☐ Check all bolts/braces daily. Recheck if winds are in excess of 35mph
- ☐ Install panel clamps before end of shift
- ☐ Review Emergency Response Plan and Rally Point location
- ☐ You cannot stop a moving panel
- ☐ Results of the Work Zone Hazard Assessment
- ☐ Ground Conditions (underground utilizes, tanks, soil analysis, compaction, etc)
- ☐ Hazard posed by the rotating superstructure
- ☐ Barricading the swing area of the crane.
- ☐ Fall Zone: Means the area (including but not limited to the area directly beneath the load) in which it is reasonably foreseeable that partially or completely suspended materials could fall in the event of an accident
  - ☐ Only person(s) considered essential to the lift are permitted in the fall zone (tilt-up lifts)
  - ☐ Person(s) consider essential during a tilt-up
    - ☐ Person(s) guiding the panel
    - Person(s) directing the movement of the panel
    - Person(s) attaching, detaching or guiding braces or other support material or equipment
- ☐ Location of the power lines and the voltage of those lines (if any)
- ☐ Determine who has authority to call off the lift
- ☐ Additional topic for discussion

Work Zone Power Line Safety

Note: Work Zone Power Line Safety section to be used only when work zone is within 20ft of power lines if under 350 kV, 50ft of power lines if over 350kv but under 1000kv or the utility company's specified distance from the power lines if over 1000kV

- ☐ Work Zone Power Line Safety
  - ☐ The option selected to prevent encroachment/electrocution (#1, #2 or #3)
  - ☐ Steps taken to prevent encroachment/electrocution
  - ☐ Taglines must be non-conductive
  - ☐ Elevated warning lines
  - ☐ Proximity alarms (if used)
  - ☐ Range control device (if used)
  - ☐ Range limiter device (if used)
  - ☐ Insulated link/device (if used)
  - ☐ Dedicated Spotter (if used)
  - ☐ Power lines are to be presumed energized at all times
  - ☐ Power lines are to be presumed un-insulated at all times
  - ☐ Procedures to be followed in the event of electrical contact with a power line(s). Including:
    - ☐ Danger of touching equipment and ground simultaneously
    - ☐ Operator to remain in the cab except where there is imminent danger of fire or explosion
    - ☐ Safest means of evacuating the equipment that may be energized
    - ☐ Danger of the potential energized zone around the equipment (step potential)
    - ☐ Avoid approaching or touching the equipment or load
    - ☐ Safe Clearance distances from the power line(s) (see Table "A" below)
    - ☐ Power line(s) are to be presumed energized
    - ☐ Power line(s) are to be presumed un-insulated
    - ☐ Limitations of an insulating link/device, proximity alarm, and range control devices
    - ☐ Procedure properly ground equipment and the limitation of grounding

Table "A" Minimum Clearance Distances

Voltage (nominal, Kv, AC and DC	Minimum Clearance Distance
Up to 50	10
Over 50 to 200	15
Over 200 to 350	20
Over 350 to 500	25
Over 500 to 750	35
Over 750 to 1,000	45
Over 1,000	Specified Distance by Utility

Tilt Up Erection Safety Meeting Attendees		
Print Name:	**Signature:**	**Company:**

Each contractor working on a TGC Structural (TGCS) project will comply with OSHA, OR- OSHA, DOSH, Construction Industry Masonry Regulations, in addition to the following policies/procedures.

Limited Access Zone

- A limited access zone shall be established whenever a masonry wall is being constructed
- The limited access zone shall be established prior to the start of construction of the wall
- Non-reinforced Masonry Walls
    - The limited access zone for a masonry wall that is not reinforced and braced in accordance with requirementsmust run the entire length of the wall, and extend away from the wall a distance equal to the height of the wall plus four feet
    - A limited access zone must be located on the side of the wall not scaffolded
    - The limited access zone shall be restricted to entry by employees actively engaged in constructing the wall
    - No other employees shall be permitted to enter the zone
    - The limited access zone shall remain in place until the wall is adequately supported to prevent overturning and to prevent collapse unless the height of wall is over eight feet, in which case, the limited access zone shall remain in place until the bracing requirements have been met
- Reinforced Masonry Walls
    - A limited access zone must be established when constructing a reinforced wall
    - A limited access zone must be established before construction of the wall begins
    - A limited access zone must run the entire length of the wall, and extend away from the wall a distance equal to the height of the grout pour plus four feet
    - A limited access zone must be located on the side of the wall not scaffolded
    - All activity within the limited access zone is under the direction and control of a competent person
    - Entry into the limited access zone is limited to employees actively engaged in construction of the wall
    - No other employees are allowed to enter the zone without permission from a competent person
    - A competent person is responsible for monitoring wind speed
    - When speeds reach 25mph all braces must be examined and the site made secure
    - When wind speeds reach 35mph, all employees in the limited access zone and in proximity to the wall under construction must move to a safe location
    - The limited access zone must remain in place until any wall over eight feet in height is adequately braced or supported to prevent overturning and to prevent collapse

Bracing for Masonry Walls

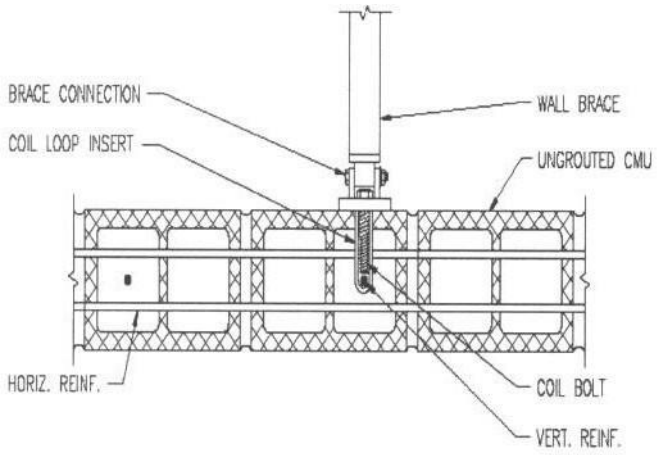
- All masonry walls over eight feet in height must be adequately braced to prevent overturning and collapse unless the wall is adequately supported
- Bracing must remain in place until permanent supporting elements of the structure are in place
- The bracing system must be designed by a registered professional engineer, or follow the following requirements
    - During construction of a masonry wall, adequate bracing must be in place to prevent the wall from overturning or collapse
- A bracing plan must be submitted by the sub for review prior to starting the masonry work

- If any of these conditions exist, the bracing is not needed:
  - The wall is eight feet or less in height
  - A qualified person demonstrates that modifications listed below are adequate when addressing these or other inherently more stable conditions:
    - Shafts
    - Infills in existing walls
    - Construction in protected areas
    - Change in wall thickness
    - Masonry pilasters
    - Corner returns, intersecting walls
  - Permanent supporting elements of the structure are in place
- Design bracing systems according to option 1 or option 2 below
- Install them under the direction of a competent person
- A registered professional engineer must design bracing when there is one or more of the following:
  - The wall is more than 24 feet in height
  - The minimum requirements of this section are not met
  - Stack bond
  - Or high wind areas
- A structural masonry wall bracing system must be designed by a qualified person
- The design and installation of the bracing system must comply with the following requirements:
  - Minimum design requirements, including minimum requirements per chapter 26 of the Uniform Building Code, for use in Options 1 or 2: Note: This information may be included in the blueprints
    - F'm 1500psi, concrete block laid in running bond pattern
    - Type S mortar
    - 60ksi rebar, with minimum placement of 2 - #4 horizontally and 1 - #5 vertically at 48" on center
    - 2000psi grout required at reinforced areas
    - Straight coil loop insert with coil bolts (safe working load = 2,250 lb.)
    - Metal concrete tilt braces
    - Wall height not to exceed 24'
  - Minimum field requirements for use in Options 1 or 2:
    - The horizontal spacing distance between two or more braces must not exceed 20'
    - The horizontal bracing distance from an end of wall or control joint must not exceed 10'
    - A qualified person must determine if walls less than 20' in length require two braces
    - The connection of the brace to the masonry wall must consist of a minimum ¾"straight coil loop insert, placed around a structural rebar located at an un-grouted bond beam
    - At least one structural rebar must be located between the attached bar and face shell that receives brace (see figure 1)
    - The base connection of brace must consist of a minimum ¾" anchor attached to either a 4" minimum thick slab or deadman
    - The brace angle must not be greater than 60 degrees from the horizontal

- The slab or deadman connection must resist a minimum 3400lbs. pullout force

- Option 1 – Low Lift Grout Walls-Bracing structural masonry walls when grout pours are limited to 5'-4" or less in height
  - A maximum of 8' of initial wall height may be laid with minimum reinforcement and then grouted
  - A maximum 5'-4" of additional wall may be laid with reinforcement located to receive straight coil loop inserts at the bond beam location
  - The first brace must be connected to the wall insert and attached to slab or deadman at base of wall
  - The reinforced section must be grouted
  - Additional wall may be construction following the steps above
  - See attached diagram of High Lift Grout sequence of construction. Low Lift is similar
- Option 2 – High Lift Grout Walls-Bracing structural masonry walls with grout pours up to 8' in height
  - A maximum 8' of the initial wall height may be laid with minimum reinforcement and then grouted
  - A maximum 5'- 4" of additional wall may be laid with reinforcement located to receive straight coil loop inserts at a bond beam location
  - Braces must be connected to coil loop inserts in the wall and attached at the base to either a slab or deadman
  - The wall may be laid and reinforced up to the grout pour
  - No more than 4' of un-grouted wall above the brace point is permitted
  - Grouting may be done after each section of wall is adequately braced
  - A maximum of 8' of additional wall height may be constructed and braced following steps above
  - See attached diagram for sequence of construction

Figure 1.



Straight coil loop insert attached to rebar with perpendicular rebar between it and face shell to receive brace.

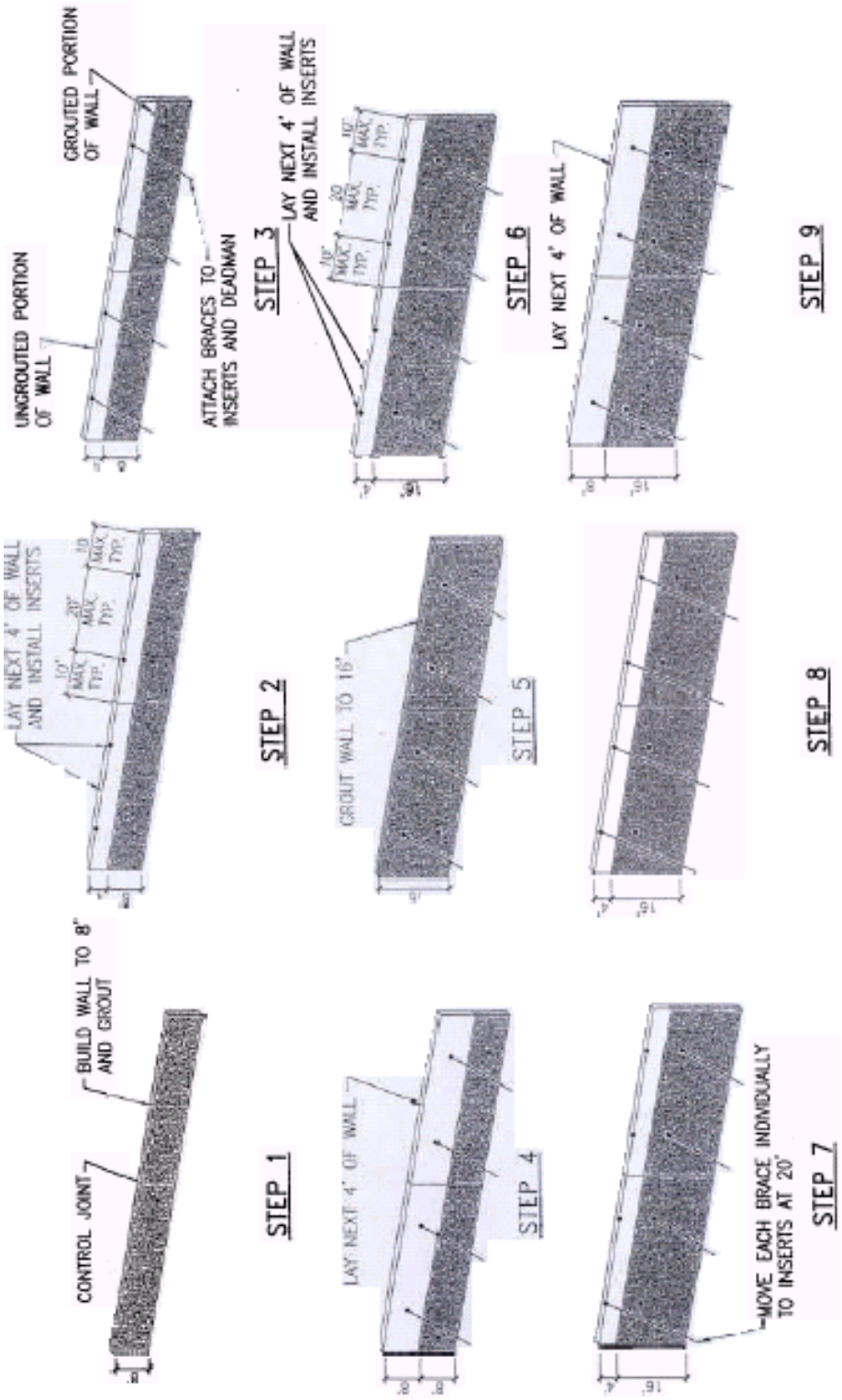


Figure 1 CMU wall bracing example

PURPOSE
This program applies to all activities in confined spaces and provides requirements to protect employees from the hazards of entering and working in and around confined spaces.

The intent of this program is to comply with the complex rules and regulations of OSHA, DOSH, and OR-OSHA. THIS POLICY IS, BY NO MEANS, INTENDED TO REPLACE THESE STANDARDS.

By following this program, TGC Structural (TGCS) will help insure a safe entry, stay and exit of confined spaces by reducing the likelihood of any injuries or accidents associated with confined space work. If any questions arise prior to or during confined space operations, contact the Safety Department for specific answers to your questions before proceeding with the confined space operation. The risks are too high to proceed with any unanswered questions.

This program and any associated permits will be made available to all employees and their representatives.

EXCEPTIONS
The following activities do not automatically fall under the OSHA confined space regulations. Each activity has its own regulations concerning entry procedures. Please follow those procedures instead. If questions arise concerning what is and is not regulated by these standards please call the safety manager.

- Construction work regulated by Division 3/P Excavations, except for entry into sanitary sewer spaces that are large enough to bodily enter
- Construction work regulated by Division 3/S Underground Construction, Caissons, Cofferdams and Compressed Air, except for sewers
- Enclosed spaces regulated by 1910.269 in Division 2/R Electric Power Generation, Transmission and Distribution, except when that standard requires compliance with this standard
- Enclosed spaces regulated by 1926.953 in Division 3/V Electric Power Generation, Transmission and Distribution, except when that standard requires compliance with this standard
- Manholes and vaults regulated by 1910.268(o) in Division 2/R Telecommunications, except when those provisions are insufficient to render the space safe to enter
- Welding in confined spaces regulated by Division 2/Q Welding, Cutting & Brazing, when the only hazards are related to the welding process

DEFINITIONS

- Acceptable Entry Conditions - The conditions that must exist in a permit-required confined space to allow safe entry and work
- Alternate Entry - An alternative process for entering a permit space under very specific conditions. The space remains a permit space even when entered using alternate entry and even though no entry permit is required in those circumstances.
- Attendant – An individual stationed outside one or more permit spaces to monitor the authorized entrants and who performs all attendants duties assigned in the employer's permit space program
- Authorized – Approved by the employer or controlling contractor
- Authorized Entrant – An employee who is authorized by the employer to enter a permit space
- Barrier - A physical obstruction that blocks or limits access.
- Blanking or Blinding – The absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.
- Calibration – The checking of a direct-reading instrument against an accurate standard (such as a calibration gas) to determine any deviation and correct for errors.
    - Note: A similar process may also be referred to as a “bump test” in which an instrument is tested with an accurate standard to ensure it is still reading correctly. For the purposes of this rule, a

"bump test" performed in accordance with the manufacturer's instructions can be used to verify calibration

- Confined Space – A space that meets ***all*** of the following:
  - Large enough and so configured that an employee can fully enter the space and perform work
  - Has limited or restricted means for entry and/or exit
  - Is not designed for continuous human occupancy
- Continuous system – A confined space that meets all of the following:
  - Part of, and contiguous with, a larger confined space (for example, storm sewers, sanitary sewers, or steam tunnels)
  - Subject to a potential release from the larger confined space that can overwhelm control measures and/or personal protective equipment, resulting in a hazard that is immediately dangerous to life and health
- Control or Controlling - Authority to regulate, direct or influence
- Controlling Contractor – The employer that has overall responsibility for construction at a worksite
  - Note: A controlling contractor who owns or manages a property is both a controlling contractor and a host employer
- Double Block and Bleed – The closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves
- Emergency - Any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit space that could endanger entrants
- Engulfment Hazard - A physical hazard consisting of a liquid or flowable solid substance that can surround and capture an individual. Engulfment hazards may cause death or serious physical harm if: the individual inhales the engulfing substance into the respiratory system (drowning, for example); the substance exerts excessive force on the individual's body resulting in strangulation, constriction, or crushing; or the substance suffocates the individual
- Entry – The action by which any part of an employee's body breaks the plane of an opening into a confined space. Entry (or entry operations) also refers to the period during which an employee occupies a confined space
- Entry Permit – Written authorization from the employer, controlling contractor, or host employer to enter a permit-required confined space and perform work
- Entry Supervisor – The person (such as the employer, foreman, or crew chief, or any other designated employee) responsible for:
  - Determining if acceptable entry conditions are present at a permit space where entry is planned
  - Authorizing entry and overseeing entry operations
  - Terminating entry as required
- Hazard – For the purpose of this rule, hazard means a physical hazard or hazardous atmosphere
- Hazard control – The action taken to reduce the level of any hazard inside a confined space using engineering methods (for example, by isolation or ventilation), and then using these methods to maintain the reduced hazard level. Hazard control also refers to the engineering methods used for this purpose. Personal protective equipment is not a hazard control
- Hazard Elimination – The action taken to remove a hazard from the work environment. For confined spaces, this includes isolation. For a hazard to be eliminated, the conditions that create or cause the hazard no longer exist within the confined space
- Hazardous Atmosphere – An existing or potential atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to escape unaided from a permit space, injury, or acute illness from one or more of the following:
  - A flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit
  - An airborne combustible dust at a concentration that meets or exceeds its lower explosive limit

        - This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet or less
    - An atmospheric oxygen concentration below 19.5 percent (oxygen deficient) or above 23.5 percent (oxygen enriched)
    - An airborne concentration of a substance that exceeds the dose or exposure limit specified by an Oregon OSHA requirement
    - An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to escape unaided, injury, or acute illness due to its health effects is not covered by this provision
    - An atmosphere that presents an immediate danger to life or health (IDLH)
- Host Employer – An employer who owns or manages the property on which confined space work is taking place
- Immediately Dangerous to Life or Health (IDLH) – Means any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space
- Inerting - The displacement of the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible
    - Note: This procedure produces an IDLH oxygen-deficient atmosphere
- Isolate or Isolation - The elimination or removal of a physical or atmospheric hazard by preventing its release into a confined space
    - Isolation includes, but is not limited to, the following methods:
        - Blanking or blinding
        - Misaligning or removing sections of lines, pipes, or ducts
        - Double block-and-bleed system
        - Machine guarding
        - Blocking or disconnecting all mechanical linkages
        - Lockout or tagout of all sources of energy
            - Note: When using lockout/tagout, you must follow all of the requirements of 1910.147, "The Control of Hazardous Energy"
- Mobile Worker – An employee who performs their work in multiple locations such as customer sites, company offices, private homes, vendor offices, or construction sites
- Monitor or Monitoring – The process used to identify and evaluate the atmosphere in a permit space after an authorized entrant enters the space
    - This is a process of checking for changes in the atmospheric conditions within a permit space and is performed in a periodic or continuous manner after the completion of the initial testing of that space
- Non-Entry Rescue – Retrieval of entrants from a permit space without entering the permit space
- Permit-Required Confined Space (PRCS or Permit Space) – A confined space that has one or more of the following characteristics:
    - Contains, or has a potential to contain, a hazardous atmosphere
    - Contains a material that has the potential to engulf an entrant
    - Has an internal configuration such that an entrant could become trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section
    - Contains any other recognized serious safety or health hazard that can inhibit an entrants ability to escape unaided
- Physical Hazard – An existing or potential hazard that can cause death or serious physical harm in or near a confined space, or a hazard that has a reasonable probability of occurring in or near a confined space, and includes, but is not limited to:
    - Explosives; mechanical, electrical, hydraulic, and pneumatic energy; radiation; temperature extremes; engulfment; noise; and inwardly converging surfaces

  - Chemicals that can cause death or serious physical harm through skin or eye contact (rather than through inhalation)
- Potential Hazards – All reasonably anticipated conditions within the space and outside the space that can adversely affect conditions within the space
- Rescue - Retrieving employees who are unable to remove themselves from a permit space
  - Rescue can be entry or non-entry, and can be conducted by the employer's employees or a third-party
- Rescue Service – The onsite or offsite personnel who the employer designates to engage in non-entry and/or entry rescue of employees from a permit space
- Retrieval system - The equipment, including mechanical retrieval devices, used for non-entry rescue of authorized entrants from a permit space
- Serious Physical Harm – An impairment in which a body part is made functionally useless or is substantially reduced in efficiency
  - Such impairment may include loss of consciousness or disorientation, and may be permanent or temporary, or chronic or acute
  - Injuries involving such impairment would usually require treatment by a physician or other licensed health-care professional while an illness resulting in serious physical harm could shorten life or substantially reduce physical or mental efficiency by impairing a normal bodily function or body part
- Testing - The process of identifying and evaluating the atmospheric hazards that entrants may be exposed to in a permit-required confined space
  - Testing includes specifying the initial tests that are to be performed in the permit space
  - Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to and during entry
- Ventilate or Ventilation - Controlling an actual or potentially hazardous atmosphere using either powered equipment, such as fans and blowers, or reliable natural air flow, or a combination of the two, to reduce an otherwise hazardous atmosphere below the level that makes it a hazardous atmosphere
  - Ventilation is a method of hazard control, not hazard elimination

EVALUATION OF WORKSITES

All worksites must be evaluated to determine if there are confined spaces on/in the worksite. You then must evaluate your confined spaces to determine if they are Permit Required Confined Spaces (PRCS).

- Evaluations must include:
  - Any known or anticipated hazard
    - If the only hazard associated with a confined space is a fall hazard, it is not covered by the Confined Space rule
    - If the space contains other hazards that make it a permit space, the fall hazard must be addressed on the permit
  - The determination from any previous evaluation of that space
  - Any precautions and procedures previously implemented for entering the space
- Employers of mobile workers (for example, contractors, electricians, plumbers) where they are not the property owner or controlling contractor are not required to perform this evaluation for the entire site
- Controlling contractors on sites with existing confined spaces are responsible for performing this determination only for the area under their control
- On sites where confined spaces are being built, the host employer or controlling contractor is responsible for ensuring this determination is accomplished only when:
  - Any of their employees enter that space
  - An agent of the employer enters that space

  - Employees of an employer accountable to that controlling contractor or host employer enter that space
  - They assume control over that space
- Controlling contractors must share all their evaluation information about confined spaces under their control with subcontractors who have employees who will be required to enter those confined spaces
  - This information must be shared prior to subcontractor employees enter the confined space
- Prevent all employees or subcontractor employees from entering a confined space until it is fully evaluated
- When a confined space is evaluated and deemed to be a permit required confined space the following must take place:
  - Develop and implement a means so all workers can identify the permit required confined space
    - Signs, labels or tags are acceptable means
  - Allow the workers or their representatives to observe the evaluation or re-evaluation of the space
  - When conditions within the confined space or permit space change re-evaluate the space
  - Take all necessary measures to prevent unauthorized workers from entering a permit spaces
- When your employees are considered mobile, you must determine if they will be exposed to permit-required confined spaces at their assigned work locations
- This determination must include information, if any, from the host employer or controlling contractor
  - Identify any physical and atmospheric hazards that make the space a permit-required confined space
  - Allow employees or their representatives to observe the evaluation or re-evaluation of the space
  - When conditions within a confined space or a permit space change, re-evaluate it
  - Take all necessary measures to prevent unauthorized employees from entering permit spaces
  - Prevent employees from entering any unevaluated confined space until it is fully evaluated
- When TGCS is required to evaluate the spaces, the Confined Space Initial Evaluation Form 4.1 will be used
- When TGCS performs the initial evaluation of spaces, then the Permit Required Confined Space Evaluation Form 4.2 will be used

MULTI-EMPLOYER WORKSITES

- If TGCS is the controlling employer, before employees of a subcontractor enter permit spaces under TGCS control, TGCS must:
  - Inform the subcontractor and their employees:
    - That the work space contains PRCS and can only be entered when the applicable regulations are met
    - Location of the spaces
    - TGCS experience with the spaces if any
    - Hazards of the spaces
    - Any procedures TGCS requires
  - Coordinate entry operations when employees of more than one subcontractor are working in or near the same PRCS
  - Discuss entry operations with subcontractor after they are complete including”
    - The program followed during permit space entry
    - Any hazards confronted in the space
    - Any hazards created in the space
- When TGCS employees enter a permit space under the control of another entity, at the conclusion of entry operations, inform the controlling contractor or host employer about the precautions and procedures you followed and any hazards that were present or that developed during entry operations

CONFINED SPACE ENTRY PROCEDURES

When workers are required to enter a permit space the following procedures must be adhered to.

- General Requirements
  - Entrants and/or their representatives shall have access to the following before entry into the PRCS:
    - Access to the written Confined Space Program
    - The completed permit
    - The results of the initial testing
  - As long as the attendant is at the PRCS, they are in charge of the immediate vicinity outside the PRCS, as well as all persons entering and exiting the area
  - If the attendant instructs everyone to exit the space, they must do so immediately
  - Canceled entry permits must be kept on file for one year
  - An effective means of communication shall be maintained between the attendant and each entrants at all times
    - This can be accomplished by sight, voice, or radio communications
  - The attendant must also have in their possession a signaling device that is capable of producing an alarm sound of 110db such as a police whistle or an air horn in case of an emergency
  - Should situations arise such as employee complaints, unauthorized entry, or discovery of additional hazards, the program shall be reviewed and changes implemented as necessary
- Eliminating Potential Hazards
  - Prior to entering a confined space all existing or potential physical hazards in or near the confined space must be eliminated
  - Prior to entering a confined space all existing or potential atmospheric hazards in or near a confined space must be eliminated or controlled
  - Existing or potential physical and atmospheric hazards includes, but is not limited to:
    - Explosives or explosive atmospheres
    - Excessive oxygen
    - Lack of oxygen
    - Mechanical
    - Electrical
    - Hydraulic
    - Pneumatic energy
    - Radiation
    - Temperature extremes
    - Engulfment
    - Inwardly converging surfaces
    - Chemicals
  - Elimination of the hazards may include, but is not limited to
    - Shutting down of systems
      - This may require a complete system walk down
    - Introducing fresh air
    - De-energizing electrical components
      - Great care must be taken when working around electrical hazards
      - All electrical components that are present may pose a hazard and the hazard must be eliminated:
        - Locking out and tagging out the system
        - All lighting and power cords must also be protected from damage by power cords must also be protected from damage
        - All portable tools shall be grounded or double-insulated, and used in conjunction with a GFCI
- Atmospheric Monitoring
  - Prior to entering a PRCS, PRELIMINARY atmospheric monitoring must be done
  - Atmospheric monitoring must be performed in three locations:

        - Top of the confined space
        - Mid way down the confined space
        - Bottom of the confined space
    - All monitoring results must be documented on the entry permit
    - Use only properly calibrated direct reading meters to test the atmosphere
    - Verify the meters are used according to the manufacturer's instructions
    - Test atmosphere before each entry into the space
    - Continuous air monitoring is required in the area where employees are working in all PRCS
    - When an entrant, their representative, attendant or entry supervisor has reason to believe that the testing or monitoring is/was inadequate, retest will be conducted
- Ventilation
    - If the atmosphere monitoring indicates a lack of oxygen, there must be at least 5 air exchanges completed by ventilating the confined space
    - If the atmosphere monitoring indicates a toxic, flammable or both, you will need to have a minimum of 10 air exchanges
    - To do this, you must know the approximate size of the confined space
    - *Example*
        - *The confined space is 20'W X 20'L X 10'H. This would give you an area of 4,000 cubic feet*
        - *If you ventilate the space with an 8" red box fan rated at 1,500 CUBIC FEET PER MINUTE, it would take just over 2 ½ minutes to make one air exchange*
        - *To make 5 air exchanges, it would take 12 ½ minutes*
        - *This would be the earliest time that anyone could enter the space*
        - *For toxic or flammable atmospheres, the 10 air exchanges needed prior to entering would increase the time to properly ventilate to 25 minutes*
    - Continuous ventilation must be maintained while workers are in the confined space, if there is any possibility that a hazardous atmosphere could develop, including by the work process, i.e. welding, grinding, etc., being performed in that space
    - If for some reason the ventilation stops, the workers must evacuate the space until it can be reestablished and the minimum per-entry air exchanges completed
    - All fans and other equipment used to remove flammable gases or vapors shall conform to NFPA requirements and not create an ignition hazard
- Maintain safe entry conditions for the duration of the entry
- When a space is too large to isolate, or part of a continuous system, such as a sewer. Continuous monitoring is required where entrants are working for the duration of the entry
- After work in the PRCS is complete, the confined space shall be secured by posting or closing the access
- The permit to enter is to be closed out by the Entry Supervisor and is to remain in file as a permanent job record
- All barriers are to be removed, and emergency services are to be contacted and informed of the job completion if, applicable

PERMIT REQUIRED CONFINED SPACE (PRCS)

- If the physical hazards cannot be eliminated and/or the atmospheric hazards cannot be controlled or eliminated then you must consider the space a PRCS
- Prior to entering a PRCS a permit must be issues by the Entry Supervisor
- Prior to issuing a permit, the Entry Supervisor must ensure:
    - The space has been evaluated for physical and atmospheric hazards as addressed above
    - The hazards of the work to be performed have been evaluated
    - Determine safe entry conditions and/or procedures
- Prior to entering a PRCS the following must be in place
    - Entry Permit

  - Documentation of the space evaluation
  - Documentation of pre-entry atmospheric monitoring
    - Documentation of training on use and maintenance of monitoring equipment
  - Documentation of hazard elimination
  - Documentation of employee training on specific duties
  - Documentation of employee training on the PRCS Program and entry permit
  - Rescue procedures
  - Procedures to eliminate unauthorized entry
- Barricades/Postings
  - During the initial set-up of the confined space, caution barrier are to be set-up around the entry of the confined space and barrier tags are to be filled out describing the work taking place
  - This area is to be maintained by the Attendant while any confined space work is in process
- This area should encompass an area large enough to prohibit the entry of any fuel burning equipment than could introduce "bad air" into the confined space through the ventilation system in use, or possibly block any exit or rescue of the confined space
- Permit must be maintained at the entry point until it is cancelled
- If conditions of the PRCS warrant an evacuation then:
  - All entrants must evacuate immediately
  - Remain outside the space until Entry Supervisor gives approval to re-enter
  - Prior to re-entry the Entry Supervisor must
    - Re-assess the conditions of the space to ensure it is safe to reenter
    - Verifies the reason for the evacuation has been eliminated
    - Verify the permit reflects the reason for evacuation
    - Verify all PRCS entry procedures, including initial air monitoring, have been performed
    - Issue a new permit
  - Entrants or their representative must have the opportunity to observe the re-evaluation process

ALTERNATE ENTRY CONFINED SPACE (AECS)

- Alternate entry cannot be used to enter a continuous system unless:
  - You can isolate the area to be entered from the rest of the space
  - Can demonstrate that the conditions that caused the hazard or potential hazard no longer exist within the system during the entry
  - Can demonstrate that engulfment cannot occur and continuous ventilation in the area to be entered is sufficient to control atmospheric hazards
- A permit required space maybe entered without a permit when:
  - All hazards have been eliminated; or
  - All physical hazards have been eliminated and all atmospheric hazards have been controlled with continuous forced-air ventilation
  - Tag out alone does not eliminate a hazard
  - Continuous forced-air ventilation does not eliminate atmospheric hazards it only controls them
- When employees enter permit spaces under "Alternate Entry" they do not need to meet the following sections:
  - Permit Required Confined Space
  - Entry Permit
  - Entry Supervisor or Attendant
  - Rescue Procedures
  - Keep Records
- Alternate entry procedures must be developed for each space
- Alternate Entry Procedures must address:
  - Who can authorize alternate entry procedure and is responsible for ensuring safe entry conditions
  - The hazards of the space

        - When fall hazards (if any) have been addressed and all other physical hazards, if any, have been eliminated and all atmospheric hazards have been eliminated, or are controlled with continuous ventilation, alternate entry is allowed
    - The methods used to eliminate hazards
    - The methods used to ensure that the hazards have been eliminated
    - The methods used to test the atmosphere within the space, where applicable, for all atmospheric hazards
    - The methods used to determine if unsafe conditions arise before or during entry
    - The criteria and conditions for evacuating the space during entry
    - The methods for training employees in these procedures.
    - The methods for ensuring employees follow these procedures
- When using ventilation to control atmospheric hazards:
    - Use only properly calibrated direct-reading meters to test the atmosphere
    - Test the atmosphere for all identified atmospheric hazards before entering the space
    - Do not allow employees to enter until testing verifies that all identified atmospheric hazards are adequately controlled by the ventilation
    - Perform continuous monitoring for all atmospheric hazards during the entry
    - Immediately evacuate the space:
        - When monitoring indicates the return of atmospheric hazards
        - Upon any failure with the direct-reading instrument
        - Upon any failure with the ventilation.
        - When a new hazard is introduced or conditions within the space change
- Provide all employees who will conduct the entry or their representatives the opportunity to observe all activities used to comply with this program
- Provide all employees who conduct entry an effective means of communication, such as a two-way radio, cell phone, or voice if other employees are present, to summon help while within the space
- When a space is evacuated, it cannot be re-entered as an alternate entry unless:
    - The conditions that necessitated the evacuation are corrected; and
    - The re-entry is treated and documented as a new entry
- Document each entry.
- This documentation must include:
    - The location of the space
    - The hazards of the space
    - The measures taken to eliminate the hazards
    - When applicable, the measures used to control the atmospheric hazards
    - When applicable, the identity of the direct-reading instruments used to test the atmosphere
    - When applicable, the results of the atmospheric testing.
    - The date of the entry
    - The duration of the entry
    - When applicable, any and all conditions that required the evacuation of the space
    - The name, title, and signature of the person responsible for ensuring the safe entry conditions
- Maintain this documentation for the duration of the entry at the location of the entry

NO ENTRY REQUIREMENT SPACES (NERS)

- If by use of the “Permit Required Confined Space Evaluation Form 4.2”, the confined space is determined to be a “No Entry Requirement Space” the following procedures apply:
    - A hazard evaluation must be performed at least daily
    - Employee training on the confined space program
    - Initial monitoring may still be required, depending on the size and shape of the confined space, conditions of the soil, location of the space, etc.
    - Situations where initial monitoring would be required include but are not limited to:

        - If when the employee stands up, their head is not above the space
        - Locations of contaminated soil are present or near
        - Locations in or near landfills
        - Locations in or near where sewer lines are known to be broken
        - Locations in or near fueling stations
    - If for any reason the employees, their representative, the foreman or the superintendent feel that there is a hazard present, the space should be evacuated and re-evaluated

PROGRAM/ENTRY PROCEDURES REVIEW

- Review the entire permit program when there is any reason to believe the employees are not adequately protected
- Situations that would trigger this review would include but are not limited to:
    - Unauthorized entry into a PRCS
    - New hazard is discovered
    - A condition prohibited by the permit or the permit program is discovered
    - Any injury or near miss occurs related to the PRCS
    - An employee reports a concern
    - Any condition that affects employee safety
- At a minimum the entire permit program must be reviewed annually
- Review permits and permit procedures for effectiveness within one year of cancellation of the permit
- If a revision of the program/entry procedures is warranted, no PRCS entries will be allowed until the revisions have been made and implemented
- Employees or their representatives must have access to these revisions

SPECIFIC DUTIES

Note: The entry supervisor can also be either the attendant or entrant, but at no time can the attendant and the entrant be the same person.

- Entry Supervisors Must:
    - Know the hazards that may be faced during entry, including information on the type of hazard, as well as signs, symptoms, and consequences of exposure to those hazards
    - Understand the means and methods to control and/or eliminate the hazards of the permit space
    - Verify, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before signing the permit and allowing entry to begin
    - Inform entrants and attendants of the hazards and conditions associated with the space and the methods used to eliminate and/or control those hazards
    - Verify all entrants and their representative have reviewed and have access to all information concerning the PRCS including but not limited to:
        - The confined space program
        - Space evaluations
        - Confined space procedures
        - PRCS Permits
        - Monitoring results
    - Terminate the entry and cancel the permit as required by the permit entry program
    - Verify that rescue services are available and that the means for summoning them are operable
    - Remove unauthorized individuals who enter or who attempt to enter the permit space during entry operations
    - Reevaluate the conditions within the space whenever responsibility for a permit space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space
- Attendant Must:

- Know the hazards that may be faced during entry, including information on the type of hazard, as well as signs, symptoms, and consequences of exposure to those hazards
- Be aware of possible behavioral effects of hazard exposure in authorized entrants
- Continuously maintain an accurate count of authorized entrants in the permit space and ensure that the means used to identify authorized entrants accurately identifies who is in the permit space
- Remain outside the permit space during entry operations until relieved by another attendant
- Ensure all actions and precautions identified on the permit are followed
- Communicate with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space
- Monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space and order the authorized entrants to evacuate the permit space immediately under any of the following conditions:
  - If the attendant detects a dangerous or hazardous condition
  - If the attendant detects the behavioral effects of hazard exposure in an authorized entrant
  - If the attendant detects a situation outside the space that could endanger the authorized entrants
  - If the attendant cannot effectively and safely perform all the duties required of the attendant
- Summon rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards
- Take the following actions when unauthorized persons approach or enter a permit space while entry is underway:
  - Warn the unauthorized persons that they must stay away from the permit space
  - Advise the unauthorized persons that they must exit immediately if they have entered the permit space
  - Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space
- Perform non-entry rescues as specified by the employer's rescue procedure
- Perform no duties that might interfere with the attendant's primary duty to monitor and protect any authorized entrant

- Authorized Entrants Must:
  - Know the hazards that may be faced during entry, including information on the type of hazard, as well as signs, symptoms, and consequences of exposure to those hazards
  - Communicate with the attendant as necessary so the attendant can monitor the entrant's status and to enable the attendant to alert entrants of the need to evacuate the space
  - Alert the attendant whenever the entrant detects a dangerous or hazardous condition or warning sign or symptom of exposure to a dangerous situation
  - Exit from the permit space as quickly as possible whenever:
    - An order to evacuate is given by the attendant or the entry supervisor
    - The entrant recognizes any warning sign or symptom of exposure to a dangerous situation
    - The entrant detects a dangerous or hazardous condition
    - An evacuation alarm is activated

RESCUE PROCEDURES

- Before entering a PRCS a means must be developed and implemented to rescue an entrant that is unable to evacuate without outside assistance
- These means must include:
  - The process for summoning rescue services
  - At a minimum, if an off-site rescue service is being considered, the employer must contact the service to plan and coordinate the evaluations required by the standard

  - Merely posting the service's number or planning to rely on the 911 emergency phone number to obtain these services at the time of a permit space emergency would not comply with the rescue requirements of the standard
  - The process for summoning emergency medical services or transporting injured entrants to a medical facility
  - If an injured entrant is exposed to a substance for which a Safety Data Sheet (SDS) or other similar written information is required to be kept at the worksite, that SDS or written information must be made available to the medical facility treating the exposed entrant
- Ensure rescue personnel can respond to a rescue call in a timely manner
  - Timeliness is based on the identified hazards of the space
  - Rescuers must be able to reach potential victims within an appropriate time frame based on the identified hazards of the permit space
- When there are multiple entrants in a permit space, the rescue plan needs to address how all entrants will be removed in a timely manner
- Ensure all rescuers, including non-entry, entry, and third-party, are knowledgeable in basic first aid and cardiopulmonary resuscitation (CPR)
- At least one member must be certified in first aid and CPR
- Additional medical training, such as oxygen administration, the use of automated external defibrillators (AEDs), and personnel decontamination should be considered
- Rescuers must practice performing permit space rescues prior to entry and no more than 12 months before an entry
- Reliance upon "self rescue" does not constitute an acceptable rescue program
- Where feasible, use non-entry retrieval systems or methods whenever an authorized entrant enters a permit space, unless it would increase the overall risk to the entrant or would not contribute to the rescue of the entrant
- For a Non-Entry Rescue use a retrieval system that meets the following requirements:
  - Each authorized entrant must use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, above the entrant's head, or at another point which you can establish presents a profile small enough for the successful removal of the entrant
  - Wristlets or ankle straps or other equally effective means may be used in lieu of the chest or full body harness if you can demonstrate that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of other methods are the safest and most effective alternative
  - Attach the other end of the retrieval line to a mechanical device or fixed point outside the permit space so that rescue can begin as soon as the attendant becomes aware that rescue is necessary
  - Ensure a mechanical device is available to retrieve personnel from vertical type permit spaces more than 5 feet (1.52 m) deep.
- Entry Rescue
  - Where non-entry rescue is not feasible or would increase the overall risk to the entrant, designate a rescue service before employees enter any permit space
  - Ensure the rescue service:
    - Can efficiently rescue employees from permit spaces
    - Has the appropriate equipment to rescue employees from all permit spaces employees enter
    - Inform the rescue service about the hazards they may confront when called to perform rescue
    - Provide the rescue service with access to all permit spaces from which rescue may be necessary
    - Is aware that they are so designated and agree to it prior to entry
    - Capable of performing all required rescue operations

- Knowledgeable in first aid and CPR, and at least one member is certified in first aid and CPR

EQUIPMENT

- When employees are required to enter a PRCS the following equipment will be provided as necessary at no cost to the employee:
  - Testing and monitoring equipment
  - Ventilation equipment
  - Communication equipment
  - Lighting equipment
  - Barriers to protect entrants from external hazards
  - Ladders or other means of safe entry
  - Rescue or emergency equipment
  - PPE
- All equipment must be maintained in accordance to the manufacturers recommendations
- All employee must be trained in the use of the equipment
- All equipment will be at no cost to the employees

HOT WORK

- Any hot work inside a confined space requires the use of an approved "HOT WORK PERMIT" prior to entry
- All combustible materials shall be protected from ignition at all times, and all flammable atmospheres shall be controlled
- If the hot work produces any toxic gases, fumes or vapors, ventilation shall be required to extract these contaminates, and/or the use of the proper respiratory protection shall be implemented
- Testing of the atmosphere inside the confined space shall be continuous as long as these conditions exist
- Compressed gas cylinders are **not** allowed inside any confined space
- They are to be located outside and monitored while in use so that they can be shut down if an emergency arises
- Any time an oxy-acetylene cutting or brazing outfit is not in use, it is to be removed from the confined space and shut down to prevent any accidental release of gases inside the confined space
- Also, any arc welding power must be shut down if an emergency develops

TRAINING PROGRAM

- Employee Training:
  - All employees who are involved with activities in a PRCS or an AECS, must be trained so they acquire the understanding, knowledge and skills necessary to safely perform their duties, according to their assigned responsibilities
  - Training must be provided:
    - For all new employees
    - Before an employee is assigned PRCS duties
    - Before there is a change in their assigned duties
    - When a new hazard is identified
    - When there are changes in the permit program
    - When the permit evaluations indicate a deficiency
    - When there is a deviation from procedures
    - When an employee's knowledge of a procedure is inadequate
  - All employee training documents shall be made available for the employees and the their representatives
  - Ensure each employee is proficient in their assigned duties

- Employee training must include:
  - The written confined space program
  - The entry permit procedures
  - Alternate entry procedures
  - How to recognize permit spaces in their work area
  - Their designated roles
  - How to identify and evaluate hazards
  - Methods to eliminate or control hazards
  - Instruction on how to use equipment associated with the space
  - Instructions on the maintenance of the same equipment
  - Instructions on how to coordinate entry with another employer
  - Understand the hazards associated with confined spaces
  - General hazards and the specific hazards for each confined space that will be entered
  - Recognition of the signs and symptoms of exposure to a hazard, and the consequences of the exposure
  - How the communications will be maintained between the attendant and the workers in the confined space
  - Emergency entry and exit procedures
  - Use of respirators and other protective equipment
  - Rescue procedures.
  - Work practices required under the permit
- Training Documentation shall contain:
  - Employees name
  - Name and signature of the trainer
  - Date of training
  - States the responsibilities for which they were trained

Any questions regarding to Permit Confined Spaces (PRCS), Alternate Entry Confined Space (AECS) or No Entry Requirement Spaces (NERS) should be directed to the Safety Department.

Please Note: Each space on the worksite must be evaluated by the use of this form. One form needs to be filled out for each space being evaluated as a confined space.

Project Name: _____

Project Address: _____

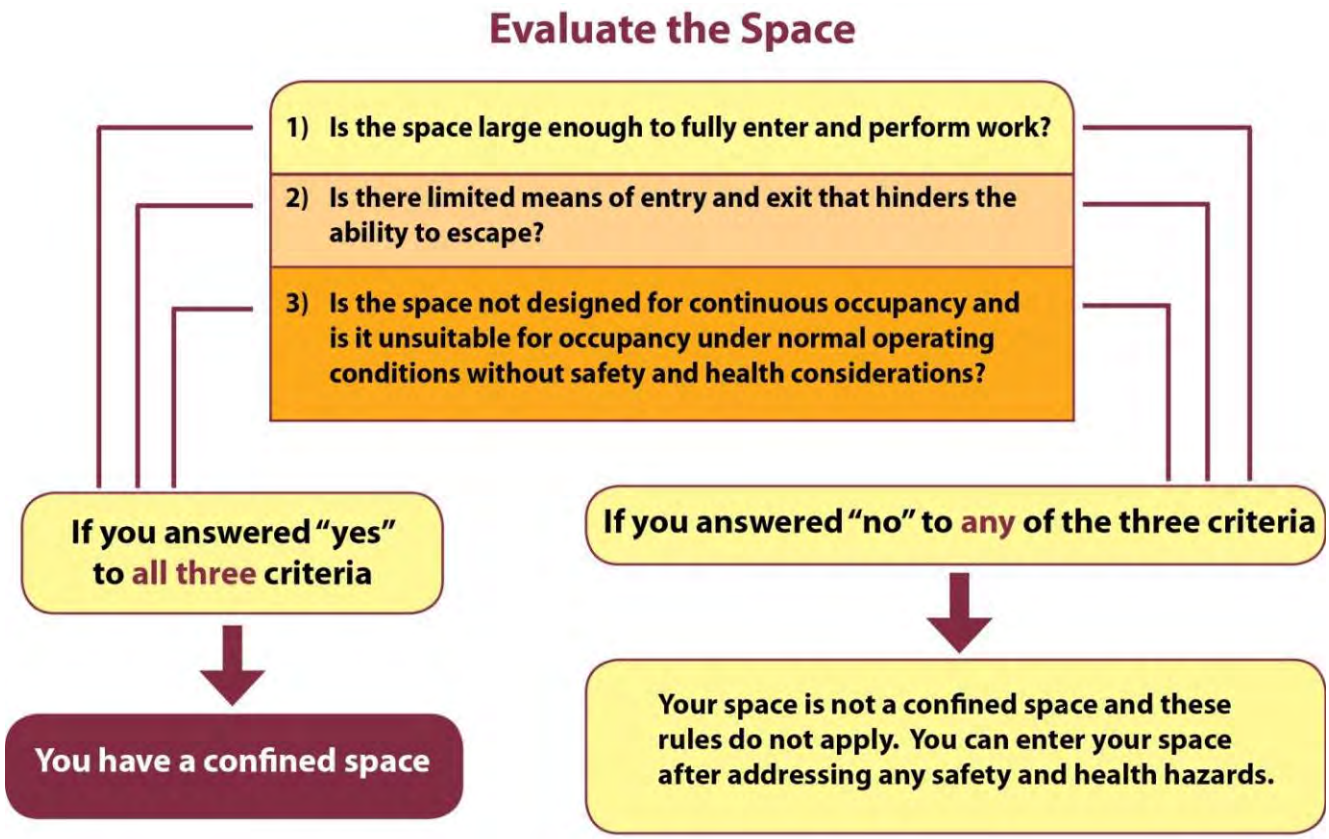
Specific location of the evaluated space: _____

Unique identifier for this pace: (if more than one is onsite) _____

Does the Host Employer have a presence on the worksite?	Yes	☐	No	☐
Is the Host Employer in control of the space?	Yes	☐	No	☐
Is the Controlling Contractor in control of the space?	Yes	☐	No	☐
Has this space been previously evaluated?	Yes	☐	No	☐
Are you the Controlling Contractor?	Yes	☐	No	☐
Are your employees expected to enter the space?	Yes	☐	No	☐

Note: If the answer to the last two questions are no, then you are not required to go any further. If the answer to either one is yes then proceed to the next step.

To evaluate the space please follow the flowchart below.



If this evaluation indicates you have a confined space at the worksite you will need to complete the Permit Required Confined Space Evaluation Form C4.2.

Is the Evaluated Space Considered a Confined Space? _____

Evaluator's Name: (Print) _____

Evaluator's Signature: _____

Evaluator's Title: _____ **Date of Evaluation:** _

Please Note: Each space on the worksite that has been evaluated by use of the Confined Space Ini

Project Name:

Project Address:

Specific location of the evaluated space:

Unique identifier for this pace: (if more than one is onsite)

Does the Host Employer have a presence on the worksite?

If yes, is the Host Employer in control of the space?

If yes, has the Host Employer established any entry procedures?

Are you the Controlling Contractor?

Is the Controlling Contractor in control of the space?

If yes, has the Controlling Contractor established entry procedures?

Are there any known or anticipated hazards?

Has this space been previously evaluated?

Have any procedures been implemented previously for this space?

Are there Physical Hazards present in the space?

(If yes, list all the physical hazards below)

Are there Atmospheric Hazards present in the space?

(If yes, list all the atmospheric hazards below)

Physical Hazards	**Atmospheric Hazard**

To evaluate the confined space please follow the flowchart below.

If this evaluation indicates you have a PRCS at the worksite you will need to determine p

Is the Evaluated Space Considered a Permit Required Confined Space?

Evaluator's Name: (Print)

Evaluator's Signature:

Evaluator's Title: **Date of Evaluation:**

tial Evaluation Form C4.1, and has been determined to be a confined space, must be evaluated

Yes ☐ No ☐
Yes ☐ No ☐
Yes ☐ No ☐
Yes ☐ No ☐
Yes ☐ No ☐
Yes ☐ No ☐
Yes ☐ No ☐
Yes ☐ No ☐
Yes ☐ No ☐
Yes ☐ No ☐

Yes ☐ No ☐

s

proper entry procedures for that space by using either the Permit Form C4.3 or the Alt

by the use of this form. One form needs to be filled out for each space that has been determi

ernate Entry Form C4.4.

ned to be a confined space.

Please Note: Each space on the worksite that has been evaluated by use of the Confined Space Initial Evaluation Form C4.1, and has been determined to be a confined space, must be evaluated by the use of this form. One form needs to be filled out for each space that has been determined to be a confined space.

Project Name: _____

Project Address: _____

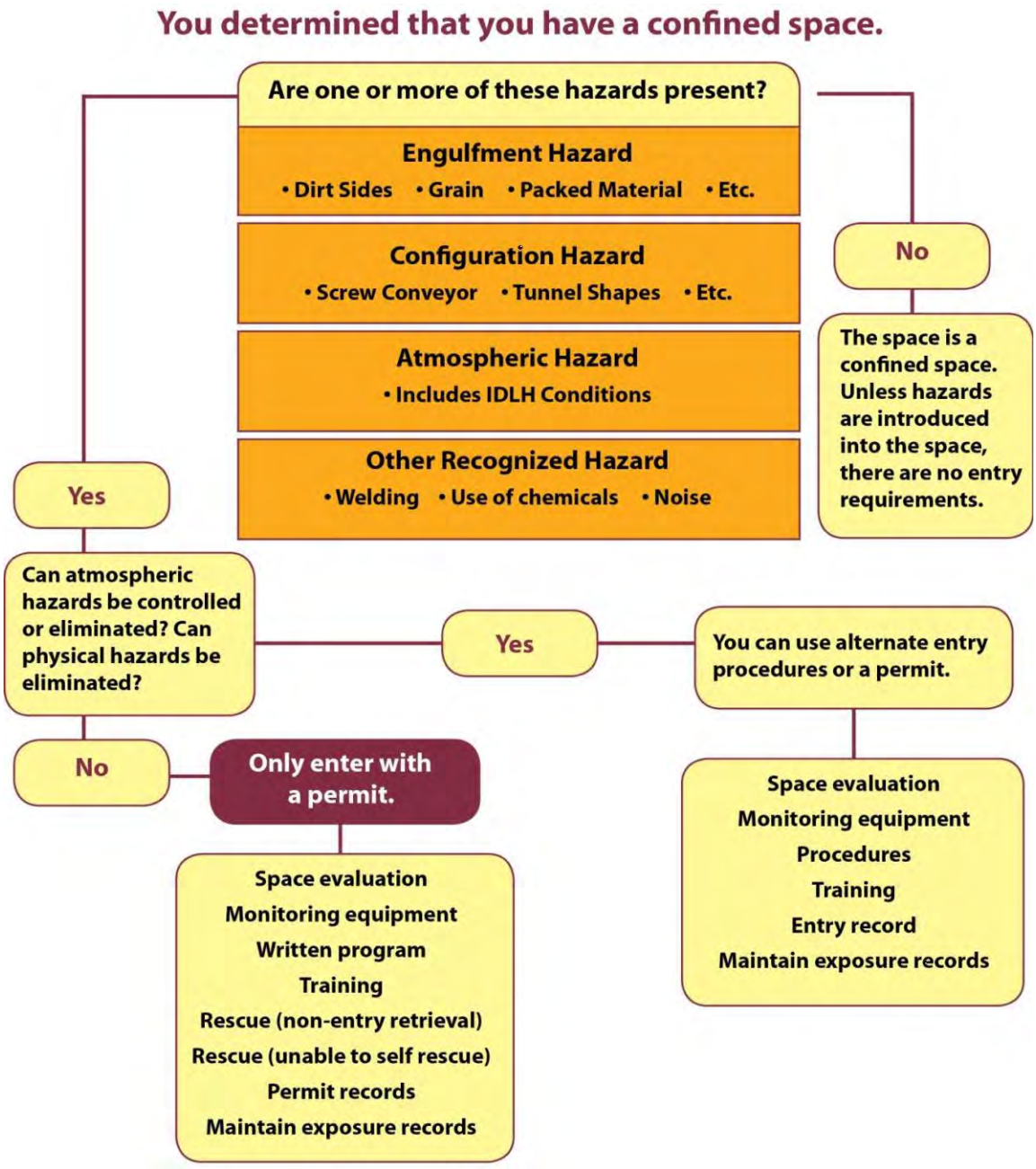
Specific location of the evaluated space: _____

Unique identifier for this pace: (if more than one is onsite) _____

Does the Host Employer have a presence on the worksite?	Yes ☐	No ☐
If yes, is the Host Employer in control of the space?	Yes ☐	No ☐
If yes, has the Host Employer established any entry procedures?	Yes ☐	No ☐
Are you the Controlling Contractor?	Yes ☐	No ☐
Is the Controlling Contractor in control of the space?	Yes ☐	No ☐
If yes, has the Controlling Contractor established entry procedures?	Yes ☐	No ☐
Are there any known or anticipated hazards?	Yes ☐	No ☐
Has this space been previously evaluated?	Yes ☐	No ☐
Have any procedures been implemented previously for this space?	Yes ☐	No ☐
Are there Physical Hazards present in the space?	Yes ☐	No ☐
(If yes, list all the physical hazards below)		
Are there Atmospheric Hazards present in the space?	Yes ☐	No ☐
(If yes, list all the atmospheric hazards below)		

Physical Hazards	Atmospheric Hazards

To evaluate the confined space please follow the flowchart below.



If this evaluation indicates you have a PRCS at the worksite you will need to determine proper entry procedures for that space by using either the Permit Form C4.3 or the Alternate Entry Form C4.4.

Is the Evaluated Space Considered a Permit Required Confined Space? _____

Evaluator's Name: (Print) _____

Evaluator's Signature: _____

Evaluator's Title: _____ **Date of Evaluation:** _

Date of Issue: _____ **Time of Issue:** _____

Date of Expiration: _____ **Time of Expiration:** _____

Project Name and Address: _____

Specific Location of the Space: _____

Unique Identifier of the Space: _____

Purpose for Entry: _____

Entry Supervisor Name: (Print) _____

Attendant Name: (Print) _____

Standby Personnel: (Print) _____

Entrants: (Print) _____

Means of Communication with Entrants: _____

Physical Hazards Identified: _____

Steps Taken to Eliminate Physical Hazards: (I.E De-energizing, LO/TO, purging, etc.)

Atmospheric Hazards Identified: (I.E. Ventilating, flushing the space, etc.)

Steps Taken to Eliminate/Control Atmospheric Hazards: _____

Acceptable Conditions to Enter: _____

Additional Permits Required for Entry: _____

Rescue Services Available: _____

How to Contact Them: _____

Other Information/Problems Encountered: _____

Equipment Used for Confined Space Evaluation, Hazard Elimination and Control, Entry :

Equipment Used:	Model # or Type	Serial #	Calibrated/Tested
Direct read gas monitor			
Ventilation Fan			
Tripod/Retractable			
Harness			
Communications			
Respirator			
Explosion Proof Electrical			
Specialized PPE			
Fire Extinguisher			

Initial Atmospheric Test:
Time: _____
Oxygen: _____**% (Must be between 19.5 and 23.5)**
Explosive: _____**% LFL**
Toxic: _____**PPM**

Name of Tester: _____

Signature of Tester: _____

Periodic atmospheric tests: (must be at least every 2 hours)

Oxygen	_____	**%**	**Time**	_____	**Oxygen**	_____	**%**	**Time**	_____
Explosive	_____	**%**	**Time**	_____	**Explosive**	_____	**%**	**Time**	_____
Toxic	_____	**PPM**	**Time**	_____	**Toxic**	_____	**PPM**	**Time**	_____
			Time	_____				**Time**	_____

Oxygen	_____	**%**	**Time**	_____	**Oxygen**	_____	**%**	**Time**	_____
Explosive	_____	**%**	**Time**	_____	**Explosive**	_____	**%**	**Time**	_____
Toxic	_____	**PPM**	**Time**	_____	**Toxic**	_____	**PPM**	**Time**	_____
			Time	_____				**Time**	_____

Name of Tester: _____

Signature of Tester _____

Signature of Entry Supervisor Approving Entry Permit:

Signature of Attendant:

Signature of Entry Supervisor Canceling/Terminating Entry Permit:

Date of Entry: _____ **Time of Entry:** _____

Date of Exit: _____ **Time of Exit:** _____

Project Name and Address: _____

Specific Location of the Space: _____

Unique Identifier of the Space: _____

Purpose for Entry: _____

Entrants: (Print)

Means of Communication with Entrants:

Physical Hazards Identified:

Steps Taken to Eliminate Physical Hazards: (I.E De-energizing, LO/TO, purging, etc.)

Atmospheric Hazards Identified: (I.E. Ventilating, flushing the space, etc.)

Steps Taken to Eliminate/Control Atmospheric Hazards: _____

Acceptable Conditions to Enter:

Conditions that would require Evacuation:

Equipment Used for Confined Space Evaluation, Hazard Elimination and Control, Entry :

Equipment Used:	Model # or Type	Serial #	Calibrated/Tested
Direct read gas monitor			
Ventilation Fan			
Communications			
Respirator			
Fire Extinguisher			

Initial Atmospheric Test:
Time: _____
Oxygen: _____**% (Must be between 19.5 and 23.5)**
Explosive: _____**% LFL**
Toxic: _____**PPM**

Name of Tester: _____

Signature of Tester: _____

Periodic atmospheric tests: (must be at least every 2 hours)

Oxygen	_____**%**	**Time**_____		**Oxygen**	_____**%**	**Time**	_____
Explosive_____	**%**	**Time**_____		**Explosive**_____	**%**	**Time**	_____
Toxic	_____**PPM**	**Time**_____		**Toxic**	_____**PPM**	**Time**	_____
		Time_____	_____				**Time**
Oxygen	_____**%**	**Time**_____		**Oxygen**	_____**%**	**Time**	_____
Explosive_____	**%**	**Time**_____		**Explosive**_____	**%**	**Time**	_____
Toxic	_____**PPM**	**Time**_____		**Toxic**	_____**PPM**	**Time**	_____
		Time_____	_____				**Time**

Name of Tester: _____

Signature of Tester _____

Name of Person Approving Entry: _____

Title of Person Approving Entry: _____

Signature of Person Approving Entry: _____

Please indicate the specific duties the trainee is being trained for. Place an X in the appropriate box. Check as many as the person is being trained for.

Legend:
ES=Entry Supervisor, AT=Attendant, AE=Authorized Entrant, AP=Assist Person, RP=Rescue Person (Non-Entry Only)

Name	Signature	Job Duties				
Please Print		ES	AT	AE	AP	RP

Name of Trainer: _____

Signature of Trainer: _____

Date of Training: _____

The intent of Crane, Rigging, Material and Personnel Hoists Program is to insure all crane operations are performed in a safe manner.

Each contractor working on a TGC Structural(TGCS) project will comply with OSHA, OR- OSHA, DOSH, Construction Industry Cranes and Derricks Regulations and shall comply with the American Society of Mechanical Engineers B30.5-2007 Safety Codes for Mobile and Locomotive Cranes, in addition to the following policies/procedures.

General Requirements

- The crane operator must have a current crane operator's certification for the size of crane in which he/she is operating
- No computer systems or limit switches are to be in a non-functioning or override position
- Mobile crane movement on site must be in accordance with manufacturer's recommendations
- An anti-two-block or warning device is required on all cranes except those engaged in driving piles
- All rigging gear must be rated for safe capacity and inspected for defects by a qualified rigger prior to each shift
- Crane Operators are not allowed to use Handheld Electronic Devices of any type while they are in the operating position of the crane unless they are being used as part of the lift
- Handheld Electronic Devices are handheld devices, including: cell phones, Blackberries, pagers, Palm Pilots, PDA's, MP3 players (or equivalent), faxes and other communication devices
- The use of a crane to hoist employees in a personnel platform is **prohibited** except by approval of the safety department and management and must be only used as a last resort
- Only Qualified Signalman will give directions to the crane operator
- Hand signals to crane operators shall be those prescribed by as the Standard Method in Appendix "A" of Subpart CC
- An illustration of the standard method hand signals shall be posted on the crane or in the immediate area of the lifting operations

Pre-Planning Crane Activities

- The Superintendent must determine early in the project what crane activities will take place on the project, what contractor is in control of the crane activities, areas of the jobsite likely to be used as a crane assembly and work zones, etc.
- The Superintendent must determine if there are power lines near for the crane activities on the project
- If yes, then the Superintendent must determine the voltage of those power lines
- The Superintendent must determine if any part of the equipment, load line, load, rigging or lifting accessories shall get closer than 20 ft. to a power line under 350kV, 50 ft. to a power line over 350kV but under 1,000kV or the utility company specified distance to a power line over 1,000kV
- If yes, then a competent person must fill out the Work Zone Power Line Safety Form located at the end of this section
- If yes, then the Superintendent must set up a meeting with the crane supplier, crane user, Safety Department and the Superintendent
- Each crane assembly area and work zone must have a hazard assessment completed by a competent person
- The Crane Assembly Area and Work Zone Hazard Assessment Form, found at the end of this section, must be used for this assessment
- The Superintendent shall gather all pertinent ground condition documents and make them available to the crane supplier, crane user and AD Director
- The superintendent will use the Superintendent's Master Crane Worksheet to document his pre-planning activities

Inspections

- No crane or hoist shall be placed in service on a TGCS project until the post crane assembly/erection inspection has been perform by the AD Director and a copy of the inspection has been submitted to the TGCS Superintendent
- No crane or hoist shall be placed in service on a TGCS project until the post crane assembly/erection wire rope inspection has been perform by the AD Director a copy of the inspection has been submitted to the TGCS Superintendent
- Daily/shift crane and wire rope inspections shall be performed, documented and a copy shall be submitted to the TGCS Superintendent weekly
- Monthly crane and wire rope inspections, if required, shall be performed, documented and a copy submitted to the TGCS Superintendent
- The annual inspection must be performed and a copy shall be submitted to the TGCS Superintendent with the lift plan

Lift Plans

- **ALL** crane lifts must be preplanned
- Pre-planning must be documented in the form of a written Crane Lift Plan. (See the TGCS Crane Lift Plan at the end of this section.)
- Written Crane Lift Plans must be submitted to the TGCS Superintendent Ten (10) days prior to the lift
- If the lift is to be conducted over several days (example steel erection) then only one lift plan needs to be submitted
- Crane Lift Plans must contain at a minimum but not limited to
    - General information of the project
    - Crane information
    - Specific lift information
    - Rigging to be used
    - Diagram of the work zone
    - Day of lift information include weather, site conditions etc.
    - Signatures of competent, qualified or certified persons involved with the lift
- Subcontractors are not required to use the TGCS Crane Lift Plan but if they elect to use their own, the information in their plan must meet or exceed the information on TGCS's Crane Lift Plan.
- All lifts that exceeds 75% rated capacity, is specified by the project team as a Critical Lift or requires two cranes to pick one piece of equipment or material, will be considered critical lifts
- The Safety Department must be involved with any Critical Lifts
- Critical lifts must have the load weight verified by some means (If the crane has load weighing capabilities then a test pick with the crane to verify the weight is acceptable. Superintendent must be the one verifying the weight)

Pre-Planning Meeting

- A Pre-Planning Meeting to discuss the Critical Lift will be held at the jobsite with all parties involved in the lift prior to the day of the lif.
- If the Critical Lift will be conducted over several days then only one Pre-Planning Meeting is required unless conditions change that would warrant an addition meetings
- A Pre-Planning Meeting to discuss power lines hazards will be held at the jobsite with all parties involved in the lift prior to the day of the lift. (This will only be required if the Work Zone Power Line Safety Form Indicates the crane activities will encroach on the clearance distance set by Subpart CC)
- A Pre-Lift meeting
    - The meeting will be conducted by the TGCS Superintendent with all members of the crew involved with the Critical Lift

- If the Critical Lift is to be conducted over more than one day then a Pre-Lift meeting must be conducted daily

Pre-Lift Meetings/Training

- A Pre-Lift Meeting and Work Zone Training session will take place immediately before **ALL** lifts
- The meeting will be conducted by the TGCS Superintendent with all members of the crew involved with the lift
- If the lift is to be conducted over several days (example steel erection) then only one Pre-Lift Meeting and Work Zone Training session need be conducted
- The Pre-Lift Meeting and Work Zone Training Checklist form, found at the end of this section, will be used to document this meeting
- All attendees must sign the Pre-Lift Meeting and Work Zone Training Checklist form
- Items to be discussed or accomplished at the Pre-Lift Meeting and Work Zone Training are at a minimum but not limited to:
  - Review Lift Plan
    - Verify crane is the one specified in the plan
    - Verify annual inspection of the crane
    - Verify operators certification for the crane used
    - Verify overhead and underground hazards
  - Review responsibilities of all parties involved in the lift
  - Discuss weather conditions at the time of the lift
  - Rigging inspection of all components
  - Determine who has the authority to call off the lift

Documentation

The following documentation should be in the Superintendent's possession prior to the lift

- Crane Assembly Area and Work Zone Hazard Assessment
- Work Zone Power Line Safety Form (If needed)
- Ground Condition Documentation for crane assembly areas and work zones
- Post assembly/erection crane and wire rope inspections
- Written Crane Lift Plan
- Annual Inspection of the Crane
- Operators Certification
- Documentation of training for Qualified Signalman
- Documentation of training for Qualified Riggers
- Documentation of rigging inspection (at pre-lift meeting)
- Documentation of daily crane and wire rope inspections
- Documentation of Pre-Planning Meeting (Critical Lift or Power Line encroachment only)
- Documentation of Pre-Lift Meeting and Work Zone Training

Material and Personnel Hoists

- Material Hoists
  - Operating rules must be posted at the operator's station along with the notice "No Riders Allowed"
- Personnel Hoists
  - Hoistway doors or gates shall be at least 6'6" high and shall have a mechanical lock, which cannot be operated from the landing side
  - All entrances to hoists must be protected by substantial gates or bars, which guard the full width of the landing entrance

- Hoists shall be inspected on a weekly basis. Hoists shall also be inspected after exposure to winds exceeding 35 mph
- All hoists shall be inspected and tested at not more than three-month intervals
- All hoists shall have a "No Smoking" sign posted in the car and a fully charged fire extinguisher available for use

Rigging

Knowledge of the equipment and materials with which we work is one of the most important factors in accident prevention. Each piece of equipment and material has been designed and developed to serve a specific purpose. Recognizing its capabilities and limitations not only improves efficiency but also eliminates hazards. It should be used as a guide in conjunction with the applicable safety regulations by contractors, supervisors, operators, riggers and employees who are concerned with or responsible for safety in construction.

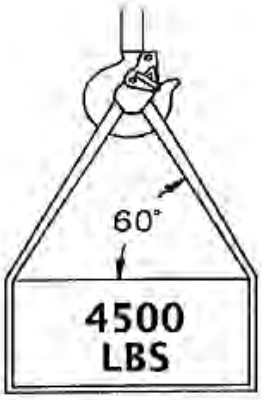
General Requirements

- Only Qualified Riggers will be allowed to perform rigging duties on TGCS Projects
- TGCS Qualified Riggers shall carry a qualification card with them at all times
- Rigging qualification training shall be renewed at least every 5 years
- Rigging and all rigging equipment shall be inspected prior to use on each shift and as necessary during its use to ensure that it is safe
- Daily sling inspections will be documented on the sling inspection sheet at the end of this section
- Defective rigging equipment shall be removed from service
- Rigging equipment shall not be loaded in excess of its recommended safe working load
- Rigging equipment, when not in use, shall be removed from the immediate work area so as not to present a hazard to employees
- Special custom design grabs, hooks, clamps, or other lifting accessories, for such units as modular panels, prefabricated structures and similar materials, shall be marked to indicate the safe working loads and shall be proof-tested prior to use to 125 percent of their rated load
- Alloy Steel Chains
  - Welded alloy steel chain slings shall have permanently affixed durable identification stating size, grade, rated capacity, and sling manufacturer
  - Hooks, rings, oblong links, pear-shaped links, welded or mechanical coupling links, or other attachments, when used with alloy steel chains, shall have a rated capacity at least equal to that of the chain
  - Job or shop hooks and links, or makeshift fasteners, formed from bolts, rods, etc., or other such attachments, shall not be used
  - Rated capacity (working load limit) for alloy steel chain slings shall conform to the values shown in OR-OSHA 1926.251 Rigging Equipment for Material Handling Table H-1
- Wire Rope Chokers
  - There are several different types of wire rope chokers. Use the correct type for your job
  - Check load rating stamped on each choker to determine its correct capacity
  - When increasing the spread or angle of chokers you decrease the capacity
  - Use spreader bars when needed
- Synthetic Web and Round Slings
  - Removal From Service
    - The sling has an identification tag is missing or in any way unreadable
    - Acid or caustic burns
    - Melting or charring of any part of the sling
    - Holes, tears, cuts or snags or embedded particles
    - Broken or worn stitching in load bearing splices
    - Excessive abrasive wear

- Knots in any part of the sling
- Excessive pitting or corrosion, or cracked, distorted fitting or any distortion of the sling
- If you see our Red Core warning yarns
- Anytime a sling is loaded beyond its rated capacity or reason

- Operating Practices
  - Determine weight of the load
  - The weight of the load shall be within the rated capacity of the sling
  - Select sling having suitable characteristics for the type of load, hitch and environment
  - Slings shall not be loaded in excess of the rated capacity
  - Consideration shall be given to the sling to load angle which affects rated capacity
  - Slings with fittings which are used as a choker hitch shall be of sufficient length to assure that the choking action is on the webbing and never on a fitting
  - Slings used in a basket hitch shall have the load balanced to prevent slippage
  - The opening in fittings shall be the proper shape and size to insure that the fitting will seat properly in the hook or other attachments
  - Slings shall always be protected from being cut by sharp corners, sharp edges, protrusions or abrasive surfaces
  - Slings shall not be dragged on the floor or over an abrasive surface
  - Slings shall not be twisted or tied into knots, or joined by knotting
  - Slings shall not be pulled from under loads if the load is resting on the sling
  - Do not drop slings equipped with metal fittings
  - Slings that appear to be damaged shall not be used unless inspected and accepted
  - The sling shall be hitched in a manner providing control of the load
  - Personnel, including portions of the human body, shall be kept from between the sling and the load, and from between the sling and the crane hook or hoist hook
  - Personnel shall stand clear of the suspended load
  - Personnel shall not ride the sling
  - Shock loading shall be avoided
  - Twisting and kinking the legs (branches) shall be avoided
  - Load applied to the hook shall be centered in the base (bowl) of hook to prevent point loading on the hook
  - During lifting, with or without the load, personnel shall be alert for possible snagging
  - The web slings' legs (branches) shall contain or support the load from the sides above the center of gravity when using a basket hitch
  - Slings shall be long enough so that the rated capacity of the sling is adequate when the angle of the legs (branches) is taken into consideration
  - Place blocks under load prior to setting down the load, to allow removal of the web sling, if applicable
  - Nylon and Polyester slings shall not be used at temperatures above of 194 degrees F (90 degrees C)
  - Exposure to sunlight or ultra-violet light degrades the strength of slings
  - Store slings in a cool, dry and dark place when not in use
- Inspections
  - Initial Inspection
    - Before any new or repaired sling is placed in service, it shall be inspected by a designated person to ensure that the correct sling is being used, as well as to determine that the sling meets the requirements of this specification and has not been damaged in shipment
  - Frequent Inspection
    - This inspection shall be made by a qualified person handling the sling each time the sling is used

        - Periodic Inspection
            - This inspection shall be conducted by designated personnel
            - Frequency of inspection should be based on:
                - Frequency of sling use
                - Severity of service conditions
                - Experience gained on the service life of slings used in similar applications
                - Periodic inspections should be conducted at least monthly
    - Sling Angle and Sling Load Chart
        - SLING ANGLE is the angle measured between a horizontal line and the sling leg or body. This angle is very important and can have a dramatic effect on the rated capacity of the sling. As illustrated, when this angle decreases, the load on each leg increases. This principle applies whether one sling is used to pull at an angle, in a basket hitch or for multi-legged bridle slings. This data is only for equally loaded sling legs. Sling angles of less than 30 degrees are not recommended



Actual Sling Capacity = factor X rated capacity

Sling Angle In Degrees	Factor
90	1.000
85	.996
80	.985
75	.966
70	.940
65	.906
60	.866
55	.819
50	.766
45	.707
40	.643
35	.574
30	.500

- Shackles – Hooks
    - Shackles
        - All shackles should have a U.L. load rating stamped on the side to indicate its capacity
        - Screw shackle have a pin which must be in all the way, then back it off ¼ turn
        - Choker must never rest on the pin
        - When doing cycle work (concrete work and spreaders) check the pins frequently or use anchor shackles
        - Anchor shackles have a bolt with nut a cotter pin, turn shackles upright
        - Never pull at an angle
    - Hooks
        - All hooks must have a safety latch
        - No open throat hooks (sorting hooks, pelican hooks) are to be used, hooks must have a latch
        - Check for cracks, wear, deformation, if there is more than 10% wear in the crown or pin hook or shackle must be thrown away
- Tag - Lines
    - All loads must have at least one tag line
    - No knots or eyes on end of line
    - Never wrap tag line around wrist or waist

  - Never attempt to stop a load that is spinning uncontrollable, instead let the operator set the load on the ground to stop the spin
- Multiple Lift Procedures (Non Steel Erection)
  - A multiple lift shall only be performed if the following criteria are met
    - A multiple lift rigging assembly is used
    - A maximum of five members are hoisted per lift
    - All employees engaged in the multiple lift have been trained in these procedures
    - No crane is permitted to be used for a multiple lift where such use is contrary to the manufacturer's specifications and limitations
  - Components of the multiple lift rigging assembly shall be specifically designed and assembled with a maximum capacity for total assembly and for each individual attachment point
  - This capacity, certified by the manufacturer or a qualified rigger, shall be based on the manufacturer's specifications with a 5 to 1 safety factor for all components
  - Each leg of the assembly must be independently supported so that if one leg fails no other load will fall
  - The total load shall not exceed
    - The rated capacity of the hoisting equipment specified in the hoisting equipment load charts
    - The rigging capacity specified in the rigging rating chart
  - The multiple lift rigging assembly shall be rigged with members
    - Attached at their center of gravity and maintained reasonably level
    - Rigged from top down
  - The members on the multiple lift rigging assembly shall be set from the bottom up
  - Controlled load lowering shall be used whenever the load is over the workers setting the components

Loads

- Flying Loads
  - Choke all possible loads
  - Do not fly rebar by the bundle wire
  - Do not fly barrels by holes cut in the top
  - Pick heavy pallets by the strong side
  - Long loads should have an appropriate length tag line for greater control
- Overhead Loads
  - Stay out from under overhead loads at all times
  - Warn other personnel if a load is coming overhead so they have time to prepare
  - The operator may sound his horn when load is coming overhead stay alert to this sound
- Landing Loads
  - Avoid pinch points (stay out of the bite)
  - Keep fingers and toes out from under the load
  - Use proper dunnage (cribbing) Do not use 2x4's on edge always lay them flat
  - Do not push or pull the load when it is in the air, let the operator move the load that is what he or she is there for. Let the machine do the work
  - Never stack anything higher than it is wide

Signaling

- Only a Qualified Signalman shall give instructions to the crane operator
- All TGC Structural Signalman shall carry a qualification card with them at all times
- Signalman qualification training shall be renewed at least every 5 years
- A Qualified Signalman must:
  - Know and understand the type of signals being used

- If hand signals are used they must know and understand the Standard Method for hand signals
- Be competent in the application of the type of signals used
- Have a basic understanding of the equipment operations and limitations, including the crane dynamics involved in swinging and stopping loads and boom deflection from hoisted loads
- Know and understand the duties of a signalman
- Be able to provide documentation indicting which form of signaling he/she is qualified to perform
- Meet all requirements for signalman specified in Subpart CC
- Signalman's qualification documentation must be submitted to the Superintendent
- Use hand signals only when conditions are such that his signals are clearly visible to the operator
- Be responsible for keeping the public and all unauthorized personnel outside of the crane's operating radius
- Direct the load so that it minimizes passing over anyone
- Inspect the load to see that it is rigged safely

- Signaling – Using the Radio
  - The radio must be tested onsite before use
  - Signal must be through a dedicated channel
  - Prior to beginning lift the crane operator, signalman and lift director (if used) must agree on voice signals to be used
  - Each voice signal must contain the following elements, given in the specific order
    - Function
    - Direction
    - Distance and/or speed
    - Function
    - Stop command
  - Use one word commands whenever possible, load up, load down, swing right, swing left, trolley in, trolley out
  - To begin the movement key in the mike, state clearly the command example "load up" will begin the load moving upward
  - To stop the movement, key in the mike, and state the command <u>without</u> the adverb Example: "load"
  - Keep the mike keyed in when signaling in the blind (when the operator cannot see you and you cannot see the operator) this will ensure that the operator will hear every command
  - When changing channels make sure the channel is clear before breaking in
- Signaling – Using Hand
  - When using hand signals, the Standard Method must be used
  - If you must use non standard signals then the signalman, crane operator, and lift director (if used) must all agree on the non standard signals
  - Make sure the operator can see you clearly
  - When signaling the crane, indicate where the load is to go in advance so the operator can get the load to its destination quickly, when load is near its destination you can fine tune location for placement

Superintendent Master Crane Worksheet

Check Off Items as They Are Completed or Cross Out If Not Applicable

- ☐ Determine and list all anticipated crane activities for the project (use next page)
- ☐ Determine and list the contractors involved with all the crane activities (use next page)
- ☐ Determine the areas of the jobsite that will be used for assembly of the crane(s) (use next page)
- ☐ Determine the work zones on the site that will be used for crane activities (use next page)
- ☐ Determine if any power lines are near the assembly areas or work zones (use next page)
- ☐ Determine the voltage of the power lines that will be near the assembly areas or work zones
  - ☐ Document attempted contacts with the utility company (page 3 this form)
- ☐ Determine if any power line safety procedures will be needed
  - ☐ If yes, set up a meeting with Safety Department, crane user, crane supplier and TGC Structural
- ☐ Determine who will perform the assembly area and work zone hazard assessments for each activity
- ☐ Determine what ground condition documentation will need to be made available to the crane supplier, crane user and AD director
- ☐ Document crane supplier, user and AD Director have seen ground condition information (page 6 this form)

Subcontractor Crane Activities

If a subcontractor is in control of the crane activities the following must be on file prior to lifting activities

- ☐ Verification of receipt of ground conditions from crane supplier and user (last page of this form)
- ☐ Crane Assembly Area and Work Zone Hazard Assessment (may use TGC Structural form C5.2)
- ☐ Work Zone Power Line Safety Form if required based on hazard assessment (may use TGC Structural form C5.3)
- ☐ Crane Lift Plan (Outside lift plans must contain all info on TGC Structural form C5.4 or use TGC Structural form C5.4)
  - ☐ Annual inspection
  - ☐ Crane operators certification
- ☐ Pre-Lift Meeting and Work Zone Training documentation (may use TGC Structural form C5.5)

Verification For Documentation

All items below need to be verified no matter who controls the crane activities

- ☐ Verify the Crane Assembly Area and Work Zone Hazard Assessment Form for each lift is on file
- ☐ Verify the Work Zone Power Line Safety Form for each lift (if needed) is on file
- ☐ Verify the Pre-Lift Meeting and Work Zone Training Checklist for each lift is on file
- ☐ Verify the Crane Lift Plan is fully filled out with all information included is on file
- ☐ Verify Crane Operators Certificate for each lift is on file
- ☐ Verify Qualified Rigger(s) for each lift have been identified and qualifications are on file (page 4 this form)
- ☐ Verify Qualified Signalman for each lift have been identified and qualifications are on file (page 5 this form)
- ☐ Verify post assembly/erection, daily/shift, monthly and annual crane inspections on file
- ☐ Verify post assembly/erection, daily/shift, monthly and annual wire rope inspections on file

Anticipated Crane Activities			
Anticipated Crane activity:			
Anticipated assembly/work zone:			
Contractor in charge of the lift:			
Who will perform hazard assess:			
Power lines near work zone:			
Date anticipated for the lift:		Date completed:	
Are all forms, hazard assessments, plans etc. in place?	Yes ☐ No ☐		

Anticipated Crane Activities			
Anticipated Crane activity:			
Anticipated work zone:			
Contractor in charge of the lift:			
Who will perform hazard assess:			
Power lines near work zone:			
Date anticipated for the lift:		Date completed:	
Are all forms, hazard assessments, plans etc. in place?	Yes ☐ No ☐		

Anticipated Crane Activities			
Anticipated Crane activity:			
Anticipated work zone:			
Contractor in charge of the lift:			
Who will perform hazard assess:			
Power lines near work zone:			
Date anticipated for the lift:		Date completed:	
Are all forms, hazard assessments, plans etc. in place?	Yes ☐ No ☐		

Utility Company Contact Log
Date attempted contact with Utility Company to determine power line voltage: ______ Method of attempted contact: Phone: ☐ E-Mail ☐ Other (List): ☐ ______
Date attempted contact with Utility Company to determine power line voltage: ______ Method of attempted contact: Phone: ☐ E-Mail ☐ Other (List): ☐ ______
Date attempted contact with Utility Company to determine power line voltage: ______ Method of attempted contact: Phone: ☐ E-Mail ☐ Other (List): ☐ ______
Date attempted contact with Utility Company to determine power line voltage: ______ Method of attempted contact: Phone: ☐ E-Mail ☐ Other (List): ☐ ______
Date attempted contact with Utility Company to determine power line voltage: ______ Method of attempted contact: Phone: ☐ E-Mail ☐ Other (List): ☐ ______
Date attempted contact with Utility Company to determine power line voltage: ______ Method of attempted contact: Phone: ☐ E-Mail ☐ Other (List): ☐ ______
Date attempted contact with Utility Company to determine power line voltage: ______ Method of attempted contact: Phone: ☐ E-Mail ☐ Other (List): ☐ ______
Date attempted contact with Utility Company to determine power line voltage: ______ Method of attempted contact: Phone: ☐ E-Mail ☐ Other (List): ☐ ______
Date attempted contact with Utility Company to determine power line voltage: ______ Method of attempted contact: Phone: ☐ E-Mail ☐ Other (List): ☐ ______
Date attempted contact with Utility Company to determine power line voltage: ______ Method of attempted contact: Phone: ☐ E-Mail ☐ Other (List): ☐ ______
Date attempted contact with Utility Company to determine power line voltage: ______ Method of attempted contact: Phone: ☐ E-Mail ☐ Other (List): ☐ ______
Date attempted contact with Utility Company to determine power line voltage: ______ Method of attempted contact: Phone: ☐ E-Mail ☐ Other (List): ☐ ______
Date attempted contact with Utility Company to determine power line voltage: ______ Method of attempted contact: Phone: ☐ E-Mail ☐ Other (List): ☐ ______

Qualified Riggers List
Qualified riggers must be trained in rigging techniques and inspections as prescribed by OSHA 29CFR§1926.1400. By listing them on this form you are attesting to the fact, they meet these criteria. List all your company's qualified riggers who will be working on this project. List must be updated as qualified riggers are added to the project.
Project Name: _____ Date: _____
Project Address: _____
Company Name: _____
Company Rep. Attesting to Training: _____
Signature of Co. Representative: _____
Qualified Rigger Name: _____
Qualified Rigger Name: _____
Qualified Rigger Name: _____
Qualified Rigger Name: _____
Qualified Rigger Name: _____
Qualified Rigger Name: _____
Qualified Rigger Name: _____
Qualified Rigger Name: _____
Qualified Rigger Name: _____
Qualified Rigger Name: _____
Qualified Rigger Name: _____
Qualified Rigger Name: _____
Qualified Rigger Name: _____
Qualified Rigger Name: _____
Qualified Rigger Name: _____
Qualified Rigger Name: _____
Qualified Rigger Name: _____

Qualified Signalperson List
Qualified signal person must be trained in signaling techniques as prescribed by OSHA 29CFR§1926.1400. By listing them on this form you are attesting to the fact, they meet these criteria. List all your company's qualified signal persons who will be working on this project. List must be updated as qualified signal persons are added to the project.
Project Name: _____ Date: _____
Project Address: _____
Company Name: _____
Company Rep. Attesting to Training: _____
Signature of Co. Representative: _____
Qualified Signal Person: _____
Qualified Signal Person: _____
Qualified Signal Person: _____
Qualified Signal Person: _____
Qualified Signal Person: _____
Qualified Signal Person: _____
Qualified Signal Person: _____
Qualified Signal Person: _____
Qualified Signal Person: _____
Qualified Signal Person: _____
Qualified Signal Person: _____
Qualified Signal Person: _____
Qualified Signal Person: _____
Qualified Signal Person: _____
Qualified Signal Person: _____
Qualified Signal Person: _____
Qualified Signal Person: _____
Qualified Signal Person: _____

Verification of Receipt of Ground Condition Information	
I acknowledge I have seen all the relevant documentation concerning the ground conditions related to the crane assembly area and work zone for my crane activities. This documentation may but not necessarily include asbuilts, soils analysis, soil bearing calculations, structural or soil engineer' calculation, compaction reports, etc.	
Crane Supplier Name:	
Crane Supplier Representative Name:	Date:
Crane Supplier Representative Signature:	
AD Director Name:	Date:
AD Director Signature:	
Crane User's Company Name:	
Crane User's Representative:	Date:
Crane User's Representative Signature:	

Crane Assembly Area and Work Zone Hazard Assessment Form

General Information

Date of assessment: _____ Date of lift: _____

Contractor controlling the lift: _____

Crane Owner/Supplier: _____

Has the crane supplier's representative visited the site to do his assessment? YES ☐ NO ☐

Make of crane: _____ Model of crane: _____

Size of crane: _____ Type of crane: _____

Max reach: _____ Max radius: _____

Will crane need assembly/disassembly? YES ☐ NO ☐

Forces expected to be generated by the outriggers: (PSI or PSF) _____

Has the outrigger pad size been calculated? YES ☐ NO ☐ Size: _____

Who is supplying the outrigger pads? Contractor ☐ Crane supplier ☐

Ground Conditions for Crane Setup and Work Zone Areas

Have the crane setup and work zone areas been properly:

Compacted: YES ☐ NO ☐ Drained: ☐ YES ☐ NO ☐

Will a slope be a factor or concern: YES ☐ NO ☐

Are there any underground utilities in either area? YES ☐ NO ☐

If underground utilities are present are they visibly marked? YES ☐ NO ☐

Site drawings, as-builts, soil analysis made available to the crane supplier? YES ☐ NO ☐

Other ground condition hazard information made available to the crane supplier YES ☐ NO ☐

Work Zone Setup

How will the Work Zone be identified?

- Demarcating boundaries ☐
- Work Zone 360° around crane ☐

If demarcating boundaries what method will be used?

- Flags ☐
- Range limit device ☐
- Range control warning device ☐

Work Zone Assessment

Power lines present in the immediate vicinity of Work Zone? YES ☐ NO ☑

Voltage of the power lines verified with the Utility Company? YES ☐ NO ☐ NA ☑

Voltage of the power lines? Under 350kV ☐ Over 350kV ☐ Over 1,000kV ☐

All of the following must be filled out. If the following are answered No or NA no further action is needed. If any are answered yes then the "Work Zone Power Line Safety Form" must be used.

If under 350kV is any part of WZ within 20ft of power lines? YES ☐ NO ☐ NA ☐

Will any part of the crane, load line, load, rigging or lifting accessories, when operated in the WZ, get closer than 20 ft. YES ☐ NO ☐ NA ☐

If over 350 kV is any part of WZ within 50ft of power lines? YES ☐ NO ☐ NA ☐

Will any part of the crane, load line, load, rigging or lifting accessories, when operated in the WZ, get closer than 50 ft. YES ☐ NO ☐ NA ☐

If over 1,000 kV has the minimum clearance distance been established by the utility company? YES ☐ NO ☐ NA ☐

What is that distance? _____ Is it in writing? YES ☐ NO ☐ NA ☐

Will any part of the crane, load line, load, rigging or lifting accessories, when operated in the WZ, get closer than that? YES ☐ NO ☐ NA ☐

Crane Pad Calculation

To determine the pad size, use Formula #1.

$$\frac{\text{F.G.}}{\text{L.B.C.}} = \text{Pad Area Required}$$

F.G. = Forces Generated from Outrigger
L.B.C. = Load Bearing Capacity of Soil
Pad Area = Size of the Outrigger Pad that is required.

Or

If you have pads available you can verify if those pads are of proper size by using Formula #2.

$$\frac{\text{Load}}{\text{Area}} = \text{PSI}$$

Load = Forces Generated from Outrigger
Area = Size of the Available Pad in Square Inches
PSI = Pressure expected to be generate on the soil.

Crane Assembly Area and Work Zone Hazard Assessor

Name of person performing the assessment: _____

Signature of person performing the assessment: _____

Work Zone Power Line Safety Form

General Information

Date of assessment: _____ Date of lift: _____

Contractor responsible for the lift: _____

Crane Owner/Supplier: _____

Make of crane: _____ Model of crane: _____

Size of crane: _____ Type of crane: _____

Max reach: _____ Max radius: _____

Power Line Assessment

Note: If the crane operations will require work to be performed below the power line(s) the Safety Department must be consulted!

Voltage of the power lines verified with the Utility Company? YES ☐ NO ☐ NA ☐

Voltage of the power lines? Under 350kV ☐ Over 350kV ☐ Over 1,000kV ☐

If >1,000kV, has the minimum clearance distance been established by the utility company? YES ☐ NO ☐ NA ☐

If yes, what is that distance? _____ Is it in writing? YES ☐ NO ☐ NA ☐

If > 1,000kV, will any part of the crane, load line, load, rigging or lifting accessories, when operated in the WZ, get closer than the distance established by the utility company? YES ☐ NO ☐ NA ☐

If >350kV, will any part of the crane, load line, load, rigging or lifting accessories, when operated in the WZ, get closer than 50 ft. YES ☐ NO ☐ NA ☐

If <350 kV, will any part of the crane, load line, load, rigging or lifting accessories, when operated in the WZ, get closer than 20 ft. YES ☐ NO ☐ NA ☐

Note: If the answers to the three questions above are all NO or NA then stop here. If not then proceed with the assessment.

Which option will be used to provide worker safety in the work zone? (See below for details of each option)

Option #1 ☐

Option #2 ☐

Option #3 ☐

Option #1 – De-Energize And Grounded

Have all the power lines that pose a hazard to the work zone been de-energized? YES ☐ NO ☐

Have all the power lines been confirmed de-energized by the utility company? YES ☐ NO ☐

Have the power lines been visibly grounded at the work site? YES ☐ NO ☐

Note: If the answers to the three questions above are all YES, then stop here. If not, then Option #2 or #3 must be selected and the rest of the form must be used.

Option #2 – 20 Foot Clearance

If option #2 is select you must ensure that no part of the crane, load line, load, rigging or lifting accessories gets closer than 20 ft. for 350kV power line(s), 50 ft. for >350 but <1,000kV power line(s) or minimum clearance distance established by utility for >1,000kV power line(s), by implementing the measures specified below: (Item #1, 2, 3 and one of 4, unless noted otherwise)

1. ☐ Conduct a planning meeting with the operator and all workers in the work zone to review:
   - ☐ The location of the power line(s)
   - ☐ The steps that will be implemented to prevent encroachment and/or electrocution
2. ☐ All tag lines used must be non-conductive
3. ☐ Erect and maintain an elevated warning line or line of signs equipped with flags or similar high-visibility markings at the specified distance required, as listed above, from the power line(s). Lines must be in view of the operator.

Note: If the operator is unable to see the elevated warning lines, two of the following options must be used. One of which must be a dedicated spotter.

4. ☐ And implement one of the following: (please indicate which option(s) will be used)
   - ☐ Proximity alarm set to give the operator sufficient warning to prevent encroachment
   - ☐ Device that automatically warns operator when to stop movement (range control device)
   - ☐ Device that automatically limits the range of movement, set to prevent encroachment
   - ☐ Insulating link/device installed at a point between the end of the load line and the load
   - ☐ Provide a dedicated spotter who must be:
     - ☐ In continuous contact with the operator
     - ☐ Equipped with a visual aid to assist in identifying minimum clearance distance
     - ☐ Positioned to effectively gauge the clearance distance
     - ☐ Where necessary, use equipment that enables him to communicate with operator
     - ☐ Give timely information to the operator so the clearance distance is maintained

Option #3 – Table "A" Clearances

If option #3 is select you must:

- ☐ Determine the power line(s) voltage and minimum approach distance permitted under Table "A"
- ☐ Determine if any part of the crane, load line, load, rigging or lifting accessories while operating up to the equipment's maximum working radius in the work zone could get closer than the minimum approach distance of power line(s) permitted under Table "A" (See below for Table "A")
  - ☐ If yes, then ensure that no part of the crane, load line, load, rigging or lifting accessories gets closer to the power line(s) than the minimum approach distance by implementing the measures specified below

1. ☐ Conduct a planning meeting with operator and all workers in the work zone to review:
   - ☐ The location of the power line(s)
   - ☐ The steps that will be implemented to prevent encroachment and/or electrocution
2. ☐ All tag lines used must be non-conductive
3. ☐ Erect and maintain an elevated warning line or line of signs equipped with flags or similar high-visibility markings at the minimum approach distance from the power line(s) as specified in Table "A". (See below for Table "A") Lines must be in view of the operator.

Note: If the operator is unable to see the elevated warning lines, two of the following options must be used. One of which must be a dedicated spotter.

4. ☐ And implement one of the following: (please indicate which option(s) will be used)
   - ☐ Proximity alarm set to give the operator sufficient warning to prevent encroachment
   - ☐ Device that automatically warns operator when to stop movement (range control device)
   - ☐ Device that automatically limits the range of movement, set to prevent encroachment
   - ☐ Insulating link/device installed at a point between the end of the load line and the load
   - ☐ Provide a dedicated spotter who must be:
     - ☐ In continuous contact with the operator
     - ☐ Equipped with a visual aid to assist in identifying minimum clearance distance
     - ☐ Positioned to effectively gauge the clearance distance
     - ☐ Where necessary, use equipment that enables him to communicate with operator
     - ☐ Give timely information to the operator so the clearance distance is maintained

Note: If for any reason during the crane operations, any part of the crane, load line, load, rigging or lifting accessories will become closer than the minimum approach distance of power line(s) permitted under Table "A" the Safety Department must be consulted.

Table "A" Minimum Clearance Distances

Voltage (nominal, Kv, AC and DC	Minimum Clearance Distance
Up to 50	**10**
Over 50 to 200	**15**
Over 200 to 350	**20**
Over 350 to 500	**25**
Over 500 to 750	**35**
Over 750 to 1,000	**45**
Over 1,000	**Specified Distance by Utility**

Other Information

- ☐ If working around transmitter or communication towers the following must be met
  - ☐ The equipment must be grounded
  - ☐ Taglines must be non-conductive

Training

Training must be provided for the operator and anyone working in the designated work zone. The training must include at a minimum the following items:

- ☐ Procedures to be followed in the event of electrical contact with a power line(s). Including:
  - ☐ Information regarding the danger of electrocution from the operator simultaneously touching the equipment and the ground.
  - ☐ The importance to the operator to remain in the cab except where there is imminent danger of fire or explosion
  - ☐ Safest means of evacuating the equipment that may be energized
  - ☐ The danger of the potential energized zone around the equipment (step potential)
  - ☐ The need for the crew in the area to avoid approaching or touching the equipment or load
  - ☐ Safe Clearance distances from the power line(s)
  - ☐ Power line(s) are to be presumed energized
  - ☐ Power line(S) are to be presumed un-insulated
  - ☐ Limitations of an insulating link/device, proximity alarm, and range control devices
  - ☐ Procedure to be followed to properly ground equipment and the limitation of grounding

Work Zone Power Line Hazard Assessor

Name of person performing the assessment: _____

Signature of person performing the assessment: _____

Crane Lift Plan

General Information	
Project Name:	
Project Address:	
Superintendent:	
Project Number:	Date :

Crane Information			
Crane Owner/Supplier:			
Crane contact person:			
Make of crane:		Model of crane:	
Size of crane:		Type of crane:	
Max reach:		Max radius:	

Has all ground condition information for the assembly area and work zone been made available to crane owner, crane user and AD director?	YES ☐	NO
Will the crane need assembly/disassembly?	YES ☐	NO
Will the manufacturer's procedures be used for assembly/disassembly?	YES ☐	NO
Will the employer's procedures be used for assembly/disassembly?	YES	NO
Has post assembly inspection been completed and verified with documentation?	YES ☐	NO ☐
Has the wire rope inspection been completed and verified with documentation?	YES	NO
Annual crane inspection has been verified and is attached?	YES ☐	NO ☐
Crane operator license has been verified and is attached?	YES ☐	NO ☐
Will additional outrigger plates, pads, block or cribbing be needed for lift?	YES ☐	NO ☐
Who will supply outrigger plates, pads, blocking or cribbing? Contractor	Crane Supplier ☐	☐

Lift Information			
Contractor in charge of the lift:			
Contact person for that contractor:			
Date of lift:		Time of lift:	
Specific jobsite area for the lift:			
Description of load:			
Load Weight (lb)		Rigging Weight (lb)	
Block Weight (lb)		Total Weight (lb)	
Radius (ft)		Boom angle (^{0})	
Chart indicates %			

Has the crane assembly area and work zone hazard assessment been complete?	YES ☐	NO ☐
Is the crane assembly area and work zone hazard assessment form attached?	YES ☐	NO ☐
Based on either assessment, are there power line hazards to address?	YES ☐	NO ☐
If yes, has the work zone power line safety form been filled out and attached?	YES ☐	NO ☐
Are the requirements from the work zone power line safety form completed?	YES ☐	NO ☐
Based on the work zone power line safety form, will a dedicated spotter be used?	YES ☐	NO ☐
If yes, has qualification been verified?	YES ☐	NO ☐
Will two or more cranes be used for this lift?	YES ☐	NO ☐
Load, rigging, etc. equal to or greater than 75% of load chart	YES ☐	NO ☐
If yes, has the weight of the load been verified? (cut sheet, weighed on scale, etc)	YES ☐	NO ☐
If yes, is there documentation attached?	YES ☐	NO ☐

Rigging To Be Used							
Type of rigging to be used:	Wire Rope	☐	Nylon	☐	Chain	☐ Other	☐
Rigging configuration:	Straight	☐	Sling	☐	Basket	☐	
Rigging load rating:							
Will a shackle(s) be used?	YES ☐	NO ☐		Shackle load rating:			
Will a spreader bar be used?	YES ☐	NO ☐		Spreader bar load rating			
Taglines used?	YES ☐	NO ☐		Tagline material:			

Diagram of Work Zone
Note: You don't have to use this sheet for your diagram <u>but a diagram must be included with this plan.</u>
Draw a diagram of the work zone or provide on a separate sheet, including but not limited to; location, radius, overhead hazards, buildings, underground hazards, trees, swing zones, delivery truck, load, work zone demarcation, power lines, etc.

Day of Lift			
Crane outriggers fully extended?	☐	Crane is set up level?	☐
Is work zone demarcation completed?	☐	Are WZ electric safety procedures in place?	☐
Crane outrigger pads are in place?	☐	Crane swing zone protected?	☐
Anti Two-block device is in place?	☐	Anti Two-block device has been tested?	☐
Crane daily inspection performed?	☐	Crane daily inspection document on file?	☐
Wire rope daily inspection performed?	☐	Wire rope daily inspection document on file?	☐
Fire Extinguisher in crane?	☐	Lift Director identified? (if needed)	☐
Qualified rigger(s) indentified?	☐	Rigging has been inspected and documented?	☐
Qualified signalman identified?	☐	Signalman qualifications verified?	☐
Communication means identified/agreed to	☐	Communication means tested?	☐
Qualified spotter (if needed) identified?	☐	Spotter (if needed) qualifications verified?	☐

Weather conditions:	Clear	Over cast	Drizzle	Rain	Fog	Snow	Ice	Sun
Wind:	0 – 5 MPH		6 to 10 MPH		11 to 15 MPH		Over 15 MPH	

Maximum wind speed allowed for the lift:

Who determined the maximum wind speed? _____

Signatures	N – Name S - Signature
Person performed work zone hazard assessment	N
	S
AD Director (if needed)	N
	S
Person performing post assembly inspection	N
	S
Person verified weight for critical lift (if needed)	N
	S
Qualified rigger performing inspection	N
	S
Qualified spotter (if needed)	N
	S
Lift Director (if needed)	N
	S

Other Considerations					
Pre-Task Plan been completed:	YES ☐	NO ☐	**If NO stop and complete before lift**		
Is public exposed to the lift?	YES ☐	NO ☐	How?		
Public exposures addressed?	YES ☐	NO ☐	How?		

FINAL APPROVAL for LIFT			
TGCS Superintendent:		Date:	

Pre-Lift Meeting and Work Zone Training Checklist

Job Name: _____ **Date:** _____

Discussion Topics And Training

- ☐ Results of the Work Zone Hazard Assessment
  - ☐ Ground Conditions (underground utilizes, tanks, soil analysis, compaction, etc)
  - ☐ Work Zone identification method
    - ☐ Demarcation Lines
    - ☐ 360^0 around the crane at the maximum working radius of the crane including rigging and load
  - ☐ Crane operator is prohibited from exceeding these boundaries
- Hazard posed by the rotating superstructure
- Barricading the swing area of the crane
  - Procedures to enter barricaded area
    - ☐ Inform the operator before entering barricaded area
    - ☐ Operator shall not move the crane while the worker is in the barricaded area
    - ☐ Inform the operator when worker is clear of the barricaded area
- Potential pinch or crush points in the work zone
- Hazards of flying loads overhead
- When overhead loads are unavoidable the procedures established as a warning (I.E whistle blown during lift)
- ☐ Fall Zone: Means the area (including but not limited to the area directly beneath the load) in which it is reasonably foreseeable that partially or completely suspended materials could fall in the event of an accident
  - Only person(s) receiving the load are permitted in the fall zone (none tilt-up lifts)
  - Only person(s) considered essential to the lift are permitted in the fall zone (tilt-up lifts)
  - Person(s) consider essential during a tilt-up
    - ☐ Person(s) guiding the panel
    - ☐ Person(s) directing the movement of the panel
    - ☐ Person(s) attaching, detaching or guiding braces or other support material or equipment
  - ☐ At no time is anyone permitted to be directly under the load
- Location of the power lines and the voltage of those lines (if any)
- Review the responsibilities of all parties involved
- Weather conditions
- ☐ Determine who has authority to call off the lift
- ☐ Additional topic for discussion
  - ☐ _____
  - ☐ _____
  - ☐ _____
  - ☐ _____
  - ☐ _____

Work Zone Power Line Safety

Note: Work Zone Power Line Safety section to be used only when work zone is within 20ft of power lines if under 350 kV, 50ft of power lines if over 350kv but under 1000kv or the utility company's specified distance from the power lines if over 1000kV

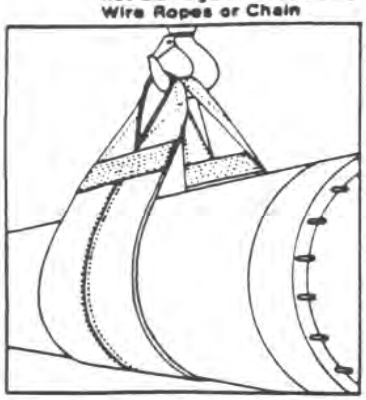
- ☐ Work Zone Power Line Safety
  - ☐ The option selected to prevent encroachment/electrocution (#1, #2 or #3)
  - ☐ Steps taken to prevent encroachment/electrocution
  - ☐ Taglines must be non-conductive
  - ☐ Elevated warning lines
  - ☐ Proximity alarms (if used)
  - ☐ Range control device (if used)
  - ☐ Range limiter device (if used)
  - ☐ Insulated link/device (if used)
  - ☐ Dedicated Spotter (if used)
  - ☐ Power lines are to be presumed energized at all times
  - ☐ Power lines are to be presumed un-insulated at all times
  - ☐ Procedures to be followed in the event of electrical contact with a power line(s). Including:
    - ☐ Danger of touching equipment and ground simultaneously
    - ☐ Operator to remain in the cab except where there is imminent danger of fire or explosion
    - ☐ Safest means of evacuating the equipment that may be energized
    - ☐ Danger of the potential energized zone around the equipment (step potential)
    - ☐ Avoid approaching or touching the equipment or load
    - ☐ Safe Clearance distances from the power line(s) (see Table "A" below)
    - ☐ Power line(s) are to be presumed energized
    - ☐ Power line(s) are to be presumed un-insulated
    - ☐ Limitations of an insulating link/device, proximity alarm, and range control devices
    - ☐ Procedure properly ground equipment and the limitation of grounding

Table "A" Minimum Clearance Distances

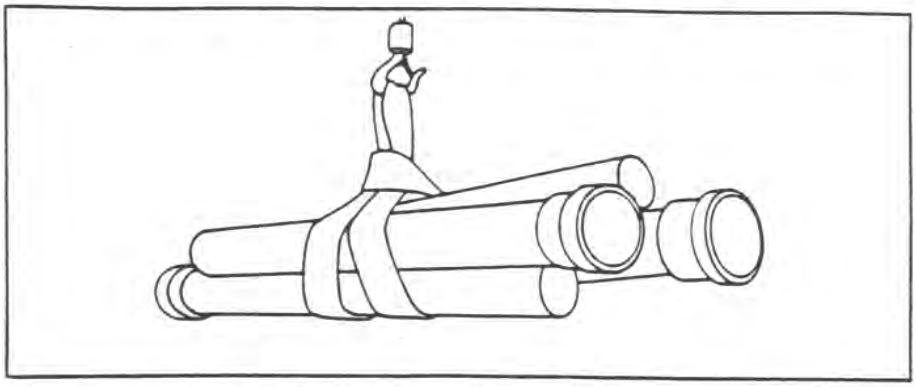
Voltage (nominal, Kv, AC and DC	Minimum Clearance Distance
Up to 50	10
Over 50 to 200	15
Over 200 to 350	20
Over 350 to 500	25
Over 500 to 750	35
Over 750 to 1,000	45
Over 1,000	Specified Distance by Utility

Pre-Lift Safety Meeting Attendees		
Print Name:	**Signature:**	**Company:**

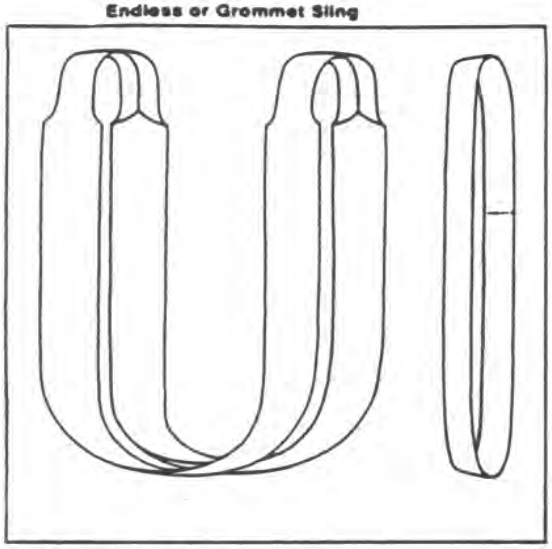
Fig. 6.22 Synthetic Web Slings do not Damage or Crush Like Wire Ropes or Chain



Pipe handling illustrates the tendency of webbing slings to mold themselves to the load. This allows handling irregularly shaped loads securely.



Endless or Grommet Sling



Standard Eye and Eye Slings

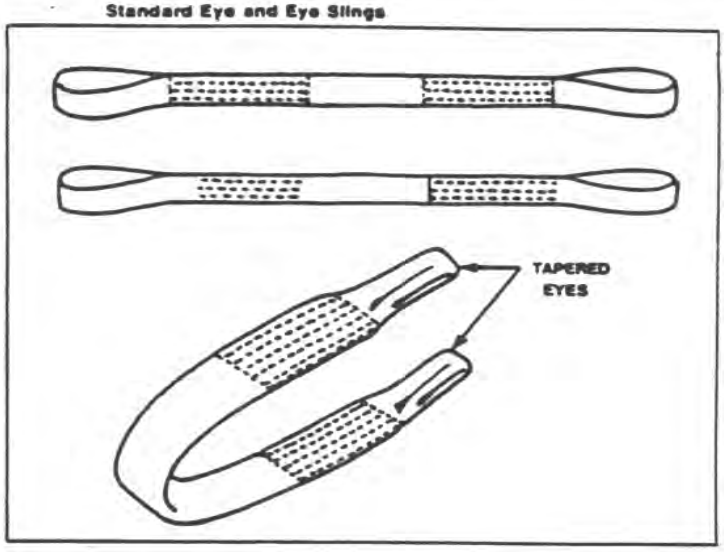
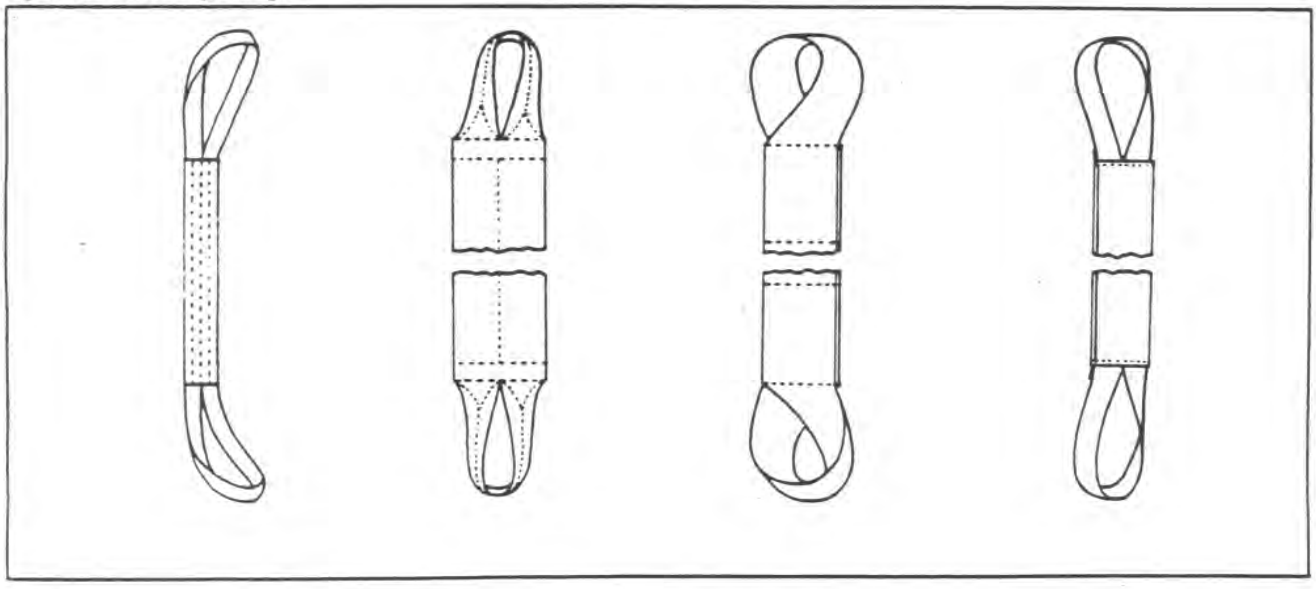
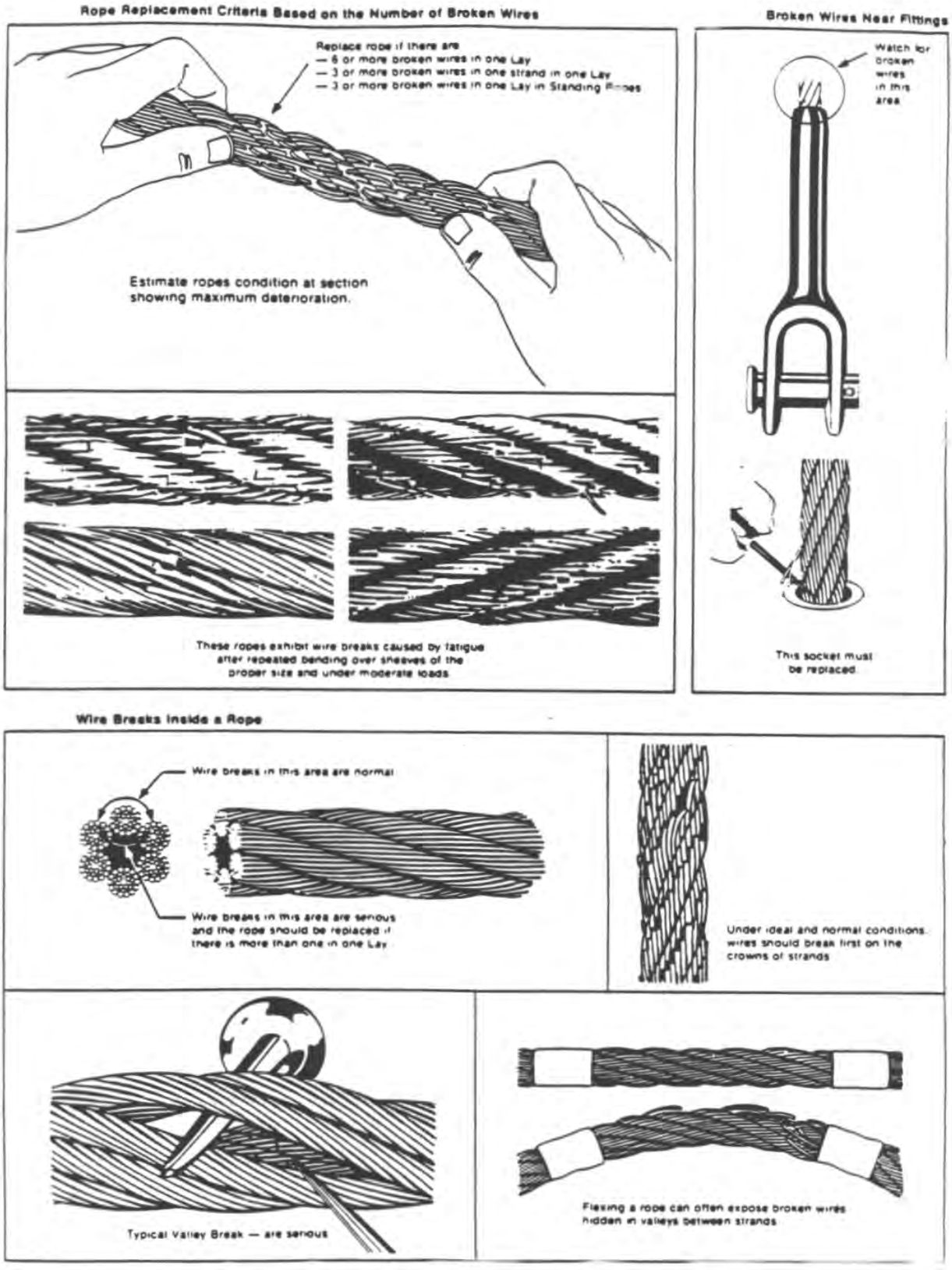


Fig. 6.26 Twisted Eye Slings




Rope Replacement Criteria Based on the Number of Broken Wires
Replace rope if there are
— 6 or more broken wires in one Lay
— 3 or more broken wires in one strand in one Lay
— 3 or more broken wires in one Lay in Standing Ropes
Estimate ropes condition at section showing maximum deterioration.
These ropes exhibit wire breaks caused by fatigue after repeated bending over sheaves of the proper size and under moderate loads.
Broken Wires Near Fittings
Watch for broken wires in this area
This socket must be replaced.
Wire Breaks Inside a Rope
Wire breaks in this area are normal
Wire breaks in this area are serious and the rope should be replaced if there is more than one in one Lay
Under ideal and normal conditions, wires should break first on the crowns of strands
Typical Valley Break — are serious
Flexing a rope can often expose broken wires hidden in valleys between strands

SHACKLES:

There are two types of shackles commonly used in rigging. They are the anchor (bow type) shackle and chain ("D" type) shackle both of which are available with screw pins or round pins.

Shackles, like most other rigging hardware are sized by the diameter of the steel in the bow section rather than the pin size. They should only be of forged alloy steel.

Never replace the shackle pin with a bolt, only the proper fitted pin should be used. Bolts are not intended to take the bending that is normally applied to the pin.

Never use a shackle if the distance between the eyes is greater than listed in the following table. All pins must be straight and all screw pins must be completely seated. Cotter pins must be used with all round pin shackles.

Shackles worn in the crown or the pin by more than 10% of the original diameter should be destroyed.

Never allow a shackle to be pulled at an angle because the capacity will be tremendously reduced. Centralize whatever is being hoisted on the pin by suitable washers or spacers.

Do not use screw pin shackles if the pin can roll under load and unscrew.

SHACKLES (ALL TYPES)
— Weldless Construction
— Forged Alloy Steel

Stock Diameter (Inches)	Inside Width At Pin (Inches)	Max. Safe Working Load Single Vertical Pull (Pounds)
3/16	3/8	665
1/4	15/32	1,000
5/16	17/32	1,500
3/8	21/32	2,000
7/16	23/32	3,000
1/2	13/16	4,000
5/8	1 1/16	6,500
3/4	1 1/4	9,500
7/8	1 7/16	13,000
1	1 11/16	17,000
1 1/8	1 13/16	19,000
1 1/4	2 1/32	24,000
1 3/8	2 1/4	27,000
1 1/2	2 3/8	34,000
1 3/4	2 7/8	50,000
2	3 1/4	70,000
2 1/2	4 1/8	100,000
3	5	150,000
3 1/2	5 3/4	200,000
4	6 1/2	260,000

EYE BOLTS:

It is recommended that all eye bolts and ring bolts used for hoisting be of forged alloy steel and equipped with shoulders or collars. The plain or shoulderless eye bolt is fine for vertical loading but as soon as it is loaded at an angle it is subjected to bending and the load it can safely carry is severely reduced.

Even when equipped with shoulders, the safe working loads of eye bolts and ring bolts are reduced with angular loading. When installed the shoulder must be at right angles to the axis of the hole and must contact the working surface and the nuts must be properly torqued. Washers may have to be used to ensure that the shoulders are firmly in contact with the working surface. The tapped hole for screwed eye bolts (body bolts) should have a minimum depth of one and one-half times the bolt diameter and must be a good fit for the screwed shank of the eye bolt.

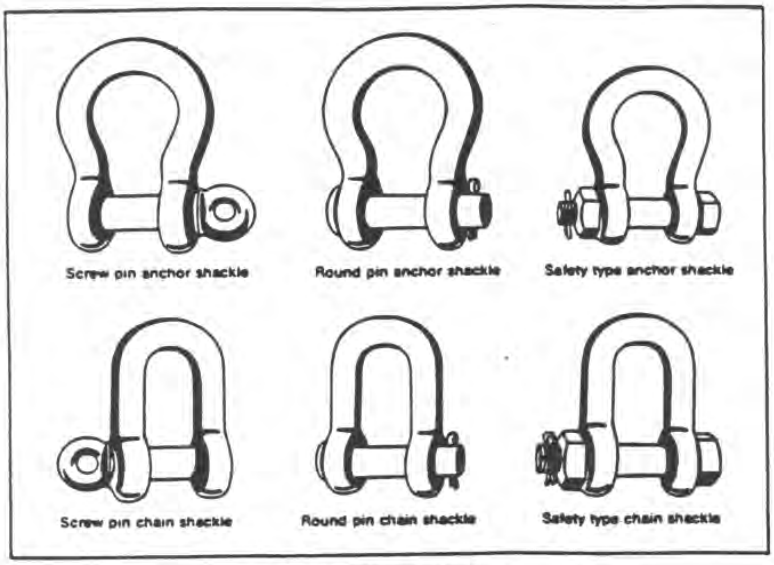
To keep the bending to a minimum, the loads should always be applied to the plane of the eye, never in the other direction. This is particularly important when bridle slings are used because an angular pull is always developed in the eye bolts, unless a spreader bar is used as part of the sling.

Never insert the point of a hook in an eye bolt, always use a shackle.

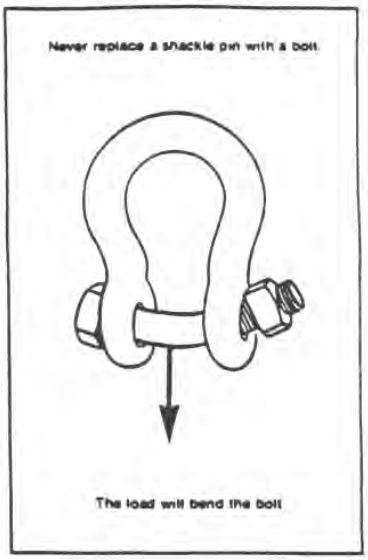
Do not use a sling reeved through an eye bolt or reeved through a pair of eye bolts. One single leg only should be attached to each eye bolt.

Where eye bolts cannot be kept in line with each other and at the same time tightened, thin washers or shims may be inserted under the collars to permit the eye bolt being tightened and turned in line with each other.

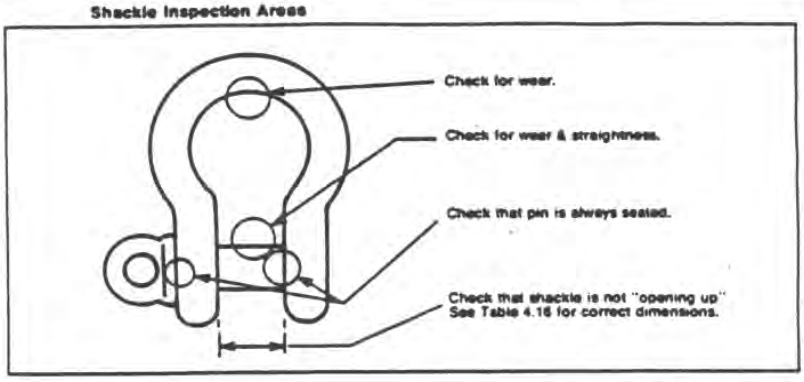
The same precautions apply to ring bolts and the working loads are generally the same as for the eye bolts.



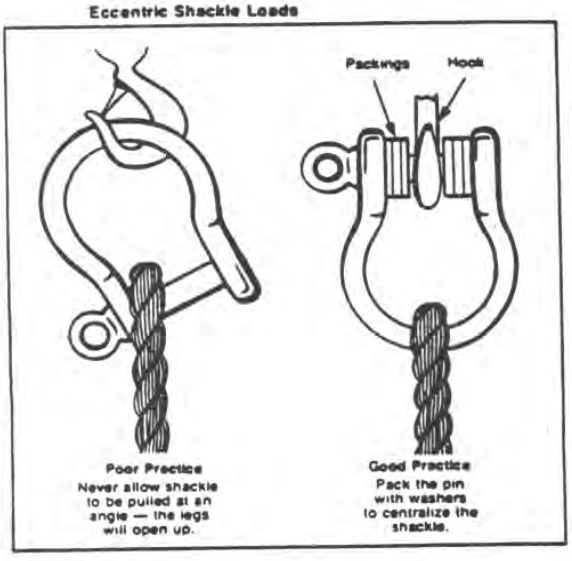
Replacing Shackle Pins



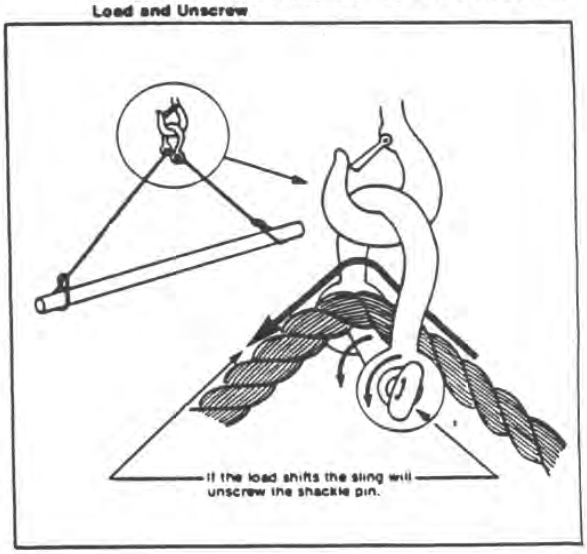
Shackle Inspection Areas



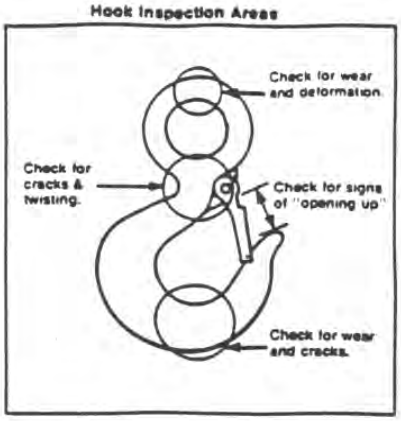
Eccentric Shackle Loads



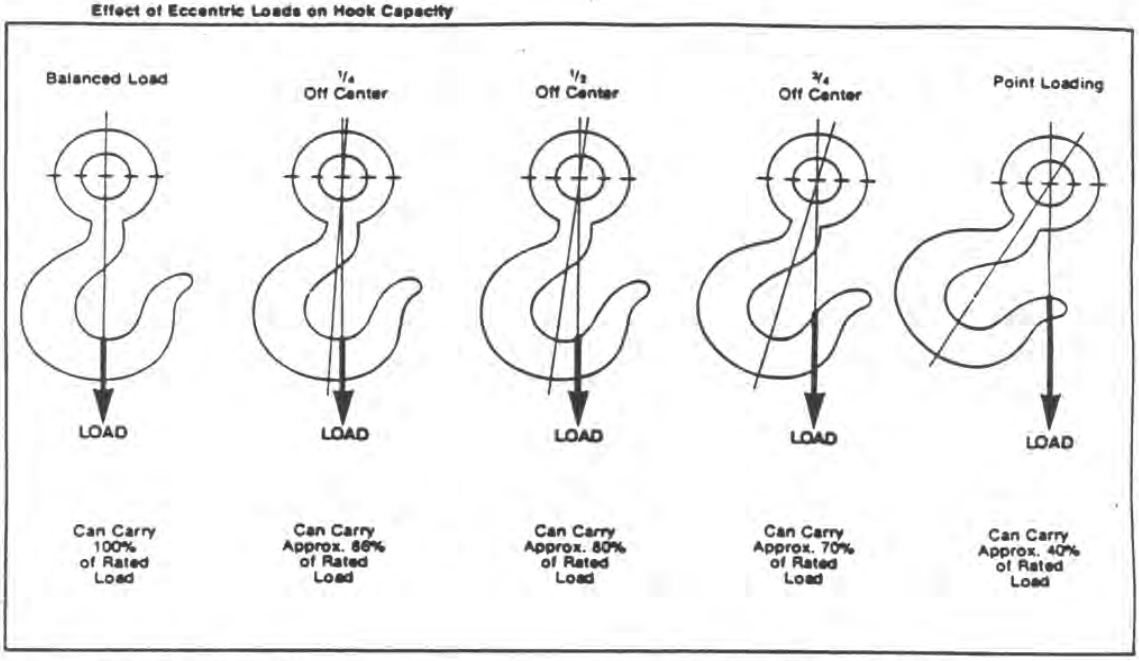
Do Not Use Screw Pin Shackles if the Pin can Roll Under Load and Unscrew



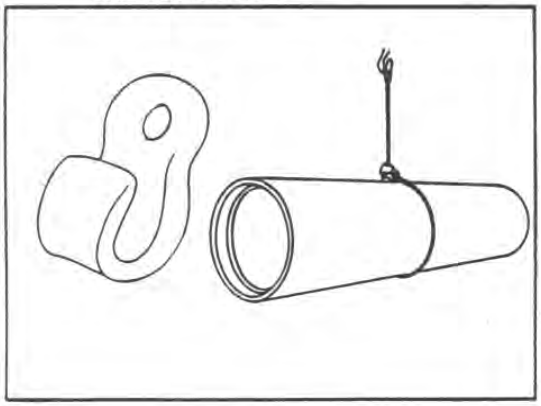
Hook Inspection Areas



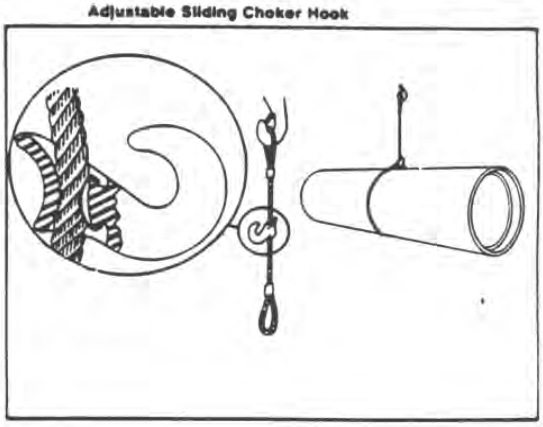
Effect of Eccentric Loads on Hook Capacity



Standard Choker Hook



Adjustable Sliding Choker Hook



The following tables of loads (Tables 4.5, 4.6, 4.7, 4.8 and 4.9) are included to provide an indication of what can be expected from a hook based on its throat opening. Refer to the manufacturers' ratings for specific values of specific hooks.

TABLE 4.5

EYE HOOKS, SHANK HOOKS, SWIVEL HOOKS
FORGED ALLOY STEEL
(SAFETY FACTOR = 5)

Throat Opening (Inches)	Maximum Safe Working Load (Pounds)
5/8	600
11/16	800
1	1,500
1 1/16	2,000
1 1/8	2,500
1 1/4	4,000
1 3/8	4,500
1 13/32	5,000
1 1/2	5,500
1 17/32	6,000
1 11/16	6,800
1 25/32	8,000
1 7/8	8,400
1 15/16	10,000
2 1/16	10,400
2 1/8	11,000
2 1/4	12,500
2 5/16	13,000
2 1/2	16,000
2 9/16	18,000
3	19,200
3 1/16	20,000
3 3/8	24,000
3 7/16	26,000
4	33,400

TABLE 4.6

TYPICAL SORTING HOOK
FORGED ALLOY STEEL

I.D. of Eye	1 1/4"
Opening at Top of Hook	2 13/16"
Safe Working Load 2 1/2" From Tip	2 Tons
Safe Working Load at Bottom of Hook	7 1/2 Tons

TABLE 4.7

CHAIN GRAB HOOKS
(CLEVIS TYPE AND EYE TYPE)
FORGED ALLOY STEEL

Throat Opening (Inches)	For Size of Chain (Inches)	Maximum Safe Working Load (Pounds)
11/32	1/4	2,750
7/16	5/16	4,300
1/2	3/8	5,250
9/16	7/16	7,000
21/32	1/2	9,000
25/32	5/8	13,500
15/16	3/4	19,250
1 1/16	7/8	26,000
1 3/16	1	34,000

TABLE 4.8

CHAIN SLIP HOOKS
(CLEVIS TYPE AND EYE TYPE)
FORGED ALLOY STEEL
(SAFETY FACTOR = 4)

Throat Opening (Inches)	For Size of Chain (Inches)	Maximum Safe Working Load (Pounds)
15/16	1/4	2,750
1 1/16	5/16	4,300
1 5/16	3/8	5,250
1 9/16	7/16	7,000
1 11/16	1/2	9,000
2	5/8	13,500
2 1/8	3/4	19,250
2 3/4	7/8	26,000
3	1	34,000

TABLE 4.9

SLIDING CHOKER HOOKS
FORGED ALLOY STEEL
(SAFETY FACTOR = 5)

Throat Opening (Inches)	For Rope Size (Inches)	Maximum Safe Working Load (Pounds)
1/2	1/4 - 5/16	1,500
5/8	3/8	2,600
7/8	1/2	3,400
1 1/8	5/8	5,100
1 1/8	3/4	8,000
1 7/16	7/8 - 1	15,000
1 3/4	1 1/8 - 1 1/4	23,000
2 3/16	1 3/8 - 1 1/2	30,000

Alloy Chain Slings Working Load Limits*

Size of Chain		Single Chain Lbs. at 90°	Double Chain Slings/Lbs. Type D			Triple and Quad Chain Slings/Lbs. Type T and Type Q		
Ins.	mm							
9/32	7	3,500	6,050	4,950	3,500	9,100	7,400	5,250
3/8	10	7,100	12,300	10,000	7,100	18,500	15,000	10,600
1/2	13	12,000	20,800	17,000	12,000	31,200	25,000	18,000
5/8	16	18,100	31,300	25,600	18,100	47,000	38,400	27,200
3/4	20	28,300	49,000	40,000	28,300	73,500	60,000	42,500
7/8	22	34,300	59,400	48,500	34,300	89,100	72,800	51,500
1	26	38,750†	67,100	54,800	38,760	100,600	82,200	58,200
1 1/4	32	57,500†	99,600	81,300	57,500	149,400	122,000	86,300

* Important: Working Load Limit should not be exceeded Ratio 4 to 1.
†Values shown for these sizes are Grade 63 embossed "A" only.

Synthetic Web Slings - Single Ply Triangle

Sling body width (inches)	Vertical	Choker	Vertical Basket	60 Deg. Basket	45 Deg. Basket	30 Deg. Basket
1	1,600	1,200	3,200	2,720	2,240	1,600
2	3,200	2,400	6,400	5,440	4,480	3,200
3	4,800	3,600	9,600	8,160	6,720	4,800
4	6,400	4,800	12,800	10,880	8,960	6,400
5	8,000	6,000	16,000	13,600	11,200	8,000
6	9,600	7,200	19,200	16,320	13,440	9,600

NOTES: (1) All angles shown are measured from the horizontal
(2) Capacities for intermediate widths not shown may be obtained by interpolation

Shackles Screw Pin Anchor Type

Nominal Shackle Size (Inches)	Working Load Limit (pounds)	Nominal Shackle Size (Inches)	Working Load Limit (pounds)
3/16	660	1	17,000
1/4	1,000	1 1/8	19,000
5/16	1,500	1 1/4	24,000
3/8	2,000	1 3/8	27,000
7/16	3,000	1 1/2	34,000
1/2	4,000	1 3/4	50,000
5/8	6,500	2	70,000
3/4	9,500	2 1/4	80,000
7/8	13,000	2 1/2	110,000

Forged Eye Bolts Shoulder Nut

Shank Size (inches)	90 Deg. To Horiz.	60 Deg. To Horiz.	45 Deg. To Horiz.
1/4	500	175	125
5/16	800	280	200
3/8	1,200	420	300
1/2	2,200	770	550
5/8	3,500	1,225	875
3/4	5,200	1,820	1,300
7/8	7,200	2,520	1,800
1	10,000	3,500	2,500
1 1/4	15,200	5,320	3,800
1 1/2	21,400	7,490	5,350

Wire Rope Slings 6 x 19 or 6 x 37 IWRC IPS

Rope Diameter (inches)	Vertical (1)	Choker (1)	Vertical Basket (2)	60 Deg. To Horiz.	45 Deg. To Horiz.	30 Deg. To Horiz.	Rope Diameter (inches)
1/4	1,120	840	2,200	1,940	1,580	1,120	1/4
3/8	2,400	1,860	5,000	4,200	3,600	2,400	3/8
1/2	4,400	3,200	8,800	7,600	6,200	4,400	1/2
5/8	6,800	5,000	13,600	11,800	9,600	6,800	5/8
3/4	9,800	7,200	19,400	16,800	13,800	9,800	3/4
7/8	13,200	9,800	26,000	22,000	18,600	13,200	7/8
1	17,000	12,800	34,000	30,000	24,000	17,000	1
1 1/8	20,000	15,600	42,000	36,600	30,000	20,000	1 1/8
1 1/4	24,000	18,400	48,000	42,000	34,000	24,000	1 1/4
1 3/8	30,000	22,000	58,000	50,000	42,000	30,000	1 3/8
1 1/2	34,000	26,000	70,000	60,000	50,000	34,000	1 1/2
1 5/8	40,000	30,000	82,000	70,000	58,000	40,000	1 5/8
1 3/4	48,000	36,000	94,000	82,000	66,000	48,000	1 3/4
2	60,000	46,000	122,000	106,000	86,000	60,000	2

NOTES: (1) These values are based on slings being vertical. If they are not vertical, the rated load (rated capacity) shall be reduced
(2) These values only apply when the D/d ratio is 25 or greater
D = Diameter of curvature around which the body of the sling is bent · d = Diameter of rope

SLING INSPECTION RECORD

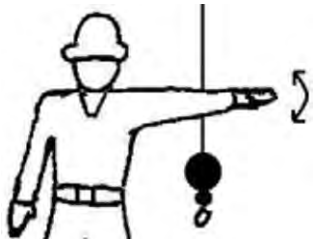
MANUFACTURER: _____ **MONTH/YEAR** _____

SERIAL NO. _____ **WORKING LOAD LIMIT** _____ | _____ | _____

TYPE _____ **SIZE** _____ **REACH** _____ **GRADE** _____

	WEEK #1			WEEK #2			WEEK #3			WEEK #4			WEEK #5		
Day	**Condition**	**Date**	**By**	**Condition**	**Date**	**By**	**Condition**	**Date**	**By**	**Condition**	**Date**	**By**	**Condition**	**Date**	**By**
Monday															
Tuesday															
Wednesday															
Thursday															
Friday															
Saturday															
Sunday															

Date Put into Service _____ **Date Removed/Destroyed** _____ **Date Repaired** _____



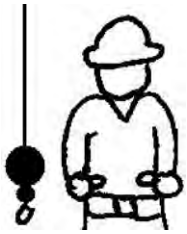
STOP – With arm extended horizontally to the side, palm down, arm is swung back and forth.

EMERGENCY STOP – With both arms extended horizontally to the side, palms down, arms are swung back and forth.

HOIST – With upper arm extended to the side, forearm and index finger pointing straight up, hand and finger make small circles.

RAISE BOOM – With arm extended horizontally to the side, thumb points up with other fingers closed.

SWING – With arm extended horizontally, index finger points in direction that boom is to swing.



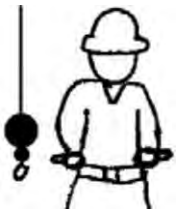
RETRACT TELESCOPING BOOM – With hands to the front at waist level, thumbs point at each other with other fingers closed.

RAISE THE BOOM AND LOWER THE LOAD – With arm extended horizontally to the side and thumb pointing up, fingers open and close while load movement is desired.

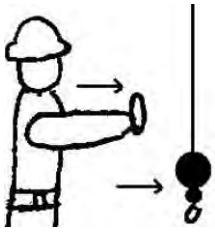
DOG EVERYTHING – Hands held together at waist level.

LOWER – With arm and index finger pointing down, hand and finger make small circles.

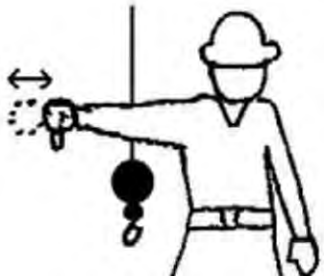
LOWER BOOM – With arm extended horizontally to the side, thumb points down with other fingers closed.



EXTEND TELESCOPING BOOM – With hands to the front at waist level, thumbs point outward with other fingers closed.



TRAVEL/TOWER TRAVEL – With all fingers pointing up, arm is extended horizontally out and back to make a pushing motion in the direction of travel.



LOWER THE BOOM AND RAISE THE LOAD – With arm extended horizontally to the side and thumb pointing down, fingers open and close while load movement is desired.

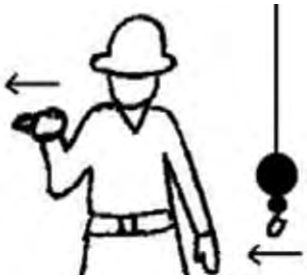
MOVE SLOWLY – A hand is placed in front of the hand that is giving the action signal.

USE AUXILIARY HOIST (whipline) **–** With arm bent at elbow and forearm vertical, elbow is tapped with other hand. Then regular signal is used to indicate desired action.

CRAWLER CRANE TRAVEL, BOTH TRACKS – Rotate fists around each other in front of body; direction of rotation away from body indicates travel forward; rotation towards body indicates travel backward.

USE MAIN HOIST – A hand taps on top of the head. Then regular signal is given to indicate desired action.

CRAWLER CRANE TRAVEL, ONE TRACK – Indicate track to be locked by raising fist on that side. Rotate other fist in front of body in direction that other track is to travel



TROLLEY TRAVEL – With palm up, fingers closed and thumb pointing in direction of motion, hand is jerked horizontally in direction trolley is to travel.

Each contractor working on a TGC Structural (TGCS) project will comply with OSHA, OR- OSHA, DOSH, Construction Industry Demolition Regulations, in addition to the following policies/procedures.

An owner provided comprehensive Hazardous Material Survey, a Phase I assessment and where required, a Phase II assessment shall be performed on structures that are to be demolished. All hazardous material shall be remediated and/or abated prior to the demolition process.

Procedures

- Prior to initiating demolition activities, an engineering survey of the building must be made by a competent person to determine the condition of the structure and identify areas subject to unplanned collapse
    - A copy of this inspection must remain on site
- Each contractor will be required to wear durable gloves, eye protection, and long sleeved shirts in addition to their standard Personal Protective Equipment when performing selective demolition operations
- All utilities must be shut off, capped or locked out of service beyond the building line before demolition work is initiated
- Where employees are exposed to fall hazards, guardrail and/or personal fall arrest systems must be used
- Hole covers must be identified and secured against accidental displacement
- Any openings cut in a floor for the disposal of materials can be no larger than 25% of the aggregate of the total floor area, unless the lateral supports of the removed flooring remain in place
- If debris is dropped through holes in the floor without the use of chutes, the area onto which the material is dropped will be completely enclosed with barricades not less than 42 inches high and not less than 6 feet back from the project openings
- Danger Tape and signs shall be posted at each level, warning of the hazard of falling materials
- Removal of the debris from the lower area shall not be permitted until debris handling from above has ended
- Access to a structure being demolished will be restricted to designated stairways, passageways and ladders
- Other access points will be closed at all times
- All designated access points will be periodically inspected and maintained in a clean, safe condition

Chutes

- No material may be dropped to a point outside the building unless that area is delineated with a protective barricade and the distance to any point does not exceed 20 feet
- All chutes must be entirely enclosed except for openings at or slightly above the floor level for the insertion of materials
- Chutes must be designed and constructed of such strength as to eliminate failure due to the impact of material and debris loaded into them

Removal of Walls, Masonry Sections and Chimneys

- Masonry walls, including sections of walls, will not be permitted to fall onto the floor of the building under demolition unless an engineer has determined that the floor can withstand the imposed load
- No wall section, more than one story in height, will be permitted to stand alone without lateral bracing unless it was designed to stand alone
- Structural or load-supporting members of any floor will not be cut or removed until all stories above such a floor have been demolished or removed

Removal of Walls, Floors and Material with Equipment

- Mechanical equipment will not be used on floors unless the floors are of sufficient strength to safely support the equipment
- Mechanical equipment will only be used for its intended purpose according to the manufacturer's recommendations

Removal of Steel Construction

- Steel construction will be dismantled column length by column length, tier by tier
- When floors have been removed, planking 18" wide by 2" thick, must be used by employees engaged in razing the steel framing

Mechanical Equipment

- No employees will be permitted in an area where "ball" or "clam" work is being performed
- Only employees necessary for the performance of the operation may be permitted in this area
- The area must be identified with warning barricades and signs
- During this operation continuous observations, by the competent person, must be made to identifying potential areas of failure

OSHA and OR-OSHA Jurisdictions

Each contractor working on a TGC Structural (TGCS) project will comply with the latest edition of the NFPA 70E Standards for Electrical Safety in the Workplace, OSHA, OR-OSHA, DOSH, Construction Industry Electrical Regulations, in addition to the following policies/procedures.

Procedures

- Working On or Near Exposed Energized Parts
  - It is TGCS policy that no one will work on live electrical circuits
  - If a situation arises where it is impossible to perform a task with the circuit de-energized, the Superintendent shall contact the Safety Department prior to performing the work
  - A formal pre-construction meeting shall occur prior to any such work occurring
  - Only qualified persons may work on electric circuit parts that have not been de-energized
  - Such persons must be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials and insulated tools
  - All work must be completed with strict compliance to NFPA 70E requirements and guidelines
  - The subcontractor shall provide proof of training for their workers when requested

Ground Fault Circuit Interrupters

- TGCS requires that all projects are 100% GFCI compliant
- An Assured Equipment Grounding Conductor Program may be used in addition to the GFCI program, but it is not recognized as a replacement for the GFCI
- Whenever an extension cord is used for construction work, a GFCI is required between the extension cord and the receptacle

Extension Cords and Cord Management

- Only round, heavy-duty 14 gauge and higher (type S, SJO, SJTW, ST, SO, STD) are acceptable for use on a construction site
- **Flat** cords are not allowed on the jobsite
- Any cord which is damaged or has a grounding pin removed shall be positively removed from service
- Cords that have been spliced must be removed from service
- At no time shall cords be strung across exits or in front of emergency equipment
- Run cords around perimeters, when feasible
- All electrical cords shall be protected from damage by equipment, carts, trucks, and other rolling objects
- Extension cords shall not be fastened with staples, hung from nails, or suspended with non-insulated wire
- Keep extension cords out of wet conditions at all times
- All cords must be inspected before each use
- Cords must be inspected monthly and the following color scheme is used to identify monthly inspections:
  - January February, March — White
  - April, May, June — Green
  - July, August, September — Red
  - October, November, December — Orange

Electric Tools

- All portable electric tools such as saws, hammers, drills, vibrators and float machines, shall bear the label of a nationally Certified Testing Agency, such as Underwriters Laboratories

Temporary Wiring & Lighting

- All temporary wiring and lighting must meet current NEC codes
- Temporary lighting must never be put on the same circuit as temporary receptacles
- The minimum illumination level shall be 5 foot-candles
- Installation of temporary lighting must be per manufacturer's specifications and in compliance with OSHA, OR-OSHA, DOSH, NFPA, NEC and local codes
- Temporary light strings shall not be fastened with staples, hung from nails, or suspended with non-insulated wire

DOSH Jurisdiction

Extension Cords and Cord Management

- Only round, heavy-duty 14 gauge and higher (type S, SJO, SJTW, ST, SO, STD) are acceptable for use on a construction site
- **Flat** cords are not allowed on the jobsite
- Any cord which is damaged or has a grounding pin removed shall be positively removed from service
- Cords that have been spliced must be removed from service
- At no time shall cords be strung across exits or in front of emergency equipment
- Run cords around perimeters, when feasible
- All electrical cords shall be protected from damage by equipment, carts, trucks, and other rolling objects
- Extension cords shall not be fastened with staples, hung from nails, or suspended with non-insulated wire
- Keep extension cords out of wet conditions at all times
- All cords must be inspected before each use
- Cords must be inspected monthly and the following color scheme is used to identify monthly inspections:
    - January White
    - February White /Yellow
    - March White / Blue
    - April Green
    - May Green / Yellow
    - June Green / Blue
    - July Red
    - August Red / Yellow
    - September Red / Blue
    - October Orange
    - November Orange / Yellow
    - December Orange / Blue

COLOR CODE FOR QUARTERLY CORD TESTING

JANUARY THROUGH MARCH

WHITE

APRIL THROUGH JUNE

GREEN

JULY THROUGH SEPTEMBER

RED

OCTOBER THROUGH DECEMBER

ORANGE

This applies to all general contractors, subcontractors and includes COMPANY as well as EMPLOYEE cord receptacles and electric tools.

COLOR CODE FOR QUARTERLY/MONTHLY CORD TESTING

WHITE	
WHITE	YELLOW
WHITE	BLUE

JANUARY
FEBRUARY
MARCH

GREEN	
GREEN	YELLOW
GREEN	BLUE

APRIL
MAY
JUNE

RED	
RED	YELLOW
RED	BLUE

JULY
AUGUST
SEPTEMBER

ORANGE	
ORANGE	YELLOW
ORANGE	BLUE

OCTOBER
NOVEMBER
DECEMBER

This applies to all general contractors, subcontractors and includes COMPANY as well as EMPLOYEE cord receptacles and electric tools.

Each contractor working on a TGC Structural (TGCS) project will comply with the latest version of the NFPA 70E Standards for Electrical Safety in the Workplace, OSHA, OR-OSHA, and DOSH, Construction Industry Lockout Tagout Regulations, in addition to the following policies/procedures.

General Requirements

- Lock Out/Tag Out (LOTO) will not be considered for use until all other avenues of attaining a "zero-energy state" have been exhausted
- All subcontractors working with electrical systems are required to have a written Lock Out / Tag Out Procedure
- A **Competent Person** (CP) shall be responsible to control all aspects of the Lock Out / Tag Out (LOTO) procedure
    - They will ensure coordination with the appropriate tradesmen
- If a system can be locked out through design or by other means, this will be the preferred method
- The lockout device shall be substantial enough to prevent removal
- The lock shall be a separately keyed lock for use only with the lockout system
- The lockout device must be tagged with the name of the employee and their company
- There shall be one lock for each employee exposed to the system
- If working in a multi-shift environment, each employee shall remove their respective locks at the end of their shift
- Employees shall not leave their lock on past the end of their shift
- The use of 100% LOTO must be maintained until the completion of the task
- **Verification by all competent persons in charge of the LOTO shall be completed prior to re-energizing the system**
- Tag out devices, including their means of attachment, shall be substantial enough to prevent accidental removal
- The tag shall warn against energizing the tagged out system such as: Do Not Start, Do Not Open, Do Not Close, Do Not Energize, Do Not Operate, etc.
- The name of each employee shall be displayed on the tag
- The competent person shall be responsible for un-tagging and activating the system after all exposed employees have removed their tags

Training and Documentation

- Each employee affected by the LOTO procedure shall be trained in the procedure
- Each employer utilizing LOTO must establish a program and utilize procedures for affixing appropriate lockout or tagout devices to energy isolating devices, and to otherwise disable machines, piping or equipment to prevent unexpected release of stored or residual energy in order to prevent injury to employees
- Each employee shall be trained in the identification of the lockout / tagout device
- A log shall be maintained on site that identifies the following:
    - Date of usage
    - Number of locks and tags used
    - Contractors involved
    - Time of LOTO initiation
    - Time of LOTO removal
    - Designated competent persons
- In the event an employee is discovered tampering with or violating the LOTO procedure, the employee will be removed from the project

Hot Work

- All subcontractors working with electrical systems are required to have a written hot work procedure

- If any electrical energy is present in a panel, j-box, subpanel or etc. then those devices are consider hot
- Removal of a cover from a hot panel, j-box, subpanel or etc. shall be considered performing hot work
- Electrical hot work shall not be considered for use until all other avenues of attaining a "zero-energy state" have been exhausted
- All subcontractors working on hot (live) electrical parts must follow the latest version of the NFPA 70E Standards for Electrical Safety in the Workplace
- All subcontractors working on hot (live) electrical parts must submit a "Hot Work Permit" that meets the requirements of the latest version of the NFPA 70E Standards for Electrical Safety in the Workplace

OSHA and OR-OSHA Jurisdictions

Each contractor working on a TGC Structural (TGCS) project will comply with OSHA, OR- OSHA, DOSH, Construction Industry Excavation and Trenching Regulations, in addition to the following policies/procedures.

Responsibilities

- The Superintendent will be responsible for ensuring the presence of a "competent person" when employees or subcontractor employees are working in any excavation
- The competent person will also be responsible for the following:
    - Performing daily inspections of excavations and recording the results of these inspections on the inspection form at the end of this section
    - Track inspections and their results
    - Testing for and controlling hazardous atmospheres
    - Conferring with registered professional engineer for the design of shoring systems or shielding systems
    - The availability of rescue equipment and services to include emergency medical response
    - Removing employees from the excavation or trench when conditions deteriorate, threatening employee safety
    - Determining the scope of all work performed in the trench or excavation.
    - Locating all underground utility installations
    - Ensuring that only those employees who have received appropriate training enter the trench or excavation
    - Supervising the installation of shoring/shielding systems
    - Correcting unsafe conditions within the excavation or trench
    - Removing or supporting underground installations that would threaten the safety of employees

Surface Encumbrances

- All surface encumbrances such as rail road tracks, footings, etc. will be removed or supported, as necessary to safeguard employees
- Equipment, workers, etc. are not to disturb the actual top of slope
- Equipment and materials will be evaluated individually

Underground Installations

- The estimated location of all underground installations such as telephone, fuel, electric, and water lines are to be determined before opening any excavation
- When excavation operations approach the estimated location of underground installations, the exact location of these installations shall be determined by requesting a "locate" from the client or their representative
- While the excavation is open underground installations will be removed or supported as necessary to safeguard employees (utilizing local utility companies as required)

Access and Egress

- Ladders, stairways, ramps or other safe means of egress shall be located in trenches and exactions greater than four (4) feet in depth, so as to require no more than twenty-five (25) feet of lateral travel for employee

Requirements for Protective Systems

- Excavations greater than 5 feet in depth must be protected by one or more of the following systems:
    - Sloping / benching of sides to allowable configurations and slopes

  - Using tabulated data
  - Utilizing a trench box or shield
  - Using a slope or shield system designed by a registered professional engineer
- A registered professional engineer must design sloping or benching systems for excavations greater than 20 feet in depth

Exposure to Falling Loads

- No employee will be permitted under loads handled by lifting or excavation equipment
- No employee will enter the bucket or scoop of any excavation equipment for the purposes of being lifted or lowered, steadying equipment etc.
- Employees will stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials
- Spoil piles will be located at least two (2) feet from the edge of the excavation
- Large rocks, scrap pipe etc. will not be placed on the edge of any excavation as to present a hazard to workers in the excavation
- Pipe staged along a trench will be placed at least two (2) feet from the edge of the trench to prevent it from being dislodged and rolling into the trench

Warning Systems for Mobile Equipment

- When mobile equipment is operated adjacent to an excavation or when equipment must approach an excavation, if the operator does not have a clear view of the edge of the excavation, a ground guide will be used to guide the operator in conjunction with appropriate back up alarms on bi-directional equipment

Hazardous Atmospheres

- To assure acceptable atmospheric conditions the following requirements will apply:
  - Where oxygen deficiency (atmospheres containing less than 19.5 percent oxygen) or a hazardous atmosphere exists or could reasonably be expected to exist, such as in excavations in landfill areas or excavations in areas where hazardous substances are stored nearby, the atmospheres in the excavation shall be tested before employees enter excavations greater than 4 feet (1.22 m) in depth
  - Adequate precautions will be taken (providing respiratory protection, or ventilation) to prevent employee exposure to atmospheres containing less than 19.5 percent oxygen
  - Adequate precaution (ventilation etc.) will be taken to prevent exposure of employees to atmospheres containing more than twenty (20) percent of the lower explosive limit of flammable gas
  - When controls are used that are intended to reduce the level of atmospheric contaminants to acceptable levels, testing shall be conducted as often as necessary to ensure that the atmosphere remains safe

Protection From Hazards Associated With Water Accumulation

- No employee will work in any excavation where there is water accumulation, or where water is accumulating, unless adequate precautions (pumping, installing wells, etc.) have been taken to protect employees from the hazards associated with water accumulation (trench wall soaking up water and sloughing in etc.)
- The competent person will be responsible to see that dewatering activities take place
- Excavations subject to run off from heavy rains or excessive ground water will be inspected by the competent person

Protection of Employees From Loose Rock or Soil

- Adequate protection shall be provided to protect employees from loss rock or soil that could pose a hazard by falling or rolling from an excavation face
- Such protections shall consist of scaling to remove loose material; installation of protective barricades at intervals as necessary on the face to stop and contain falling material; or other means that provide equivalent protection
- Employees shall be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations
- Protection shall be provided by placing and keeping such materials or equipment at least 2 feet (.61m) from the edge of excavations, or by the use of retaining devices that are sufficient to prevent material or equipment from falling rolling into excavations, or by a combination of both if necessary

Inspections

- Daily inspection of excavations, adjacent areas, and protective systems will be made by the competent person
- The inspections will focus on situations that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres or other hazardous conditions
- When the competent person finds a hazardous condition to exist, employees will be removed or prevented from entering the excavation/trench until corrective action, has been taken, including flagging off the area with danger tape to ensure their safety
- A log of these inspections will be kept to include:
    - The name of the excavation inspected
    - The date and time of the inspection
    - Results of the inspection (hazards found etc.)
    - Name of "competent person" making the inspection
- The attached form may be used for this purpose

Fall Protection

- Walkways shall be provided where employees or equipment are required or permitted to cross over excavations
- Guardrails which comply with OSHA, OR-OSHA, shall be provided where walkways are six (6) feet or more above lower level
- Each employee at the edge of an excavation six (6) feet or more in depth shall be protected from falling by guardrail systems, fences, or barricades when the excavations are not readily seen because of plant growth or other visual barrier
- Each employee at the edge of a well, pit, shaft, and similar excavation six (6) feet or more in depth shall be protected from falling by guardrail systems, fences, barricades, or covers

Training Requirements

- Each employee affected by the excavation and trenching systems must be trained in the procedures specific to the project, i.e. access / egress points, location of utilities, etc.
- Each affected employee must be trained in all sloping, benching, and shoring procedures prior to entering the excavation or trench

DOSH Jurisdiction

In addition to the above program, projects in the Washington DOSH Jurisdiction shall comply with the following.

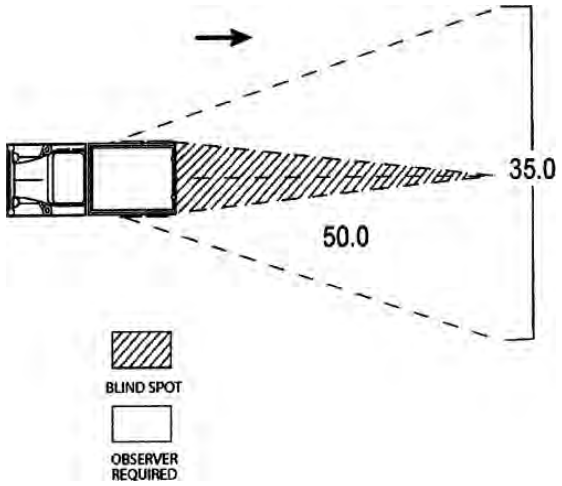
General Requirements:

- Excavations greater than 4 feet in depth must be protected by use of a protection system

- Guardrails which comply with DOSH shall be provided where walkways are four (4) feet or more above lower levels
- Each employee at the edge of an excavation six (4) feet or more in depth shall be protected from falling by guardrail systems, fences, or barricades when the excavations are not readily seen because of plant growth or other visual barrier
- Each employee at the edge of a well, pit, shaft, and similar excavation six (4) feet or more in depth shall be protected from falling by guardrail systems, fences, barricades, or covers
- Where traffic is diverted onto dusty surfaces, good visibility shall be maintained by the suppression of dust, through the periodic application of oil or water to the grade surface, as required
- Operating vehicles, other than passenger cars and pickups, with an obstructed view to the rear is prohibited unless the vehicle meets one of the following:
    - Has an operable automatic backup alarm
    - Audible above the surrounding noise level
    - Audible no less than fifteen feet from the rear of the vehicle or
    - Is backed up when a spotter signals that it is safe to do so
- If the surrounding noise level is so loud that the backup alarms are not effective, then a spotter must be used
- A spotter must:
    - Be in direct line of sight or be able to communicate with the driver
    - Be able to see the entire backing zone
    - Continue to provide direction to the driver until the driver reaches the destination and stops or there is no longer employees in the backing zone

Operating Dump Trucks in Reverse:

- The term "dump trucks" includes both belly and rear dump trucks with a minimum payload of four yards
- Has an operable automatic backup alarm
- Audible above the surrounding noise level and
- Audible no less than fifteen feet from the rear of the vehicle
- Before backing the driver must determine that no one is currently in the backing zone and it is reasonable to expect that no employee(s) will enter the backing zone while operating the dump truck in reverse
- If employee(s) are in the backing zone or it is reasonable to expect that an employee(s) will enter the backing zone, you must make sure the truck is backed up only when:
    - An observer signals that it is safe to back or
    - An operable mechanical device that provides the driver a full view behind the dump truck is used, such as a video camera
- The following diagram defines the backing zone (Distances are reported in feet)



- Exemptions:
    - Employees are considered protected when they are on the opposite side of a fixed barrier such as:
        - A jersey barrier
        - A piece of heavy equipment or
        - A six-inch concrete curb

Daily Excavation and Trenching Inspection Checklist

To be completed prior to any excavation or trenching work.

Project: _____ **Company:** _____

Competent Person: _____ **Inspection Date:** _____

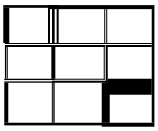
Excavation Depth/Width: _____ **Inspection Time:** _____

Protective System Used: _____ **Soil Type:** _____

General Conditions

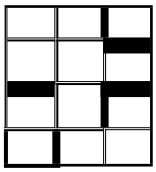
Inspection Item & Description (Yes/No or NA)	**Y**	**N**	**NA**
Excavation, adjacent areas, and protective systems inspected by a competent person daily?			
Surface encumbrances removed or supported?			
Employees protected from loose rock/soil falling or rolling into the excavation?			
Spoils, materials and equipment set back at least 2' from edge of the excavation?			
Barriers provided at all excavations, wells, pits, shafts etc.?			
Walkways over excavations 6' (4' in WA) or more are equipped with standard guardrail/toeboards?			
High-Vis vests or clothing provided and worn by all employees exposed to vehicle traffic?			
Employees required to stand back from vehicles being loaded or unloaded?			
Employees are prohibited from walking under suspended loads?			
Employees prohibited from working on the faces of sloped or benched excavations above others?			
Utilities			
Utility locates complete?			
Pot holing complete as needed?			
Underground installations protected, supported or removed when excavation is open?			
Means of Access and Egress			
Unobstructed lateral travel to egress no greater than 25' in excavations more than 4'?			
Access ladders extended 3' above edge of trench?			
Employees protected from cave-ins when entering or exiting excavations?			
Wet Conditions			
Precautions taken to protect employees from accumulation of water?			
Water removal equipment monitored by a competent person?			
Surface or runoff water diverted to prevent accumulation in the excavation?			
Hazardous Atmosphere			
Tested when a reasonable possibility of oxygen deficiency, combustibility, other containment?			
Precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% or more than 23.5% oxygen and/or other hazardous atmosphere?			
Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas?			

Testing conducted often to ensure the atmosphere remains safe?
Emergency equipment available if required?
Employee trained to use PPE and Rescue equipment?



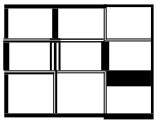
Support Systems

Equipment for support systems selected based on soil analysis, depth, width and expected loads?
Equipment used for protective systems inspected and in good condition?
Equipment not in good condition has been removed from service?
Damaged equipment used for protective systems inspected by a registered professional engineer after repairs and before being placed back into service?

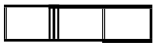


Support systems provided to insure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.?

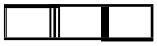
Members of support system securely fastened to prevent failure?
Excavation material to a level no greater than 2' below the bottom of the support system?
Excavations below the level of the base or footing supported and approved by a registered professional engineer?



Removal of support systems progresses from the bottom and members are released slowly as to not cause any indication of possible failure?



Backfilling progresses with removal of the support system?



Comments

Below is a list of TGC Structural Employees who have been trained on the Excavation and Trenching Protection Program and on the hazards they might encompass onsite.

Employee Name	Employee Signature	Date:	Trainer Initials

OSHA and OR-OSHA Jurisdictions

Each contractor working on a TGC Structural (TGCS) project will comply with OSHA, OR- OSHA, DOSH, Construction Industry Fall Protection Regulations, in addition to the following policies/procedures.

Fall Protection is a broad concept that includes training, procedures, rules, systems and methods, intended to protect workers from fall hazards. TGCS requires fall protection for work activities that expose workers to fall hazards of **6 feet** or more.

Where it relates to excavations, wells, pits, shafts, holes and wall openings (as defined below) and established floors, mezzanines, balconies and walkways the trigger height is reduced to **6 feet** or more.

- **Hole** – A gap or void 2 inches or more in any direction
- **Wall Opening** – A gap or void 30 inches or more high and 18 or more inches in width

Where it relates to working over dangerous equipment (as defined below) the trigger height is reduced to **0 feet**.

- Dangerous equipment –equipment which, as a result of form or function, may be hazardous to employees who fall onto or into such equipment.

All TGCS subcontractors and employees must comply with the fall protection program procedures. Failure to adhere to the fall protection program procedures is grounds for immediate termination of offending employee

Pre-Task Planning
A written Site Specific Fall Protection Plan is required to be developed prior to performing activities that expose workers to fall hazards. In the case of a subcontractor, this plan must be submitted for review by the subcontractor prior to performing activities that expose workers to fall hazards. You should try to engineer out the need for a fall arrest system during your pre-task planning. Examples would be pre-fabricating on the ground, using a man-lift, or installing standard guardrails.

TGCS Fall Protection equipment is for exclusive use of TGCS employees and will not be used by or loaned to others.

Site Specific Fall Protection Plans
Written Site Specific Fall Protection Plans must include at least the following elements

- Project name and address where the Site Specific Fall Protection Plan will be implemented
- Name and signature of the competent person developing the Site Specific Fall Protection Plan
- Name and signature of the competent person managing this plan
- Identify all the fall protection hazards for each type of work or task performed
- Describe the fall protection system to be used for each type of work or task performed
- For each type of work or task performed, describe the procedures for:
    - Assembly of the system
    - Maintenance of the system
    - Inspection of the system
    - Disassembly of the system
- Describe the procedures for handling, storage and securing the tools and materials needed for each type of work or task performed
- Describe the method used to provide overhead protection from above the work area and for those below the work area for each type of work or task performed
- Describe the method of prompt, safe removal or rescue of a worker who has fallen (rescue)
- Only workers trained in the Site Specific Fall Protection Plan shall be allowed to work from heights
- Provide proof of training for each worker using this plan

- A copy of the Site Specific Safety Plan shall be onsite at all times for review

See attached Site Specific Fall Protection Plan at the end of this section

Fall Protection Systems

A fall-protection system refers to equipment designed to control fall hazards. All fall-protection systems either prevent a fall from occurring (*restraint)* or safely stop (*arrest)* a fall. Types of fall-protection systems include the following:

- **Guardrail Systems**
  - Top edge height of guardrail systems shall be 42", plus or minus 3"
  - Wood top rails and posts shall be at least 2"x4" and posts shall be spaced not more than 8' on center
  - Toprail shall be capable of withstanding a 200-pound force in any outward or downward direction
  - Guardrails shall have a midrail set midpoint between working surface and the toprail
  - No horizontal opening greater than 19 inches shall be allowed on wood guardrail systems
  - Midrail shall be capable of withstanding a 150-pound force in any outward or downward direction
  - Wire rope used for a top rail must be at least ¼" diameter and be flagged at not more than 6' intervals with high-visibility material
  - Where wire rope is used the guardrail shall not deflect to below 39 inches at any point
  - When guardrail systems are used at hoisting areas, a chain, gate or removable guardrail section shall be placed across the access opening when hoisting operations are not taking place

- **Warning Lines (Roofing Work Only)**
  - May be used for roofing work only
  - Shall be erected on all sides of the work area
  - Roofing work does not include construction of the roof deck or leading edge work
  - Shall not be used on roof slopes greater than 2 in 12
  - Shall be erected not less than 6' from roof edge
  - Shall be erected not less than 10' from roof edge if mechanical equipment is used
  - Shall be flagged with high-visibility material at not more than 6' intervals
  - Height of warning line shall be 34" to 39"
  - Capable of withstanding a 16 pound force when applied horizontally at the stanchion
  - Line must be of a material that has 500 lbs. of tensile strength
  - Access points, material handling, storage and hoisting areas, if outside the warning line, must be connected to the work area by use of two warning lines
  - Anyone working between the warning line and roof edge must use a different means of fall protection

- **Safety Monitoring System (Roofing Work Only)**
  - At no time shall the Safety Monitoring Systems be used as a means for fall protection without prior approval of the Safety Department
  - Where the Safety Monitoring System is use the following shall apply
    - All provisions of the warning line system shall be used at all times even with roofs narrower than 50 ft.
    - No mechanical equipment can be used or stored in the area where the safety monitoring system is being used
    - A competent person familiar with the regulations associated with the safety monitoring system shall be named as the Safety Monitor by the employer
    - The Safety Monitor must:
      - Must be recognizable as the Safety Monitor in some fashion
        - This could include a different colored hard hat or vest

- Be able to recognize fall protection hazards
- Warn employees when they are approaching the fall hazard or acting in an unsafe manner
- Be on the same working surface as those he is monitoring
- Be in visual contact with those he is monitoring at all times
- Be close enough to easily communicate with those he is monitoring
- Have no other responsibilities while he is acting as the Safety Monitor

- **Warning Barrier Used for <u>Other Than</u> Roofing Work**
  - Warning barrier system may be used to mitigate the fall hazards by eliminating exposure
  - When a safe work distance is designated, it must be one that eliminates the potential for the worker to stumble and fall over the unprotected edge but at a **minimum 10 feet** back from the fall hazard
  - There should also be a margin of error included in the distance since there is not a positive means of stopping the worker's forward momentum toward the fall hazard
  - Factors that might enter into such an evaluation could include weather conditions, lighting, the slope and condition of the walking surface, the kind of work being performed, materials being handled, the height of the worker above the work surface (such as working from a ladder), housekeeping, training, experience, how much time the job takes, or the distance that the worker stays away from any open sides or edges
  - The guiding principle to follow when evaluating warning or barricade lines is that the distance from the unguarded edge of the work surface must be great enough to remove the worker from exposure to a fall hazard
  - Warning Barrier should be constructed the same as the Warning Line System for roofing work

- **Safety Net Systems**
  - Safety Net systems consist of mesh nets, including panels, connectors, and other impact absorbing components
  - If safety nets are needed, the designated competent person will oversee the installation and performance requirements of the system

- **Slide Guard System**
  - Slide guard system cannot be used until the roof sheathing is at least tacked down.
  - Slide guard systems, and their use, shall comply with the following provisions:
    - Slide guard systems shall be installed under the supervision of a competent person
    - Slide guards shall not be used on roofs with a ground-to-eave height greater than 25 feet
    - Slide guards shall not be used as a fall protection system on roofs with a slope less than 3:12 nor greater than 8:12
    - On roofs with slopes greater than or equal to 3:12 up to and including 6:12, at least one slide guard shall be placed below the work area, no closer than 6 inches from the eave
    - On roofs with slopes greater than 6:12 and not more than 8:12, multiple slide guards shall be used, spaced no more than eight feet apart, vertically. The lower slide guard shall be no closer than 6 inches from the eave
    - Installation of the lowest slide guard shall be perpendicular (90 degrees) to the roof surface
    - When multiple slide guards are used, the angle of installation for the upper slide guards shall not be less than 60 degrees to the roof surface
    - Slide guards shall be continuous below all walking or working areas
    - Personnel shall not be allowed to ascend or descend the roof slope within six feet of the rake edge except where that limitation would prevent the performance of work
    - Supplies and materials shall not be stored within 6 feet of the rake edge, or three feet where tile roof systems are being installed

- Manufactured roof brackets shall meet, or exceed the following minimum safety standards:
  - Roof brackets shall be installed according to the manufacturer's specifications
  - Minimum 6 inch brackets shall be used
  - All brackets shall bear on a solid surface
  - Brackets shall not be spaced greater than 8 feet apart horizontally, or according to the manufacturer's specifications, whichever is less
  - Nominal 2 inch by 6 inch material shall be used for slide guards, and shall be secured to the brackets or otherwise protected against cantilevering and failure due to material flex
  - The manufacturer's specifications shall be available for review
- Job-made slide guards shall meet or exceed the following minimum safety standards:
  - Nominal 2 inch by 6 inch material for both vertical and horizontal members shall be used
  - Vertical members shall be backed to the horizontal (flat) members
  - Horizontal (flat) members shall be anchored with two "16 penny" (16d) common nails or the equivalent, every 4 feet, to solid bearing surfaces
  - Vertical members shall be anchored to the horizontal members with one "16 penny" (16d) common nail or the equivalent, every 2 feet
  - The vertical member shall be provided with full support bracing every eight feet, horizontally
  - Engineering specifications shall be available for review whenever design and/or installation does not meet the above minimum guidelines

- **Personal Fall Arrest Systems (PFAS)**
  - All personal fall arrest systems must limit a fall to 6 ft.
  - All personal fall protection equipment, dee-rings, snaphooks, harnesses, lanyards. lifelines and anchorage points shall have a minimum tensile strength of 5,000 pounds
  - The overall system strength requirements are based on a total combined weight of employee and tools of no more than 310 pounds
  - If combined weight is more than 310 pounds, appropriate allowances must be made
  - All personal fall protection devices shall:
    - Be compatible with all other components
    - Be immediately taken out of service if it has been subjected to an impact load
    - Be used per manufactures recommendations
    - Be made from synthetic fibers (Exception, steel cable self-retracting lifelines)
    - Be inspected prior to each use
    - Be stored in a proper manner that will:
      - Not cause damage to any component
      - Allow all components to dry
      - Not stored in a pile on the floor
  - Personal fall arrest systems, when stopping a fall, shall:
    - Limit maximum arresting force on an employee to 1,800 pounds
    - Be rigged such that an employee can neither free fall more than 6 feet nor contact any lower level
    - Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet
    - Have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of 6 feet
  - Personal Fall Arrest Systems have four basic components.

- Body Support (Full body harness)
  - The only form of body wear acceptable for fall arrest is the full body harness
  - Body belts are not to be used for fall arrest
- The lanyard connecting device (Connecting components)
  - Lanyards shall be constructed of synthetic material (nylon rope, nylon webbing) and have a locking snaphook
  - Lanyards will not be "tied-back" unless they are designed for that purpose (IE: Miller BackBiter)
  - Carabiners shall be locking
- Deceleration devices (rope grabs, shock absorbing lanyards, self-retracting lanyards)
  - Verify if the retractable lanyard in use may be operated flat, some need to be in an upright or overhead position
- Anchorage points (Includes: lifelines; horizontal and vertical)
  - Anchorage points need to be capable of supporting 5,000 pounds for each employee attached to it
  - Vertical lifelines are designed to be used by only one person with a rope grab for vertical mobility, only for up and down movement
  - Horizontal lifelines can only be used when designed, installed and used under the supervision of a qualified person
    - Horizontal lifelines and their anchors are subject to much greater load than vertical lifelines
    - Although two workers can tie off to the same horizontal lifeline, if one falls, the line movement could cause the other worker to fall, too, subjecting the line and anchors to even greater forces
    - For these reasons, horizontal lifelines must be designed, engineered, and installed under the supervision of a qualified person
    - Locations of anchor points need to be planned, considering free-fall distances and swing fall risks

- **Personal Fall Restraint System (PFRS)**
  - Fall restraint systems and their use shall conform to the following provisions:
    - Shall be rigged to prevent the user from falling any distance
    - Must use fall arrest system components that conform to the criteria in 1926.502
    - A body belt may be used in fall restraint systems
    - The attachment point to the body belt or full body harness may be at the back, front or side dee-rings
    - Anchorages used for attachment of personal fall restraint equipment shall be independent of any anchorage being used to support or suspend platforms and shall be capable of supporting 3000 pounds per employee attached
    - Or be designed, installed and used as follows:
      - As part of a complete personal fall restraint system which maintains a safety factor of at least two
      - Under the supervision of a qualified person

- **Positioning Device Systems**
  - Positioning device systems and their use shall conform to the following provisions:
    - Shall be rigged such that an employee cannot free fall more than 2 feet
    - Shall be secured to an anchorage capable of supporting 3,000 pounds
    - Connecting assemblies shall have a minimum tensile strength of 5,000 pounds

- Positioning device systems shall be inspected prior to each use for wear, damage, and other deterioration, and defective components shall be removed from service
- Shall be used in tandem with PFAS system wherever and whenever possible

- **Hole Covers**
  - Covers located in roadways and vehicular aisles shall be capable of supporting, without failure, at least twice the maximum axle load of the largest vehicle expected to cross over the cover
  - Floor and roof openings shall be protected by a standard guardrail system or covered
  - The cover shall be clearly marked "hole" or "cover"
  - All covers shall be secured to prevent accidental displacement
  - Covers shall be capable of supporting at least twice the weight of employees, equipment or material that may be imposed on them at any one time

- **Protection From Falling Objects**
  - Toebords:
    - Shall be erected along the edge of the overhead walking/working surface for a distance sufficient to protect employees below
    - Shall be capable of withstanding a force of at least 50 pounds applied in any downward or outward direction
    - Shall be a minimum of 3 1/2 inches in vertical height
    - Shall have not more than 1/4 inch clearance above the walking/working surface
    - Shall be solid or have openings not over 1 inch in greatest dimension
    - Where tools, equipment, or materials are piled higher than the top edge of a toe- board, paneling or screening shall be erected from the walking/working surface to the top of a guardrail system's top rail
  - Canopies or Tunnels
    - Canopies or tunnels shall be strong enough to prevent collapse and to prevent penetration by any objects which may fall onto the canopy or tunnel

Rescue Plan
Workers who use personal fall arrest systems must be able to rescue themselves if they are suspended after a fall or they must be promptly rescued. Workers may be trained in self-rescue or aided-rescue. Superintendent should consult with local fire department for rescue procedures and access to site

Inspections
- All Personal Fall Arrest System, Personal Fall Restraint System and Positioning Devices System components must be inspected at least prior to each use
- Employee inspections shall be documented daily by use of the Fall Protection Equipment Inspection form 10.3 located at the end of this section
- All tags and/or labels on the fall protection equipment must be legible

Service Life
- All Personal Fall Arrest System, Personal Fall Restraint System and Positioning Devices System components shall have a service life of no more than five (5) years after first use
- First use shall be considered the first time the device was sent to the project site
- The five (5) year date is to be considered the devices maximum service life and shall not over rule the condition of the device
- The condition of the device when inspected will dictate the usability of the device not how much time is remaining the five (5) years

Training Program
The employer shall provide a training program for each employee who might be exposed to fall hazards. The program shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to be followed in order to minimize these hazards. Fall protection training shall be site specific.

The employer shall assure that each employee has been trained, as necessary, by a competent person qualified in the following areas:

- The nature of fall hazards in the work area
- The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used
- The use and operation of the type of protection to be used
- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection
- The role of employees in the Site Specific Fall Protection Plan

Certification of Training
The employer shall verify fall protection training by a written certification record. The latest training certification shall be maintained at the main office.

- The written certification record shall contain:
  - The name of the employee trained
  - The date(s) of the training
  - The signature of the person who conducted the training
- Site Specific Training records should be sent to the office at the completion of the project

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, the employer shall retrain each such employee. Circumstances where retraining is required include:

- Changes in the workplace render previous training obsolete
- Changes in the types of fall protection systems or equipment to be used render previous training obsolete
- 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

DOSH Jurisdiction

In addition to the above program, projects in the Washington DOSH Jurisdiction shall comply with the following.

TGCS requires fall protection for work activities that expose workers to fall hazards of **10 feet** or more.

Where it relates to wall openings or open sided surfaces the trigger height is reduced to **4 feet** or more.

Definitions

- **Floor hole -** An opening measuring less than twelve inches but more than one inch in its least dimension in any floor, roof, or platform through which materials but not persons may fall
- **Low pitched roof** - A roof having a slope less than or equal to four in twelve
- **Unprotected side or edge -** Any side or edge of a roof perimeter where there is no wall three feet or more in height

Guardrails, Handrails and Covers

- When guardrails or covers must be temporarily removed to perform a specific task, the area shall be constantly attended by a monitor to warn others of the hazard or shall be protected by a movable barrier
- Ladder way floor openings or platforms shall be guarded by standard railings with standard toe boards on all exposed sides, except at entrance to opening, with the passage through the railing either provided with a swinging gate or so offset that a person cannot walk directly into the opening
- Hatchways and chute floor openings shall be guarded by one of the following:
    - Hinged covers of standard strength and construction and a standard railing with only one exposed side
    - A removable standard railing with toe board on not more than two sides of the opening and fixed standard railings with toe boards on all other exposed sides
    - The removable railing shall be kept in place when the opening is not in use and shall be hinged or otherwise mounted so as to be conveniently replaceable
    - All floor opening or hole covers shall be capable of supporting the maximum potential load but never less than two hundred pounds (with a safety factor of four)
    - All covers shall be color coded or they shall be marked with the word "hole" or "cover" to provide warning of the hazard
    - If it becomes necessary to remove the cover, a monitor shall remain at the opening until the cover is replaced
    - The monitor shall advise persons entering the area of the hazard, shall prevent exposure to the fall hazard and shall perform no other duties
- Guarding of wall openings
    - Wall openings, from which there is a drop of more than four feet, and the bottom of the opening is less than three feet above the working surface, shall be guarded as follows:
        - When the height and placement of the opening in relation to the working surface is such that either a standard rail or intermediate rail will effectively reduce the danger of falling, one or both shall be provided:
            - The bottom of a wall opening, which is less than 4 inches above the working surface, regardless of width, shall be protected by a standard toe board or an enclosing screen either of solid construction
            - An extension platform, outside a wall opening, onto which materials can be hoisted for handling shall have standard guardrails on all exposed sides or equivalent
            - One side of an extension platform may have removable railings in order to facilitate handling materials
            - When a chute is attached to an opening a toe board is not required
- Guarding of open sided surfaces
    - Every open sided floor, platform or surface four feet or more above adjacent floor or ground level shall be guarded by a standard railing, or the equivalent on all open sides, except where there is entrance to a ramp, stairway, or fixed ladder
    - The railing shall be provided with a standard toe board wherever, beneath the open sides, persons can pass, or there is moving machinery, or there is equipment with which falling materials could create a hazard
    - Runways shall be guarded by a standard railing, or the equivalent on all open sides, four feet or more above the floor or ground level
    - Wherever tools, machine parts, or materials are likely to be used on the runway, a toe board shall also be provided on each exposed side
    - Runways used exclusively for special purposes may have the railing on one side omitted where operating conditions necessitate such omission, providing the falling hazard is minimized by using a runway not less than 18 inches wide
    - Where employees entering upon runways become thereby exposed to machinery, electrical equipment, or other danger not a falling hazard, additional guarding shall be provided

  - Regardless of height, open sided floors, walkways, platforms, or runways above or adjacent to dangerous equipment shall be guarded with a standard railing and toe board
  - Open sides of gardens, patios, recreation areas and similar areas located on roofs of buildings or structures shall be guarded by permanent standard railings or the equivalent
  - Where a planting area has been constructed adjacent to the open sides of the roof and the planting area is raised above the normal walking surface of the roof area, the open side of the planting area shall also be protected with standard railings or the equivalent
- Standard specifications
  - For wire rope railings, the top and intermediate railings shall be at least 1/2 inch fiber core rope
  - For wire rope railings, posts shall be spaced not more than eight feet on centers
  - The rope shall be stretched taut, so as to present a minimum deflection
  - The anchoring of posts and framing of members for railings of all types shall be of such construction that the completed structure shall be capable of withstanding a load of at least 200 pounds applied in any direction at any point on the top rail, with a minimum of deflection
  - Railings receiving heavy stresses from employees trucking or handling materials shall be provided additional strength by the use of heavier stock, closer spacing of posts, bracing, or by other means
  - A standard toe board shall be nine inches minimum in vertical height from its top edge to the level of the floor, platform, runway, or ramp
  - Toe boards shall be securely fastened in place and have not more than 1/4 inch clearance above floor level
  - Toe boards may be made of any substantial material, either solid, or with openings not over 1 inch in greatest dimension
- Roofing brackets
  - Roofing brackets shall be constructed to fit the pitch of the roof
    - Brackets shall be secured in place by nailing in addition to the pointed metal projections
    - When it is impractical to nail brackets, rope supports shall be used
    - When rope supports are used, they shall consist of first grade manila of at least 3/4 inch diameter, or equivalent
  - Crawling boards or chicken ladders
    - Crawling boards shall be not less than ten inches wide and one inch thick, having cleats 1 x 1 1/2 inches
    - The cleats shall be equal in length to the width of the board and spaced at equal intervals not to exceed twenty-four inches
    - Nails shall be driven through and clinched on the underside
    - The crawling board shall extend from the ridge pole to the eaves when used in connection with roof construction, repair, or maintenance
    - A firmly fastened lifeline of at least 3/4 inch diameter rope, or equivalent, shall be strung beside each crawling board for a handhold
    - Crawling boards shall be secured to the roof by means of adequate ridge hooks or other effective means
- Ramps, runways, and inclined walkways
  - Width. Ramps, runways and inclined walkways shall be eighteen inches or more wide
  - Ramp specifications
    - Ramps, runways and walkways shall not be inclined more than twenty degrees from horizontal
    - When inclined shall be cleated or otherwise treated to prevent a slipping hazard on the walking surface

Fall Restraint Systems

- All safety belt and lanyard hardware assemblies shall be capable of withstanding a tensile loading of 4,000 pounds without cracking, breaking, or taking a permanent deformation
- Rope grab devices are prohibited for fall restraint applications unless they are part of a fall restraint system designed specifically for the purpose by the manufacturer, and used in strict accordance with the manufacturer's recommendations and instructions
- Anchorage points used for fall restraint shall be capable of supporting 4 times the intended load
- Restraint protection shall be rigged to allow the movement of employees only as far as the sides and edges of the walking/working surface

Warning line systems

- Can be used by all trades while working on a low pitched roof or on a walking working surface
- The rope, wire, or chain shall be rigged and supported in such a way that its lowest point (including sag) is no less than 36 inches from the roof surface and its highest point is no more than 42 inches from the roof surface
- When the path to a point of access is not in use, a rope, wire, or chain, equal in strength and height to the warning line, shall be placed across the path at the point where the path intersects the warning line erected around the work area
- Are prohibited on surfaces exceeding a 4 in 12 pitch, and on any surface whose dimensions are less than forty-five inches in all directions

Safety Monitor system

- Please note: Regardless of the jurisdiction, at no time shall the Safety Monitoring Systems be used as a means for fall protection without prior approval of the Safety Department
- A safety monitor system (SMS) may be used in conjunction with a warning line system as a method of guarding against falls during work on low pitched roofs and leading edge work only
- The employer shall ensure that the safety monitor system shall be addressed in the fall protection work plan, include the name of the safety monitor(s) and the extent of their training in both the safety monitor and warning line systems, and shall ensure that the following requirements are met
    - The safety monitor system shall not be used when adverse weather conditions create additional hazards
    - A person acting in the capacity of safety monitor(s) shall be trained in the function of both the safety monitor and warning lines systems and shall
        - Have control authority over the work as it relates to fall protection
        - Not supervise more than eight exposed workers at one time
    - In the Monitored or Control zone
        - Workers shall be distinguished from other members of the crew by wearing highly visible, distinctive, and uniform apparel readily distinguishing them from other members of the crew only while in the control zone
        - The employer shall ensure that each employee working in a control zone promptly comply with fall hazard warnings from safety monitors
- Are prohibited on surfaces exceeding a 4 in 12 pitch, and on any surface whose dimensions are less than forty-five inches in all directions

Catch Platforms

- A catch platform shall be installed within 10 vertical feet of the work area.
- The catch platforms width shall equal the distance of the fall but shall be a minimum of 45 inches wide and shall be equipped with standard guardrails on all open sides

Leading Edge Control Zone

- When performing leading edge work, the employer shall ensure that a control zone be established according to the following requirements
    - The control zone shall begin a minimum of six feet back from the leading edge to prevent exposure by employees who are not protected by fall restraint or fall arrest systems
    - The control zone shall be separated from other areas of the low pitched roof or walking/working surface by the erection of a warning line system
    - The warning line system shall consist of wire, rope, or chain supported on stanchions, or a method which provides equivalent protection
    - The spacing of the stanchions and support of the line shall be such that the lowest point of the line (including sag) is not less than thirty-six inches from the walking/working surface, and its highest point is not more than forty-two inches from the walking/working surface
    - Each line shall have a minimum tensile strength of 200 pounds
    - Each line shall be flagged or clearly marked with high visibility materials at intervals not to exceed 6 feet
    - After being erected with the rope, or chain attached, stanchions shall be capable of resisting without tipping over, a force of at least 16 pounds applied horizontally
    - When positive means of fall restraint or arrest are not utilized, a safety monitor system shall be implemented to protect employees working between the forward edge of the warning line and the leading edge

Site Specific Fall Protection Plan

Note: This plan must be developed and managed by a Competent Person. By signing this plan you are attesting that you have the training, knowledge and experience to meet the definitions of a Competent Person.

Project Name:	
Name of Plan Developer:	
Signature of the Developer:	
Onsite Manager of the Plan:	
Signature of the Manager:	

Tasks or Types of Work
List all the tasks or types of work where fall hazards are present

Task #1	
Task #2	
Task #3	

Fall Hazards and Protection System Used
From the list below enter the hazard type and the fall protection system to be used for each task or work type

Task #1	**Hazard Type**	**Fall Protection System Used**
Task #2	**Hazard Type**	**Fall Protection System Used**
Task #3	**Hazard Type**	**Fall Protection System Used**

Hazard Types			
Excavations	EX	Wall Openings	WO
Perimeter Edge (roof or floor)	PE	Leading Edge	LE
Open Sided Floor	OF	Elevator Opening	EO
Stair Opening	SO	Deck Access (roof or floor)	DA
Skylights	SL	Smoke Dome	SD
Decking Holes (roof or floor)	DH	Working from Heights	WH

Fall Protection Systems			
Guardrails	GR	Handrails	HR
Warning Lines (roofing work only)	WL	Safety Monitor (roofing work only)	SM
Warning Barrier	WB	Safety Net	SN
Fall Arrest (harness, lanyard, etc.)	FA	Fall Restraint	FR
Positioning Device	PD	Hole Covers	HC
Slide Guard	SG	Stairs/Handrails	SH
Scaffolding	SC	Ladders	LA
Man Lifts	ML		

Note: If Stairs, Scaffolding, Ladders or Man Lifts are used as a means for fall protection then all the requirements of those sections must be followed also.

Procedures for Assembly, Maintenance, Inspection and Disassembly List methods for each fall protection system used.	
Task #1	
Assembly:	
Maintenance:	
Inspection:	
Disassembly:	
Task #2	
Assembly:	
Maintenance:	
Inspection:	
Disassembly:	
Task #3	
Assembly:	
Maintenance:	
Inspection:	
Disassembly:	

Procedures for Handling, Storage, Securing Tools and Materials List methods for each task or work type.	
Task #1	
Task #2	
Task #3	

Procedures for Overhead Protection (above and below) List methods for each task or work type.	
Task #1	
Task #2	
Task #3	

Procedures for Rescue List methods when Personal Fall Arrest System is used.	
Task #1	
Task #2	
Task #3	

Note: A copy of the Site Specific Fall Protection Plan must be kept onsite at all times.

Site Specific Fall Protection Plan Sample

Note: This plan must be developed and managed by a Competent Person. By signing this plan you are attesting that you have the training, knowledge and experience to meet the definitions of a Competent Person.

Project Name:	ABC Courthouse Square
Name of Plan Developer:	JD Superintendent
Signature of the Developer:	John D Superintendent
Onsite Manager of the Plan:	Jack Foreman
Signature of the Manager:	Jack Foreman

Tasks or Types of Work List all the tasks or types of work where fall hazards are present	
Task #1	Set 18 foot high wall forming system
Task #2	Cut out floor sheathing for elevator shaft

Fall Hazards and Protection System Used
From the list below enter the hazard type and the fall protection system to be used for each task or work type

Task #1	**Hazard Type**	WH	**Fall Protection System Used**	FA/CW
Task #2	**Hazard Type**	DH	**Fall Protection System Used**	GR

Hazard Types			
Excavations	EX	Wall Openings	WO
Perimeter Edge (roof or floor)	PE	Leading Edge	LE
Open Sided Floor	OF	Elevator Opening	EO
Stair Opening	SO	Deck Access (roof or floor)	DA
Skylights	SL	Smoke Dome	SD
Decking Holes (roof or floor)	DH	Working from Heights	WH

Fall Protection Systems			
Guardrails	GR	Handrails	HR
Warning Lines (roofing work only)	WL	Safety Monitor (roofing work only)	SM
Warning Barrier	WB	Safety Net	SN
Fall Arrest (harness, lanyard, etc.)	FA	Fall Restraint	FR
Positioning Device	PD	Hole Covers	HC
Slide Guard	SG	Stairs/Handrails	SH
Scaffolding	SC	Ladders	LA
Man Lifts	ML	Catwalk	CW

Note: If Stairs, Scaffolding, Ladders or Man Lifts are used as a means for fall protection then all the requirements of those sections must be followed also.

Procedures for Assembly, Maintenance, Inspection and Disassembly List methods for each fall protection system used.	
Task #1	
Assembly:	Attach retractable to top of form and cable to bottom of form before setting form in place, then build a catwalk system with guardrails to the forms
Maintenance:	Retractable will be taken down each wall form set inspected and reset if ok, pull if not
Inspection:	All fall protection components will be inspected daily before use
Disassembly:	Retractable will be removed after catwalk and guardrail is in place – Reverse the order when disassemble of the forms takes place.
Task #2	
Assembly:	Build guardrail system before the decking is removed.
Maintenance:	Repair the system as needed
Inspection:	Inspect the system at least daily
Disassembly:	Once the elevator has been built remove guardrails

Procedures for Handling, Storage, Securing Tools and Materials List methods for each task or work type.	
Task #1	Tools and materials will be lift to the catwalk with a forklift. No tools or material will be stored on the catwalk overnight
Task #2	No material shall be stored directly next to the elevator shaft.

Procedures for Overhead Protection (above and below) List methods for each task or work type.	
Task #1	Install toe boards on the catwalks to protect those below. No hazard from above
Task #2	Install toe boards at elevator shaft all levels to protect for above and below. Once the elevator crew begins work place and additional screen between the toe boards and top rail

Procedures for Rescue List methods when Personal Fall Arrest System is used.	
Task #1	Rescue will be accomplished by use of the boomlift onsite.
Task #2	No need for special rescue procedures.

Note: A copy of the Site Specific Fall Protection Plan must be kept onsite at all times.

Full Body Harness		
Task	**Satisfactory**	**Unsatisfactory**
Inspect buckles, d-rings, snaps, thimbles, and wear pads for distortion, sharp edges, burrs, cracks or worn parts.		
Buckles work freely and securely		
Inspect all straps and webbing by bending over a 1.5 inch diameter object, verify all are free of frayed or broken fibers, pulled stitches, tears, abrasions, mold, burns and discoloration		
Labels should be present and legible		
Stored in a clean and dry location free of sunlight and chemical fumes.		

Serial Number of Equipment	**Equipment Description**

Lanyard		
Task	**Satisfactory**	**Unsatisfactory**
Inspect the lanyard broken fibers, frayed edges, distortions, or have any sharp edges, burrs, cracks or corrosion or discoloration.		
Inspect the connecting hooks for correct operation.		
Hook gates must move freely and lock into position.		
Inspect the shock absorber for activation, torn cover or damage.		
Labels should be present and legible		
Stored in a clean and dry location free of sunlight and chemical fumes.		

Serial Number of Equipment	**Equipment Description**

Other Personal Fall Arrest Equipment		
Task	**Satisfactory**	**Unsatisfactory**
Lifelines - Inspect the lifeline for broken fibers, frayed edges, distortions, or have any sharp edges, burrs, cracks or corrosion or discoloration.		
Anchoring Devices – Inspected for distortion, correct attachment devices use, correct number used.		
Retractable – Placed in the correct position, check for activation, latching capabilities, kinks, bends, frays in the cables, labels legible.		
Carabineers, Shackles, etc. – Check for cracks, distortions, wear spots, gates lockable		

Serial Number of Equipment	**Equipment Description**

Inspectors Name: _____ **Date: of Inspection** _____

Inspectors Signature: _____

Below is a list of TGC Structural (TGCS) Employees who have been trained on fall protection standards, company policies and procedures and the site specific fall protection plan.

Employee Name	Employee Signature	Date:	Trainer Initials

OSHA and OR-OSHA Jurisdictions

Each contractor working on a TGC Structural (TGCS) project will comply with OSHA, OR- OSHA, DOSH, Construction Industry Fire Protection and Prevention Regulations, in addition to the following policies/procedures.

The plan is intended to establish guidelines to reduce the number and severity of construction/maintenance related fires, prevent injury to TGCS and their subcontractor employees and client personnel, and eliminate losses associated with fire to client property and equipment.

This plan will encompass all temporary offices, trailers, storage sheds and structures during construction, alteration, and all demolition work on client property

Each subcontractor working on a TGCS project must comply the following:

Classes of Fires

- Fires are identified as one of four classes and various extinguishing methods are appropriate for each.
  - Class "A" – wood, paper, etc. (common combustibles)
  - Class "B" – flammable liquids, gasoline, fuel oil etc.
  - Class "C" – electrical equipment
  - Class "D" – flammable metals, magnesium, sodium etc.
- The extinguishing media for each type of fire include:
  - Water – recommended for class "A" fires and is used in conjunction with foam to control class "B" fires
  - Dry Chemical – depending on the chemical, may be used to extinguish class "A", "B", and "C" fires
  - Carbon Dioxide – recommended for class "C" fires
  - Dry Powder – used for class "D" fires and is usually supplied in a bucket with a scoop
    - Dry Powder is specifically formulated for use on burning metals
    - Dry Chemical extinguishers must not be substituted for Dry Powder

General Requirements

- A site-specific fire prevention program shall be developed at each project
- Client required permit procedures, fire watches, shields and blankets must be considered when developing site-specific fire prevention programs
- All firefighting equipment must be clearly visible and access to the equipment must be maintained at all times
- Only those fire extinguishers listed or approved by a nationally recognized testing laboratory (Underwriters Laboratories) may be used
- A 10 lb. ABC dry chemical fire extinguisher or equivalent must be provided for each 3,000 square feet of protected building area
- Typically, it is recommended that an extinguisher be placed at every stairwell on each level
- One or more fire extinguishers rated at not less than 10ABC shall be provided on each floor
- In multistory buildings, at least one fire extinguisher shall be located adjacent to the stairway
- Travel distance to a fire extinguisher must not exceed 100 feet
- Portable fire extinguishers must be inspected monthly
  - The documentation must be a weather resistant tag attached to the extinguisher or some other means of documenting inspections
- Used or defective equipment must be replaced immediately
- Exits/Egress Path must remain clear and free of obstructions and no doors are to be locked while the building is occupied

Fire Prevention

- Housekeeping is the best defense against fires
- Place all trash and debris in proper containers
- Place oily and/or paint soaked rags in a covered metal container
- Construction debris, rubbish and trash shall not be allowed to accumulate throughout the site
- Appropriate receptacles shall be provided for the collection of rubbish and debris
- Containers shall be placed in lunch trailers for scraps, empty food containers, and wrappers
- Refuse containers shall be emptied on a regular basis
- Temporary offices or trailers, when located inside of a building under construction, must be constructed of fire retardant materials
- Combustible materials, such as cardboard, wooden pallets, etc., must be removed from the work area immediately
- All work activity that uses flammable liquids, generates sparks and/or open flames must have a **Hot Work Permit** and a task specific fire extinguisher present at all times

Flammable and Combustible Liquids

- Flammable and combustible fuels must be stored in approved metal safety cans
- A safety approved can is a closed container, not more than 5 gallons, with a flash-arresting screen and a spring closing lid
- Flammable and combustible liquid containers shall be legibly marked to indicate their contents
- A fire extinguisher rated not less than 10 ABC, shall be provided within 50 feet of wherever more than five gallons of flammable or combustible liquids or 5 pounds of flammable gas are being used on the job site
- Flammable or combustible liquids shall not be stored in areas used for exits, stairways, or normally used for the safe passage of people
- Indoor storage of flammable or combustible liquids in excess of 25 gallons must be in an approved cabinet
- Outdoor storage areas must not exceed 1,000 gallons and must be graded in a manner to divert any spills away from a building
    - Where possible secondary containment should be used
    - Protection with Jersey type barriers is highly recommended
- Materials and supplies shall be stored in on orderly manner
- Material stored in tiers shall be stacked and blocked to prevent sliding, falling, or collapse
- Aisles and passageways shall be kept clear to provide free to firefighting equipment and personnel
- Flammable/combustible materials shall be stored separate from materials that would accelerate combustion or add to the fire load
- At least one 10 ABC dry chemical fire extinguisher (or equivalent) must be located within 25’ to 75’ of an outdoor storage area
- Flammable liquids may be used only where there are no open flames or other sources of ignition within 50 feet of the operation, unless conditions warrant greater clearance
- At least one portable fire extinguisher having a rating of not less than 10 ABC shall be provided on all vehicles used for transportation and/or dispensing flammable and combustible liquids
- Smoking shall be prohibited at or in the vicinity of operations which constitute a fire hazard, and shall be conspicuously posted: "No smoking"

Liquefied Petroleum Gas (LPG)

- LPG must never be stored inside buildings
- When damage to LPG systems from vehicular traffic is possible, precautions must be taken to eliminate the hazard

Temporary Heating Devices

- Fresh air must be supplied in quantities sufficient to maintain the health and safety of all employees
- If a competent person deems natural airflow inadequate, then mechanical ventilation must be provided
- Heaters used in the vicinity of tarpaulins, canvas or similar coverings must be located at least 10' from the covering and be secured so as to prevent ignition due to wind
- Open fires are not allowed on the project

Hot Work Permits

- Hot Work Permits must be used and are valid for one shift only
- A fire watch must be maintained at least 30 minutes (60 minutes depending on client expectations) after the hot work completion
- See Hot Work Permit at the end of this section

Employee Training

- Employees expected to use fire extinguishers must be trained in the following
    - Hazards of fighting fires in the incipient stage
    - Proper operation of fire extinguishers
    - Procedures to alert others
    - Evacuation routes and procedures
- Training is required before performing assigned job duties, and at least annually thereafter

This plan is not all inclusive but is intended to be a guide for TGCS Project Managers and Superintendents to develop a "site specific" fire protection plan. The plan should be developed and implemented as soon as practical after mobilization.

- The Site Specific Fire Prevention Program form is located at the end of this section (C11.2)

DOSH Jurisdiction

In addition to the above program, projects in the Washington DOSH Jurisdiction shall comply with the following.

Water Supply

- A temporary or permanent water supply, of sufficient volume, duration, and pressure, required to properly operate firefighting equipment shall be made available as soon as combustible materials accumulate
- Where underground water mains are to be provided, they shall be installed, completed, and made available for use as soon as practicable
- During demolition involving combustible materials, charged hose lines, supplied by hydrants, water tank trucks with pumps, or equivalent, shall be made available

Fixed Firefighting Equipment

- Sprinkler protection
    - If the facility being constructed includes the installation of automatic sprinkler protection, the installation shall closely follow the construction and be placed in service as soon as applicable laws permit following completion of each story
    - During demolition or alterations, existing automatic sprinkler installations shall be retained in service as long as reasonable
    - The operation of sprinkler control valves shall be permitted only by properly authorized persons
    - Modification of sprinkler systems to permit alterations or additional demolition should be expedited so that the automatic protection may be returned to service as quickly as possible
    - Sprinkler control valves shall be checked daily at close of work to ascertain that the protection is in service

- Standpipes
  - In all structures in which standpipes are required, or where standpipes exist in structures being altered, they shall be brought up as soon as applicable laws permit, and shall be maintained as construction progresses in such a manner that they are always ready for fire protection use.
  - The standpipes shall be provided with Siamese fire department connections on the outside of the structure, at the street level, which shall be conspicuously marked
  - There shall be at least one standard fire hose outlet at each floor

HOT WORK PERMIT

BEFORE INITIATING HOT WORK, CAN THIS JOB BE AVOIDED?
IS THERE A SAFER WAY?

This Hot Work Permit is required for any temporary operation involving open flames or producing heat and/or sparks. This includes, but is not limited to: Brazing, Cutting, Grinding, Soldering, Thawing Pipe, Torch Applied Roofing and Welding.

1. Fire Safety Supervisor:

A. Verify precautions listed at right (or do not proceed with work).
B. Log permit in Hot Work book
Permit Number _____

HOT WORK BEING DONE BY:

EMPLOYEE: _____

CONTRACTOR: _____

DATE: JOB NO.

LOCATION / BUILDING & FLOOR:

NATURE OF JOB:

NAME OF PERSON DONG HOT WORK:

I verity the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for this work.

SIGNED: (FIRE SAFETY SUPERVISOR):

PERMIT EXPIRES	DATE:	TIME:		AM PM

REQUIRED PRECAUTIONS CHECKLIST

Available sprinklers, hose streams and extinguishers are in service/operable.
Hot Work equipment in good repair.

Requirements within 35 ft (11m) of work

Flammable liquids, dust, lint and oily deposits removed.

Explosive atmosphere in area eliminated.
Floors swept dean.

Combustible floors wet down, covered with damp sand or fire-resistive sheets.
Remove other combustibles where possible Otherwise protect with fire-resistive tarpaulins or metal shields.
All wall and floor openings covered.

Fire resistive tarpaulins suspended beneath work.

Work on walls or ceilings

Construction is noncombustible and without combustible covering or insulation.
Combustibles on other side of walls moved away.

Work on enclosed equipment

Enclosed equipment cleaned of all combustibles

Containers purged of flammable liquids / vapors.

Fire watch/Hot Work area monitoring

Fire watch will be provided during and for 30 minutes after work, including any coffee or lunch breaks.

Fire watch is supplied with suitable extinguishers, charged small hose.
Fire watch is trained in use of this equipment and in sounding alarm.
Fire watch may be required for adjoining areas, above, and below.
Monitor Hot Work area for 30 minutes after job is completed.

Other Precautions Taken:

Site Specific Fire Prevention Program

Jobsite Name: _____

Jobsite Address: _____

Superintendent Name: _____

Jobsite Phone Number: _____ **Emergency Number:** **If other than 911** _____

Type of Construction:

Steel	☐	CMU or Brick	☐
Wood Framing	☐	Concrete	☐
Steel / Concrete	☐	Wood / Concrete	☐

Activities With Fire Hazards Anticipated to be Present on This Project **(Anything that involves an open flame, sparks or involves a flammable gas or liquid)**

Cutting Metal or Steel with a Torch	☐	Grinding of Metal or Steel	☐
Soldering/Brazing Plumbing Pipes	☐	Torch Down Roofing	☐
Finishing/Refinishing Wood Floors	☐	Use of Flammable Liquids	☐
Use of Flammable Gasses	☐	Storage of Flammable Materials	☐
Temporary Heating Systems	☐	Weed Burners	☐
	☐		☐

Fire Protection/Prevention Systems to be Used/Required on This Project

Hot Work Permits	☐	Area Fire Extinguishers	☐
Task Fire Extinguishers	☐	Fire Blankets	☐
Fire Watch	☐	Water Spray Cans	☐
Existing Fire Hydrants	☐	New Fire Hydrants	☐
Existing Fire Alarm System	☐	New Fire Alarm System	☐
	☐		☐

Based on the information from above, list any/all special procedures, equipment or policies that will need to be put into place to control the potential fire hazards.

Existing Facility		
Is the project part of an existing facility? **(If yes answer the following. If no skip this section)**	Yes ☐	No ☐
Will the facility be occupied while work is taking place?	Yes ☐	No ☐
Is there any demo work involved with this project?	Yes ☐	No ☐
Does the existing facility have an existing fire alarm system?	Yes ☐	No ☐
If yes, will it be modified or impacted during construction?	Yes ☐	No ☐
Will the system be shut down during the work day?	Yes ☐	No ☐
Will the system be activated prior to leaving the site at night?	Yes ☐	No ☐
While shut down, are there any special fire prevention procedures needed?	Yes ☐	No ☐
Fire Watch?	Yes ☐	No ☐
Special Notifications?	Yes ☐	No ☐
Additional firefighting equipment?	Yes ☐	No ☐
Does the existing facility have an existing fire sprinkler system?	Yes ☐	No ☐
If yes, will it be modified or impacted during construction?	Yes ☐	No ☐
Will the system be shut down during the work day?	Yes ☐	No ☐
Will the system be activated prior to leaving the site at night?	Yes ☐	No ☐
While shut down, are there any special fire prevention procedures needed?	Yes ☐	No ☐
Fire Watch?	Yes ☐	No ☐
Special Notifications?	Yes ☐	No ☐
Additional firefighting equipment?	Yes ☐	No ☐
Any special procedures that need to be put in place to meet the client's requirements?	Yes ☐	No ☐
Does the existing facility have existing active Fire Hydrants?	Yes ☐	No ☐
Will those Fire Hydrants be kept active at all times?	Yes ☐	No ☐

Based on the answers from above, list all special procedures, equipment or policies that will need to be put into place to control the potential fire hazards.

Each contractor working on a TGC Structural (TGCS) project will comply with OSHA, OR- OSHA, DOSH, Construction Industry Hand, Power and Powder Actuated Tool Regulations, in addition to the following policies/procedures.

General Requirements

- Additional personal protective equipment (PPE), such as a face shield, Kevlar gloves, metatarsal protection, chaps, respirator or hearing protection, may be required while operating a tool
- Hand and power tools must be maintained in a safe condition, per manufacturer's guidelines
- If for any reason, a tool is found to be unsafe or not in compliance OSHA or the Manufactures standards, it must be taken out or service, tagged as unsafe for use and removed from the site as soon as possible
- Only trained employees may operate the tools
- If the tool is designed to accommodate a guard, the guard must be in place while the tool is being used

Hand Tools

- Drift pins, wedges, chisels and other impact tools must be kept free of mushroomed heads
- Wrenches must not be used when the jaws are sprung and slippage is probable

Electric Powered Tools

- All power tools must be double insulated or provided with a three wire, grounded connection

Pneumatic Power Tools

- Each connection on a pneumatic tool and air hose must be secured with a "whip-check" or similar device
- All air hoses, with an inside diameter exceeding ½ inch, must have a flow reduction device at the supply source to reduce pressure in case of hose failure
- Compressed air must not be used for cleaning personnel unless the pressure is reduced to less than 30 PSI. and appropriate guarding and PPE are in place

Fuel Powered Tools

- Fuel powered tools must be stopped and turned off while being refueled, serviced or maintained

Abrasive Wheels and Tools

- All workers using hot saw or chop saw type tools are required to wear goggles or a face shield/safety glass combination
- All workers using hand held, bench mount or floor mount grind wheels on metal surfaces are required to wear Kevlar gloves, goggles or a face shield/safety glass combination
- The RPM rating on all grinding machine motors must not exceed the speed rating of the grinding wheel attachment
- All abrasive wheels must be closely inspected and ring tested before mounting to ensure they are free from cracks or defects
- The gap between the work rest and abrasive wheel of a bench or floor mounted grinder must not exceed 1/8 inch

Backpack Type Gas Powered Leaf Blowers and Similar Tools

- All workers are required to place both arms through the shoulder straps when operating this tool
- All workers are required to wear 18 inch flame retardant protective sleeves on both arms when operating this tool

Chainsaws

- Persons using chainsaws must wear chaps or leg protectors that cover the leg from the upper thigh to mid-calf

- The chaps must be made of a material designed to resist cuts from the chainsaw

Woodworking Tools

- All fixed, power driven woodworking tools must be equipped with a disconnect switch that can be locked out in the off position
- All portable, power driven circular saws must be equipped with guards above and below the base plate or shoe
- When the tool is withdrawn from the wood, the lower guard must automatically and instantly return to the covering position

Powder Actuated Tools

- Permit only trained, competent and authorized personnel to use powder actuated tools
- These tools operate like loaded guns, so handle them with the same respect and safety precautions
- Operators must have an operator's card supplied by the manufacture
- Safety rules for operation
    - The tool should NEVER be pointed at anyone
    - Before use, the tool should be checked to see that it is clean, that all moving parts operate freely, and that the barrel is free of obstructions
    - All body parts should be kept clear of the barrel end
    - These tools should not be used in an explosive or flammable environment
    - Face shield or glasses, and hearing protection must be worn during tool operation
    - The muzzle end of the tool must have a protective shield or guard centered perpendicularly on the barrel to confine any flying fragments or particles the tool might create when it is fired
    - Load powder-actuated tools just before use
    - Do not carry loaded tools from task area to task area
    - Do not leave powder-actuated tools unattended
    - Warning signs must be posted in the area of use, stating "POWDER-ACTUATED TOOLS IN USE"
    - Clean and maintain tools according to manufactures recommendations
    - If the tool develops a defect, it should be tagged and removed from use immediately
- Fasteners
    - Use only fasteners recommended by the manufacturer
    - Make sure to use the correct loads for the job
    - Fasteners must not be driven into material that would let them pass through the other side
    - The fastener must not be driven into materials like brick or concrete close to an edge or corner
    - In steel, the fastener must not come any closer than ½" from a corner or edge
    - Fasteners must not be driven into very hard or brittle materials that might, chip, splatter, or make the fastener ricochet
    - Use the tool at a right angle to the work surface
    - If the tool should misfire, you should hold the tool in the fixed position for at least 30 seconds and then unload with extreme caution
    - Misfired loads should be placed in water
    - Store tools and cartridges in a locked container
    - Do not attempt to force a cartridge in a tool
    - Do not carry cartridges loose, in a pocket or in a tool pouch
    - Provide adequate ventilation in confined spaces where powder-actuated tools may be used

Each contractor working on a TGC Structural (TGCS) project will comply with OSHA, OR- OSHA, DOSH, Powered Industrial Truck (forklift) Regulations, in addition to the following policies/procedures.

TGCS requires that any employee or subcontractor employee that operates a powered industrial truck (forklift) of any size must first complete a training program. Upon completion of the training program the operator must be evaluated by the trainer before being allowed to operate a forklift on an actual jobsite.

Training Program Implementation

- Trainees may operate a forklift only
  - Under the direct supervision of persons who have the knowledge, training and experience to train operators and evaluate their competence
  - Where such operation does not endanger the trainee or other employees
  - Operator training and evaluations must be conducted by persons who possess the knowledge, training, and experience to train forklift operators and evaluate their competence

Training Program Content

- Forklift Operators shall receive initial general training on the following topics
  - Operating instructions, warnings, and precautions for the types of forklift the operator will be authorized to operate
  - Differences between the forklift and the automobile
  - Forklift controls and instrumentation, where they are located, what they do, and how they work
  - Engine or motor operation
  - Steering and maneuvering
  - Visibility (including restrictions due to loading)
  - Fork and attachment adaptation, operation, and use limitations
  - Vehicle capacity and how to use the load chart
  - Vehicle stability
  - Any vehicle inspection and maintenance the operator will be required to perform
  - Refueling and/or charging of batteries
  - Operating limitations
  - Any other operating instruction, warnings, or precautions listed in the operator's manual for the type of vehicle the operator is being trained to operate
- Workplace Topics – Site Specific
  - Familiarization training specific to the forklift the operator will use
  - Changing surface conditions where the vehicle will be operated
  - Composition of loads to be carried and load stability
  - Load manipulation, stacking, and un-stacking
  - Pedestrian traffic
  - Narrow and restricted areas where the forklift will be operated
  - Ramps and sloped surfaces that could affect the vehicles stability
  - Hazardous locations where the vehicle will be operated
  - Closed environments and other areas where insufficient ventilations could cause the buildup of carbon monoxide or diesel exhaust
  - Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation
- Refresher Training
  - Operator refresher training shall be conducted at least every three years by persons who possess the knowledge, training, and experience to evaluate operators in their competence
  - Refresher training may be required if
    - An operator has been observed operating a forklift in an unsafe manner

- An operator is involved in an accident or near miss incident
- An operator is assigned to operate a different type or size of forklift
- A condition in the workplace changes which could affect the safe operation of the forklift

Documentation

- It is required by OSHA that any operator that is trained and or evaluated in forklift operation be "Qualified" by documentation of such.
  - TGCS will issue trained operators a forklift card which includes the following
    - The name of the operator being trained
    - The date the training was conducted
    - The date the operator was evaluated
    - The name and signature of the trainer
- It is required by OSHA that any operator that is trained and or evaluated in forklift operation be trained on the specific forklift the operator will use and on the conditions of the site where the equipment will be operated
  - This training will be documented by use of the familiarization sheets at the end of this section

Inspections

- Inspections procedures will be conducted as follows
  - All powered industrials trucks must be inspected by the certified operators daily or prior to each shift
  - Qualified operators will document the daily or pre shift inspections
  - If for any reason, a powered industrial truck is found to be unsafe or not in compliance OSHA or the Manufactures standards, it must be taken out or service, tagged as unsafe for use, repaired or removed from the site as soon as possible
  - Blank daily inspection sheets are located at the end of this section

Use of Elevated Platforms with Powered Industrial Trucks (Forklifts)

- Forklifts must be designed to lift personnel on a work platform. (Owner's Manual)
  - This must be verified, if it cannot be then the Forklift cannot be used
- Forklifts manufacturer must allow the use of a platform with its equipment (Owner's Manual)
  - This must be verified, if it cannot be then the Forklift cannot be used
- Forklifts hydraulic lifting mechanism shall not drop faster than 135 ft per minute in the event of a failure of any part of the system
- Forklifts must not travel from point to point while platform is occupied.
  - Inching while occupied is permitted.
- The operator shall be in the operators position when anyone is on the platform
- The operator shall be in the operators position when raising or lowering the platform
- The platform shall be equipped with a standard guardrail system
- The platform shall be firmly secured to the lifting carriage or the forks
- The platform shall have an anchorage point designed for use with a lanyard
- The anchorage shall be rated at 5,000 and be verifiable
- The width of the platform shall not exceed 10 inches on each side beyond the width of the wheels
- Pinch points and shear points between the platform and the Forklift must be screened and/or guarded
- Personnel in the platform must be tied off to the anchorage points discussed above
- Operator of the pit must be trained to operate the Forklift with personnel in a platform

Daily Forklift Safety Inspection Checklist

Project: _____ **Company:** _

Competent Person: _____ **Inspection Date:** _

Operator: _____ **Inspection Time:** _

Type of Forklift: _____ **Model or Equip #** _

Note anything abnormal on the back of this form

Inspection Item & Description (Yes/No or NA)	**Y**	**N**	**NA**
Operator has received General Forklift Training in the last 3 years?			
Operator has received Forklift Specific Familiarization Training for this lift?			
Project Superintendent has proof of both trainings on file?			
Before Starting the Engine Check the Following (Walk Around Items)			
Are all decals, signs and labels present and legible?			
Is there any evidence of a fluid leak around the forklift?			
Are the forks, front end, carriage, mast and/or boom in good shape?			
Are the wheels, tires, and lug nuts in good shape? Rust free?			
Air pressure in the tires adequate?			
Engine checked, belts, fluids full, no leaks present?			
Transmission checked, fluids full, no leaks present?			
Air and Fuel filter in good shape?			
Radiator checked and full?			
Hydraulic tank checked and full?			
Fuel tank checked and full?			
ROPS or overhead guard checked for damage and/or cracks?			
Service hours checked for next major service job?			
All required lubrication is adequate?			
Seat belt is present and in good working order?			
After Starting the Engine Check the Following (Start-Up Items)			
Is engine running normally?			
Are all instruments legible and operating normally?			
Is exhaust operating normally?			
Are all lights in good condition and operating normally?			
Are the horn and back-up alarms operating?			
Are all the controls checked and working normally?			
Brakes, transmission and steering operating normally?			
Is there anything abnormal indicated on the back of this form?			

Extended Reach Forklift
Make/Model Specific Familiarization

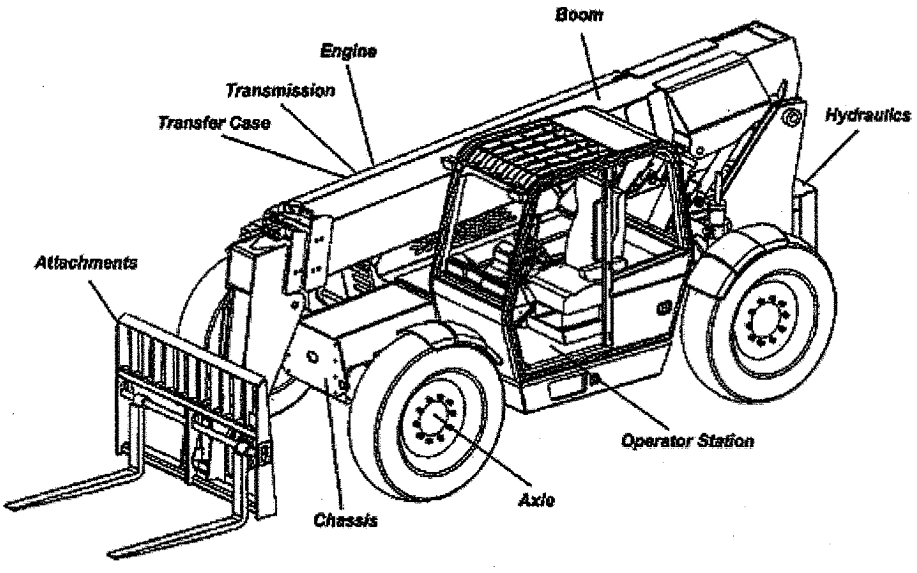
Employees Name: _____ **Date:** _____
(Please Print)
Employees Signature: _____ **Jobsite:** _____

Instructors Name: _____
(Please Print)
Instructors Signature: _____

Brand Name and Model: _____ **Rental Co:** _____

Evaluation/Familiarization:

- ☐ Manual located and reviewed
- ☐ Pre-operation inspection
- ☐ Inspect work area (holes, vaults, power lines, overhead hazards, firm level surfaces, etc.)
- ☐ Capacity plate – Load chart – 24 inch load center
- ☐ Seatbelt use
- ☐ Operation of controls
- ☐ Driving procedures
- ☐ Back procedures
- ☐ Parking procedures
- ☐ Picking loads
- ☐ Placing loads
- ☐ Unique characteristics
  - ☐ Swivel Carriage
  - ☐ Outriggers
  - ☐ Attachments _____
  - ☐ Fuel type _____
  - ☐ Max slope _____
  - ☐ Max reach _____



Straight Mast Forklift
Make/Model Specific Familiarization

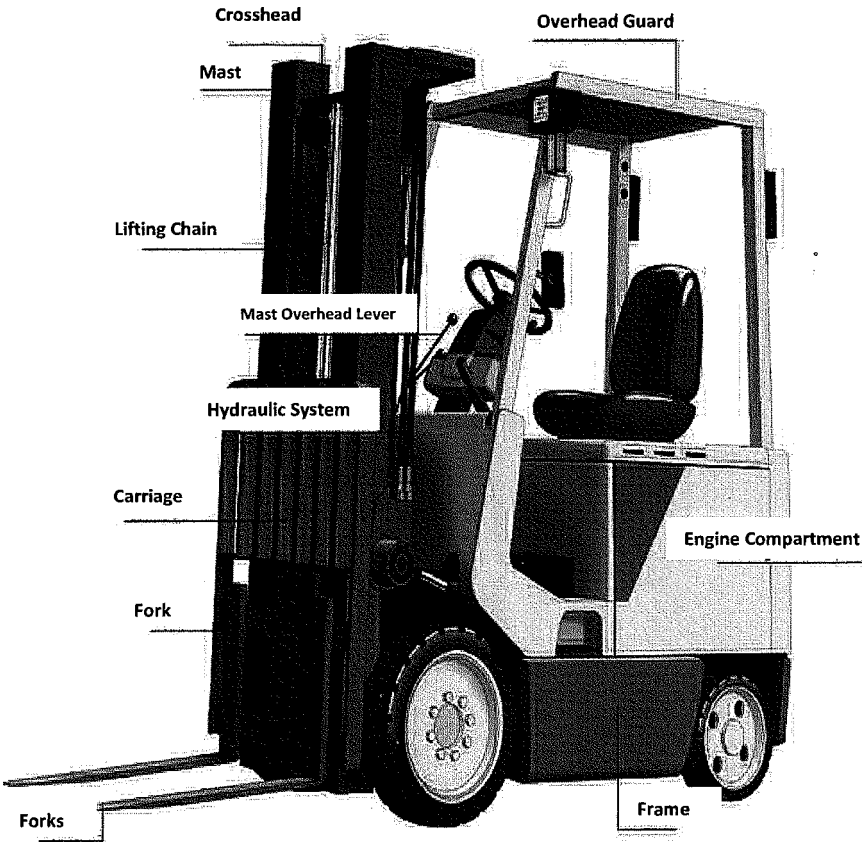
Employees Name: _____ **Date:** _____
(Please Print)
Employees Signature: _____ **Jobsite:** _____

Instructors Name: _____
(Please Print)
Instructors Signature: _____

Brand Name and Model: _____ **Rental Co:** _____

Evaluation/Familiarization:

- ☐ Manual located and reviewed
- ☐ Pre-operation inspection
- ☐ Inspect work area (holes, vaults, power lines, overhead hazards, firm level surfaces, etc.)
- ☐ Capacity plate – Load chart – 24 inch load center
- ☐ Seatbelt use
- ☐ Operation of controls
- ☐ Driving procedures
- ☐ Backing procedures
- ☐ Parking procedures
- ☐ Picking loads
- ☐ Placing loads
- ☐ Unique characteristics
  - ☐ Free lift (second stage moves)
  - ☐ None marking tires
  - ☐ Attachments _____
  - ☐ Fuel type _____
  - ☐ Max slope _____
  - ☐ Max height _____



OSHA and OR-OSHA Jurisdictions

Each contractor working on a TGC Structural (TGCS) project will comply with OSHA, OR- OSHA, DOSH, Construction Industry Motor Vehicles, and Mechanized Equipment Operation Regulations, in addition to the following policies/procedures.

General Requirements:

- Heavy machinery, equipment, which are suspended or held aloft by use of slings, hoists, or jacks shall be substantially blocked or cribbed to prevent falling or shifting before employees are permitted to work under or between them
- Bulldozer and scraper blades, end-loader buckets, dump bodies, and similar equipment, shall be either fully lowered or blocked when being repaired or when not in use
- All controls shall be in a neutral position, with the motors stopped and brakes set, unless work being performed required otherwise
- All equipment left unattended at night, adjacent to a highway in normal use, or adjacent to construction areas where work is in progress, shall have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, to identify the location of the equipment
- All operations requiring the use of heavy equipment will require a pre-planning meeting to coordinate and prevent injuries to workers and the public
- Whenever the equipment is parked, the parking brake shall be set. Equipment parked on inclines shall have the wheels chocked and the parking brake set
- No equipment, vehicle, tool, or individual shall operate within 10 feet of any power line or electrical distribution equipment
- All vehicles must be equipped with an operable audible warning device (horn) at the operator's station
- All motor vehicles and material handling equipment, with an obstructed view to the rear, must have a reverse signal alarm audible above the surrounding noise
- A “spotter”, wearing an ANSI approved high visibility traffic vest, may be used in lieu of an alarm, but only if such devices are not routinely supplied on such a vehicle
- Vehicles must never back “blind” on the project
- A seatbelt must be provided and used when operating equipment
- All windows must be in full working condition. Any equipment with broken glass of any size, including mirrors will be taken out of service
- Each employee working near or crossing a site where equipment is in use must wear High Visibility Clothing
- Equipment without a rollover protective structure (ROPS) or seatbelt is not allowed unless they are specifically designed by the manufacturer not to have them.
- Cell phones and radios should not be used while operating machinery
- No one may work within 20’ of motorized equipment like an excavator, backhoe, loader etc. unless that persons presence is fundamental to the operation underway and the operator can observe the person at all times
- All pieces of equipment must be inspected daily or prior to each shift
- If for any reason, a piece of equipment is found to be unsafe or not in compliance OSHA or the Manufactures standards, it must be taken out or service, tagged as unsafe for use, repaired or removed from the site as soon as possible

DOSH Jurisdiction

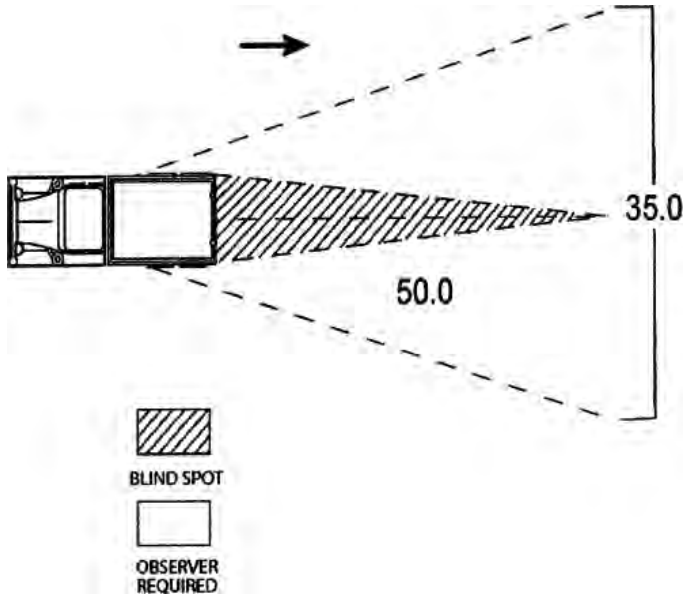
In addition to the above program, projects in the Washington DOSH Jurisdiction shall comply with the following.

General Requirements

- Where traffic is diverted onto dusty surfaces, good visibility shall be maintained by the suppression of dust, through the periodic application of oil or water to the grade surface, as required
- Operating vehicles, other than passenger cars and pickups, with an obstructed view to the rear is prohibited unless the vehicle meets one of the following
    - Has an operable automatic backup alarm
    - Audible above the surrounding noise level
    - Audible no less than fifteen feet from the rear of the vehicle
    - Is backed up when a spotter signals that it is safe to do so
- If the surrounding noise level is so loud that the backup alarms are not effective, then a spotter must be used
- A spotter must
    - Be in direct line of sight or be able to communicate with the driver
    - Be able to see the entire backing zone
    - Continue to provide direction to the driver until the driver reaches the destination and stops or there is no longer employees in the backing zone

Operating Dump Trucks in Reverse

- The term "dump trucks" includes both belly and rear dump trucks with a minimum payload of four yards
- Has an operable automatic backup alarm
- Audible above the surrounding noise level and
- Audible no less than fifteen feet from the rear of the vehicle
- Before backing a dump truck the driver must determine that no one is currently in the backing zone and it is reasonable to expect that no employee(s) will enter the backing zone while operating the dump truck in reverse
- If employee(s) are in the backing zone or it is reasonable to expect that an employee(s) will enter the backing zone, you must make sure the truck is backed up only when
    - An observer signals that it is safe to back
    - An operable mechanical device that provides the driver a full view behind the dump truck is used, such as a video camera
- The following diagram defines the backing zone (Distances are reported in feet)



- Exemptions
    - Employees are considered protected when they are on the opposite side of a fixed barrier such as
        - A jersey barrier
        - A piece of heavy equipment or
        - A six-inch concrete curb

Each contractor working on a TGC Structural (TGCS) project will comply with OSHA, OR- OSHA, DOSH, Construction Industry Scaffolds and/or Aerial Work Platforms Regulations, in addition to the following policies/procedures.

Scaffolding

General Requirements

- Capacity
  - Scaffolds shall be designed by a qualified person and shall be constructed and loaded in accordance with that design
  - Each scaffold and scaffold component shall be capable of supporting, without failure, its own weight and at least 4 to 6 times the maximum intended load applied or transmitted to it
- Erection
  - Scaffolds must be erected under the supervision of a competent person
  - The name and qualifications of this person must be submitted to the TGCS Superintendent prior to the start of work
- Planking
  - Only scaffold grade planking shall be used
  - All working levels must be fully planked
- Supported Scaffolds
  - Scaffold poles, legs, posts, frames and uprights must be placed on compatible wheel assemblies or steel base plates, then mudsills or other adequate firm foundations
  - Steel plates must be secured to the mudsills
  - When free standing scaffold exceed four times their minimum base dimension vertically, they must be restrained from tipping
- Suspension Scaffolds
  - Counterweights must be made of non-flowable material
  - Sand, gravel, water or similar material may not be used
  - Counterweights must be secured to the outrigger beams by mechanical means to prevent accidental displacement
  - Outrigger beams that are not bolted to the structure must be secured by tiebacks
    - The tiebacks must be attached to a structural member of the building
    - Standpipes, vents, conduit and other piping systems are not adequate structural members
- Scaffold Access
  - When scaffold platforms are more than 2’ above or below a point of access, proper ladders must be installed
  - Cross bracing must never be used as a means of access
  - Stair rail and handrail systems must be smooth surfaced so as to prevent lacerations or puncture wounds
  - A competent person must evaluate and decide whether a ladder, or other safe means of access, is feasible during the erection and dismantling of scaffolds
- Scaffold Use
  - A competent person must inspect each scaffold before every shift and after any occurrence that may affect its structural integrity
  - Scaffolding inspection checklist is included at the end of this section
  - A tagging program can be used to verify daily inspection of the scaffolding, stair tower or similar
  - If the tag system is used the
    - Tag shall be present on all scaffolding
    - The competent person will “tag” the scaffold “in service” or “out of service” prior to employee use

  - Any damaged or defective component discovered during the inspection will require
    - Scaffolding immediately taken out of service until the component is repaired or replaced
    - Scaffolding shall be tagged as "out of service" by a positive means
- Fall Prevention
  - A Personal Fall Arrest System (PFAS) or guardrail system must be in place on all scaffolds at 10 feet or higher
  - If cross bracing is used as the midrail, the competent person must demonstrate to the TGCS Superintendent that all components of the cross bracing meets the OSHA Standards for use as midrail
  - The use of fall prevention devices are required during the erection or dismantling of a scaffold
  - If the competent person does not feel this is feasible the Safety Department must be consulted prior to erection or dismantling
  - On suspension scaffolds the personal lifelines must be independent of the scaffold support lines
- Falling Object Protection
  - The area below a working scaffold must be barricaded to protect employees from a falling object hazard
  - Toeboards or other means of falling object protection is required at all times

Requirements for Specific Scaffold Types

- Tube and Coupler Scaffolds
  - Tube and coupler scaffolds, in excess of 125', must be designed by a Registered Professional Engineer (RPE)
- Fabricated Frame Scaffolds
  - Frames and panels must be braced by cross, horizontal or diagonal braces
  - Frames and panels must be joined together vertically by stacking pins or equivalent couplings
  - Frame scaffolds, in excess of 125", must be designed by an RPE
- Pump Jack Scaffolds
  - Brackets, braces and accessories must be fabricated from metal
  - Each pump jack bracket must have two positive gripping mechanisms to prevent failure
- Mobile Scaffolds
  - Mobile scaffolds must be braced by cross, horizontal or diagonal braces based on manufacturer's requirements to prevent racking during movement
  - All wheels must be locked when in use
  - At no time will a worker "self propel" a mobile scaffolding
  - Caster and wheel stems must be pinned to the scaffold legs or adjustment screws
  - Scaffold sections must be pinned to prevent displacement
  - The height to base width ratio on a mobile scaffold cannot exceed 2:1 unless it is braced with outrigger frames
  - Scaffolds that are less then 45" in width (Baker Type), a guardrail is required when working height is greater then 6 feet above the floor. In addition, if more then one section is used on this type of scaffold, outriggers must be used
  - Do not attempt to move mobile scaffolding without sufficient help to watch for obstructions on the floor and overhead

Scaffold Training Requirements

- Each employee that works on a scaffold must be trained by a qualified person in the recognition and avoidance of hazards associated with the type of scaffold they will be required to work from
- Training for employees must be documented using the sign in sheet at the end of this section.
- The training shall include the following areas, as applicable
  - The natures of any electrical hazards and falling object hazards in the work area

  - The correct procedures for dealing with electrical hazards and for erecting, maintaining, and disassembling the fall protection systems and falling object protection systems being used
  - The proper use of scaffold, and the proper handling of materials on the scaffold
  - The maximum intended load and the load carrying capacities of the scaffolds used
- Each employee involved in the erection, dismantling, moving, operating, repairing, maintaining or inspecting of a scaffold must be trained by a qualified person in the recognition and avoidance of hazards associated with these operations
- The training shall include the following topics as applicable
  - The nature of scaffold hazards
  - The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold in question
  - The design criteria, maximum intended load carrying capacity and intend use of the scaffold
  - Any other pertinent requirements of OSHA regulations

Aerial Work Platforms

General Requirements:

- All scissor lift, boom lifts and articulating boom platforms must be inspected pre-shift to assure there are no mechanical defects
- Employees shall use the Scissor/Boom Lift Inspection checklist is included at the end of this section
- Daily inspections shall be documented by the subcontractors and are subject to verification by the Superintendent
- Field modifications are not allowed on aerial lifts
- Only authorized and trained individuals may operate aerial lifts
- Boom and basket load limits specified by the manufacture should not be exceeded
- The brakes shall be locked on when outriggers are used
- The outriggers shall be positioned on pads or a solid surface
- Wheel chocks must be used before using an aerial lift on an incline, provided they can safely be installed
- An aerial lifts must be in the lowered position to travel
- Slight movements can be made in the raised position to fine tune your placement
- A spotter may be needed when there is a potential for operator or pedestrian injury due to physical contact with the facility, systems or structures or in congested areas
- An unimpaired horizontal clearance of not less than 3 feet shall be maintained between the rotating superstructure of any mechanical equipment and any adjacent object or surface
- If this clearance cannot be maintained, barricades shall be installed to isolate the hazardous area
- Spotters may also be needed when there is a potential for damage to sensitive facility systems or structures
- Employees must use personal fall arrest systems (PFAS) when working from articulating boom platforms
- When working from a scissor lift, the use of fall prevention devices depends upon several factors, including, but not limited to the following
  - Client / contract requirements
  - Manufacturer's recommendations
  - Site specific requirements
- Anytime a worker doesn't have at least one foot on the scissors lift deck, 100% fall protection is required
- Aerial Lift Training Requirements
  - Each employee that works on an aerial work platform must be trained by a qualified person in the recognition and avoidance of hazards associated with the type of aerial lift they will be required to work from
  - Each employee operating an aerial work platform must receive general training in the general safe operation procedures of aerial work platforms

- This training must be done by a qualified person such as rental company training specialist or the Safety Department
- A operators card will be issued after successfully completing this training

- Each employee operating an aerial work platform must receive familiarization training on the specific aerial work platform they are operating
  - This training must be done by the Superintendent/foreman, rental company training specialist or the Safety Department
  - A familiarization sheet for each specific lift must be filled out by the trainer and signed by the employee and trainer
  - Familiarization sheets can be found at the end of this section

Daily Scaffold Safety Inspection Checklist

Project: _____ **Company:** _____

Competent Person: _____ **Inspection Date:** _____

Foreman: _____ **Inspection Time:** _____

Inspection Item & Description (Yes/No or NA)	Y	N	NA
Has the competent person determined the feasibility of tying off during erection?			
Have base plates been installed?			
Are mudsills properly placed and adequately sized?			
Have screw jacks been used to level and plumb scaffold instead of unsafe objects?			
Are base plates and/or screw jacks in firm contact with sills and frames?			
Have base plates been secured to the mudsills with at least one attachment point?			
Are all scaffold legs braced with braces properly attached?			
Is guard railing in place on all open sides and ends above the 10' level?			
Have ladders been provided as a means of access to the scaffold?			
Have free standing towers been guyed or tied so as not to exceed the 4 to 1 base height ratio?			
Are working level platforms fully planked between guard rails with no split planking used?			
Does planking have minimum 12" overlap extended beyond supports and cleated at ends?			
Are toe-boards or other falling object protection installed properly?			
Are safety harnesses available for use when needed?			
Have all employees working on scaffold received user training for this type of scaffolding?			
Are out riggers properly installed at 90 degree angles perpendicular to the bldg.?			
Have scaffold components been properly inspected for damage and compatibility?			
Rolling Towers/Baker/Perry Scaffolds			
Are outriggers (if required) properly installed on both sides of rolling towers?			
Are platforms fully planked with no gaps greater than 1 inch?			
Are wheel brakes operable, and have employees been instructed to set brakes while in use?			
Are all the wheel brakes engaged?			
Are safety rails installed at the 10 foot level, or some other type of fall protection?			
Have all employees working on scaffold received user training for this type of scaffolding?			
Have casters been pinned to prevent them from coming separated from the scaffold legs?			
Scaffold Stair Towers			
Tower properly secured to the building			
Stairs treads and landings secure and free of debris			
All hand and guardrails installed and in good condition			

Below is a list of TGC Structural (TGCS) Employees who have been trained in the use of scaffold and understand the necessary safety precautions.

Employee Name	Employee Signature	Date:	Trainer Initials

Articulating Lift
Make/Model Specific Familiarization

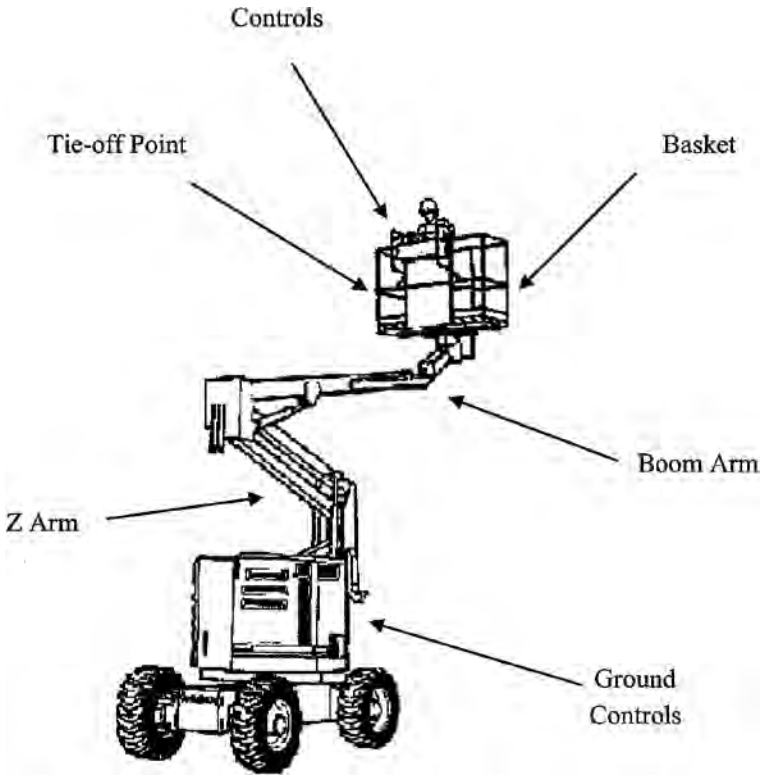
Employees Name: _____ **Date:** _____
(Please Print)
Employees Signature: _____ **Jobsite:** _____

Instructors Name: _____
(Please Print)
Instructors Signature: _____

Brand Name and Model: _____ **Rental Co:** _____

Evaluation/Familiarization:

- ☐ Manual located and reviewed
- ☐ Pre-operation inspection
- ☐ Function test = Use ground controls to run machine before you get into it. (OSHA Required)
- ☐ Inspect work area (holes, vaults, power lines, overhead hazards, firm level surfaces, etc).
- ☐ Harness and lanyard use
- ☐ Operation of controls
- ☐ Driving procedures
- ☐ Parking procedures
- ☐ Emergency lowering device
- ☐ Unique characteristics
  - ☐ Outriggers
  - ☐ 4 Wheel drive
  - ☐ Fuel type _____
  - ☐ Max slope _____
  - ☐ Max reach _____



Boom Lift
Make/Model Specific Familiarization

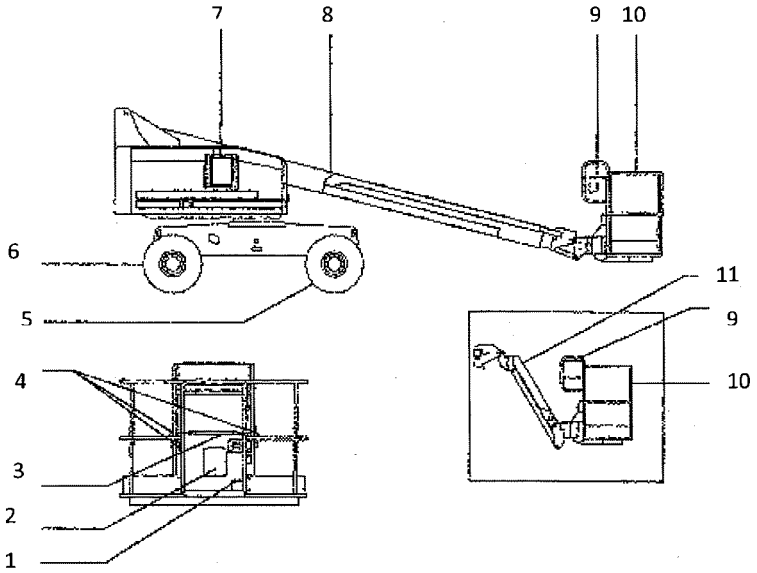
Employees Name: _____ **Date:** _____
(Please Print)
Employees Signature: _____ **Jobsite:** _____

Instructors Name: _____
(Please Print)
Instructors Signature: _____

Brand Name and Model: _____ **Rental Co:** _____

Evaluation/Familiarization:

- ☐ Manual located and reviewed
- ☐ Pre-operation inspection
- ☐ Function test = Use ground controls to run machine before you get into it. (OSHA Required)
- ☐ Inspect work area (holes, vaults, power lines, overhead hazards, firm level surfaces, etc).
- ☐ Harness and lanyard use
- ☐ Operation of controls
- ☐ Driving procedures
- ☐ Parking procedures
- ☐ Emergency lowering device
- ☐ Unique characteristics
  - ☐ Outriggers
  - ☐ 4 Wheel drive
  - ☐ Extendable arm
  - ☐ Fuel type _____
  - ☐ Max slope _____
  - ☐ Max reach _____



1. Foot switch
2. Manual storage container
3. Sliding mid-rail
4. Lanyard anchorage point
5. Non-steer tire
6. Steer tire
7. Ground controls
8. Boom
9. Platform controls
10. Platform
11. Jib boom

Scissor Lift
Make/Model Specific Familiarization

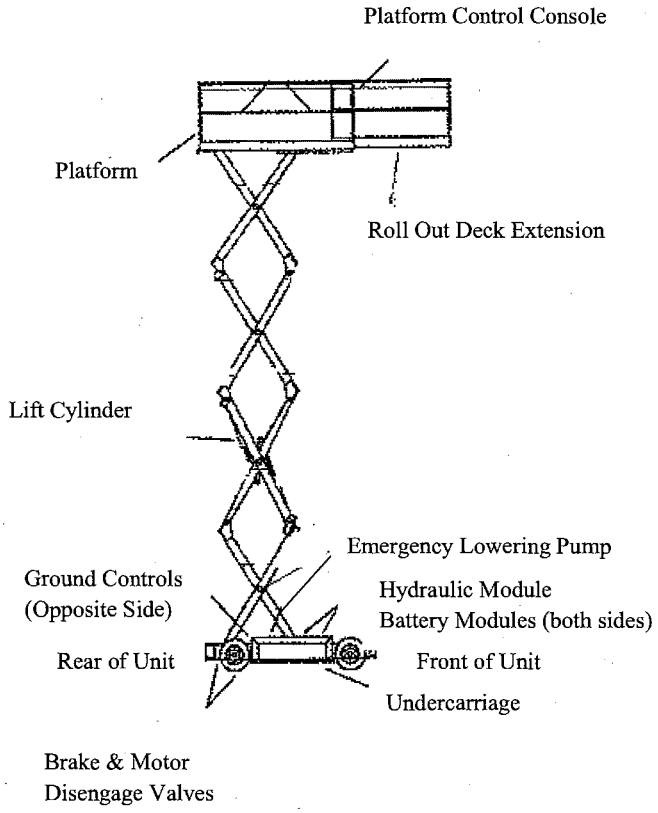
Employees Name: _____ **Date:** _____
(Please Print)
Employees Signature: _____ **Jobsite:** _____

Instructors Name: _____
(Please Print)
Instructors Signature: _____

Brand Name and Model: _____ **Rental Co:** _____

Evaluation/Familiarization:

- ☐ Manual located and reviewed
- ☐ Pre-operation inspection
- ☐ Function test = Use ground controls to run machine before you get into it. (OSHA Required)
- ☐ Inspect work area (holes, vaults, power lines, overhead hazards, firm level surfaces, etc).
- ☐ Harness and lanyard use
- ☐ Operation of controls
- ☐ Driving procedures
- ☐ Parking procedures
- ☐ Emergency lowering device
- ☐ Unique characteristics
  - ☐ Outriggers
  - ☐ 4 Wheel drive
  - ☐ Extension platform
  - ☐ Fuel type _____
  - ☐ Weight capacity _____
  - ☐ Max slope _____
  - ☐ Max height _____



Aerial Work Platform (Scissor Lift/Boom Lift) Daily Inspection Checklist

Project: _____ **Company:** _

Competent Person: _____ **Inspection Date:** _

Operator: _____ **Inspection Time:** _

Type of lift: _____ **Model or Equip #** _

Inspection Item & Description (Yes/No or NA)	**Y**	**N**	**NA**
Operator has received General Aerial Work Platform Training in the last 5 years?			
Operator has received Lift Specific Familiarization Training for this lift?			
Project Superintendent has proof of both trainings on file?			
Operating and emergency controls are in proper working condition?			
Emergency stop device working properly?			
Upper drive control interlock mechanism is functioning properly? (Foot pedal, spring lock, etc.)			
Emergency lowering function operates properly?			
Lower operating controls successfully override the upper controls?			
Both the upper and lower controls are protected from inadvertent operation?			
Control panel is clean and all buttons/switches are clearly visible and legible.			
All switch and mechanical guards are in place and in good condition?			
All safety indicator lights work properly?			
All drive control functions are labeled properly and accurately?			
Motion alarms are functional and audible in surround area?			
All safety decals are in place and legible?			
All guardrails are sound and in place, including the entry gate or chain?			
Work platform and extension slides are clean, dry and clear of material or debris?			
Work platform extension slides in and out freely?			
Work platform extension locking pins are in place?			
Lift inspected for defects such as cracked welds, fuel leaks, hydraulic leaks, damaged wiring, etc.?			
Tires and wheels are in good condition and inflated properly?			
Breaking devices are operating properly?			
The manufacturer owner's manual and ANSI manuals are stored on the lift?			
Workplace Assessment			
Floor or ground conditions adequate? (No holes, drop offs, uneven surfaces, trenches etc.)			
Housekeeping adequate? (No debris, material, cords, obstructions, etc.)			
Hazardous energy in the area? (Electrical cables or panels, chemical, steam or gas lines, etc.)			
Any overheads hazards? (Ceiling wires, electrical wires, trees, buildings, etc.)			

OSHA and OR-OSHA Jurisdictions

Each contractor working on a TGC Structural (TGCS) project will comply with OSHA, OR- OSHA, DOSH, Construction Industry Stairway and Ladder Regulations, in addition to the following policies/procedures.

General Requirements

- A stairway or ladder must be provided at all personnel points of access where there is a break in elevation of 19" or more and no ramp, runway, sloped embankment, or personnel hoist is provided
- All ramps used for access and all walking working platforms must be at least 18 inches wide
- A double-cleated ladder or two or more separate ladders must be used when ladders are the only means of egress from a working area with 25 or more employees
- When a building or structure has only one point of access between levels, that point of access shall be kept clear to permit free passage of employees
- When work must be performed or equipment must be used such that free passage at that point of access is restricted, a second point of access shall be provided and used
- When a building or structure has two or more points of access between levels, at least one point of access shall be kept clear to permit free passage of employees

Stairways

- When doors from an office or storage trailer open directly onto a stairway, a platform must be provided and the swing of the door must allow an additional 20" to prevent the door from striking an employee
- Employees are not allowed to use metal pan stairs unless they have been fitted with wooden filler blocks or poured with concrete
- Stairways with four or more risers or rising more than 30", whichever is less, must have a stair rail or handrail along each unprotected side or edge

Ladders

- When portable ladders are used for access to an upper landing surface, the ladder side rails shall extend at least 3 feet above the upper landing surface to which the ladder is used to gain access
- When such an extension is not possible because of the ladder's length, then the ladder shall be secured at its top to a rigid support that will not deflect, and a grasping device, such as a grabrail, shall be provided to assist employees in mounting and dismounting the ladder
- In no case shall the extension be such that ladder deflection under a load would, by itself, cause the ladder to slip off its support
- Ladders shall be maintained free of oil, grease, and other slipping hazards
- Ladders shall not be loaded beyond the maximum intended load for which they were built, nor beyond their manufacturer's rated capacity Do not use a ladder that is rated less than a Type 1
- There are three classifications assigned to commercially manufactured ladders and a label must be affixed on the ladder showing the classification. They are
    - **Type I: INDUSTRIAL**
        - Type I ladders are for heavy-duty use such as that which is experienced by utilities, industrial contractors and other heavy-duty applications. There are three sub-classifications to this group
        - Type 1AA Special Duty, professional use. Load capacity: 350lbs.
        - Type 1A Extra Heavy Duty, professional use. Load capacity: 300lbs.
        - Type 1 Heavy Duty, industrial use. Load capacity: 250lbs.
    - **Type II: COMMERCIAL** DO NOT USE
    - **Type III: HOUSEHOLD** DO NOT USE

- Ladders shall be used only for the purpose for which they were designed
- Ladders shall be used only on stable and level surfaces unless secured to prevent accidental displacement
- Ladders shall not be used on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental displacement
- Slip-resistant feet shall not be used as a substitute for care in placing, lashing, or holding a ladder that is used upon slippery surfaces including, but not limited to, flat metal or concrete surfaces that are constructed so they cannot be prevented from becoming slippery
- Ladders placed in any location where they can be displaced by workplace activities or traffic, such as in passageways, doorways, or driveways shall be secured to prevent accidental displacement, or a barricade shall be used to keep the activities or traffic away from the ladder
- The area around the top and bottom of ladders shall be kept clear
- The top of a non-self-supporting ladder shall be placed with the two rails supported equally unless it is equipped with a single support attachment
- Ladders shall not be moved, shifted, or extended while occupied
- Ladders shall have nonconductive side rails if they are used where the employee or the ladder could contact exposed energized electrical equipment
- Ladders shall be inspected by a competent person for visible defects on a periodic basis and after any occurrence that could affect their safe use
- Portable ladders with structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps, broken or split rails, corroded components, or other faulty or defective components, shall either be immediately marked in a manner that readily identifies them as defective, or be tagged with "Do Not Use" or similar language, and shall be withdrawn from service until repaired
- When ascending or descending a ladder, the user shall face the ladder
- When employees ascend or descend a ladder, they must maintain a three-point contact
- An employee shall not carry any object or load that could cause the employee to lose balance and fall
- Pull ropes should be placed at all access ladders so employees can safely lift tools or equipment to upper levels
- If your work position requires that your belt buckle be outside the side rails, you're in an unsafe position
- Stepladders must be opened fully and set level when in use
- The base of an extension and or straight ladder is to be placed 1 foot horizontal from the face of the surface for every 4 feet vertical

Job Made Ladder Requirements

- The width of a single cleat ladder must be at least 16 inches, but no more than 20 inches, measured inside to inside
- Wood cleats must be 1x4 inch site inspected material or nominal 2x4 inch stress-grade lumber
- Cleats must be parallel and level when the ladder is in position for use
- The cleats must be attached to the narrow face of the rail using three 3 inch long 10d common nails for 1x4 inch cleats or three 3 ¼ inch long 12d common nails for 2x4 inch cleats
- The nails must be staggered at least a ¼ inch to reduce splitting
- Filler blocks of the same thickness as the cleats must be inserted between cleats and must be butted tightly against the underside of each cleat
- The filler blocks must be 1x2 inch strips for 1x4 cleats and 2x2 inch strips for 2x4 cleats
- The 1x2 filler blocks must be attached using three 3-inch long 10d common nails
- The 2x2 filler blocks must be attached using three 3 ¼ long 12d common nails

Training

- The employer shall provide a training program for each employee using ladders and stairways, as necessary

- The program shall enable each employee to recognize hazards related to ladders and stairways, and shall train each employee in the procedures to be followed to minimize these hazards
- Site specific training shall be recorded and posted on Safety Bulletin Board
- The employer shall ensure that each employee has been trained by a competent person in the following areas, as applicable
    - The nature of fall hazards in the work area
    - The correct procedures for erecting, maintaining, and disassembling the fall protection systems to be used
    - The proper construction, use, placement, and care in handling of all stairways and ladders
    - The maximum intended load-carrying capacities of ladders used
    - Retraining shall be provided for each employee as necessary so that the employee maintains the understanding and knowledge acquired through compliance with this section

Inspections

- Ladders used to access one level to the next and maybe or will be used by other trades shall be inspected daily or pre-shift using the form (C16.1) at the end of this section
- Ladders used by TGCS employees only as part of their task
    - Will be inspected by the employee prior to starting the task
    - The inspection will be documented the their pre-task plans
- If for any reason, a ladder is found to be unsafe or not in compliance OSHA or the Manufactures standards, it must be taken out or service, tagged as unsafe for use and removed from the site as soon as possible

DOSH Jurisdiction

In addition to the above program, projects in the Washington DOSH Jurisdiction shall comply with the following.

General Requirements

- Stairways that will not be a permanent part of the structure on which construction work is being performed shall have landings of not less than thirty inches in the direction of travel and extend at least twenty-two inches in width at every twelve feet or less of vertical rise
- Stairs shall be installed between 30 deg. and 50 deg. from horizontal
- In all buildings or structures two or more stories or twenty-four feet or more in height or depth, suitable permanent or temporary stairways shall be installed
- Stairways, ramps or ladders shall be provided at all points where a break in elevation of eighteen inches or more occurs in a frequently traveled passageway, entry or exit
- A minimum of one stairway shall be provided for access and exit for buildings and structures to three stories or thirty-six feet; if more than three stories or thirty-six feet, two or more stairways shall be provided
- Wood frame buildings
    - The stairway to a second or higher floor shall be completed before studs are raised to support the next higher floor
    - Roof and attic work areas of all buildings shall be provided with a safe means of access and egress, such as stairways, ramps or ladders
    - Cleats shall not be nailed to studs to provide access to and egress from roof or other work areas
- Steel frame buildings
    - Stairways shall extend to the uppermost floor that has been planked or decked
    - Ladders may be used above that point
- Reinforced concrete or composite steel -- Concrete buildings

  - Stairways shall extend to the lowermost floor upon which a complete vertical shoring system is in place
  - A minimum of two ladders at different locations for each floor may be used above this floor but not to exceed three floors
- Riser height and tread depth shall be uniform within each flight of stairs, including any foundation structure used as one or more treads of the stairs
- Variations in riser height or tread depth shall not be over 1/4-inch (0.6 cm) in any stairway system
- Metal pan landings and metal pan treads, when used, shall be secured in place before filling with concrete or other material
- The stair must be equipped with a handrail on each side to assist the user in climbing or descending

Daily Ladder Safety Inspection Checklist

Project: _____ **Company:** _____

Competent Person: _____ **Inspection Date:** _____

Size of the ladder: _____ **Type of Ladder:** _____

Inspection Item & Description (Yes/No or NA)	Y	N	NA
Are the steps or rungs present and free of loose, bent, cracked or missing parts?			
Are the steps or rungs free of debris, mud or other materials?			
Are the rails free of cracks, bends, splits or frayed rail shields?			
Are all the labels present and legible?			
Is the pail shelf (If applicable) present and free of bent, missing or broken parts?			
Is the top free of cracks, loose or missing parts?			
Is the spreader present and tight?			
Is the ladder free of an excessive amount of rust, or corrosion?			
Is the ladder free of an excessive amount of concrete, tar or other material?			
Is all the bracing present and in good condition?			
Are all the shoes straight and in good condition?			
Are all the rivets present and tight?			
Are all the rivets or other parts original or approved by the manufacturer? (No bolts, wire etc.)			
Are the rung locks both present, in good condition and operating properly?			
Is the rope used for raising and lower the ladder present and in good condition?			
Are the rope pulleys in good working condition?			
If the answer to any of the questions above have been no has the ladder been taken out of service?			

Comments:

Below is a list of TGC Structural (TGCS) Employees who have been trained on the Ladder program, in the proper use of ladders and understand the necessary safety precautions.

Employee Name	Employee Signature	Date:	Trainer Initials

Each contractor working on a TGC Structural (TGCS) project will comply with OSHA, OR- OSHA, DOSH, Construction Industry Steel Erection Regulations, in addition to the following policies/procedures.

General Requirements

- General Site, Erection and Construction Sequence Requirements
  - The controlling contractor must provide the steel erector written notification
    - That the concrete has reached sufficient strength to support the anticipated loads during steel erection (75% of design strength)
    - Any repairs, replacements and modifications to the anchor bolts were done per with the approval of the project structural engineer of record
    - The controlling contractor must ensure that site access roads and storage areas are adequate for the safe delivery and movement of cranes, trucks and other equipment necessary to erect steel
  - A site-specific erection plan must be developed by a qualified person and submitted to TGCS Superintendent prior to the start of work
  - A site-specific fall prevention plan must be developed, submitted to the TGCS Superintendent and administered by a competent person prior to the start of work
- Hoisting and Rigging
  - Cranes being used in steel erection must be visually inspected by a competent person prior to each shift
  - A qualified rigger must inspect all rigging to be used prior to each shift
    - This person must be listed in the site-specific erection plan
  - Routes for suspended loads must be pre-planned to ensure that no employee is required to work directly below a load, unless they are engaged in the connection of the steel
  - Multiple lift rigging may be performed when the following conditions are met
    - A multiple lift rigging assembly is used
    - A maximum of five (5) members are hoisted per lift
    - Only beams and similar structures are lifted (decking does not meet this criteria)
    - All employees engaged in the activity have been trained in the specific procedures concerning multiple lift rigging
    - The rated capacity of the rigging and the crane is not exceeded
    - Rigging is attached at the center of gravity and the load is maintained in a reasonably level state
    - Material is rigged from the top down
    - Set from the bottom up
    - Rigged at least 7 feet apart
- Structural Steel Assembly
  - Structural stability must be maintained at all times during erection
  - There shall never be more than eight stories between erection floor and the upper most permanent floor
  - There shall never be more than four floors or 48', whichever is less, of unfinished bolting or welding above the foundation or permanently secured floor
  - An exception would be if the structural integrity were maintained as a result of the design
  - A fully planked or decked floor or nets must be maintained within two stories or 30', whichever is less, directly below where erection work is being performed
  - Shear connectors, also known as "Nelson studs", must not be attached to the top of the beam until after the decking has been installed
- Metal Decking
  - Bundle packaging and strapping must not be used for hoisting unless specifically designed for that purpose

  - If loose items such as dunnage, flashing, or other materials are placed on the top of metal decking bundles to be hoisted, such items must be secured to the bundles
  - Metal decking bundles must be landed on framing members so that enough support is provided to allow the bundles to be unbanded without dislodging the bundles from the supports
  - At the end of the shift or when environmental or job site conditions require, metal decking must be secured against displacement
  - Metal decking at roof and floor holes and openings must be installed as follow
    - Openings must have structural members turned down to allow continuous deck installation except where not allowed by structural design constraints or constructability
    - Roof and floor holes and openings must be decked over
    - Where large size, configuration or other structural design does not allow openings to be decked over guardrails or hole covers shall be provided
    - Holes and openings cut prior to being permanently filled with the equipment or structure needed or intended to fulfill its specific use must be immediately covered
  - Smoke dome or skylight fixtures that have been installed are not considered covers for the purpose of this section unless they meet the strength requirements of hole covers
  - Wire mesh, exterior plywood, or equivalent, must be installed around columns where planks or metal decking do not fit tightly
  - The materials used must be of sufficient strength to provide fall protection for personnel and prevent objects from falling through
  - Metal decking must be laid tightly and immediately secured upon placement to prevent accidental movement or displacement
  - During initial placement, metal decking panels must be placed to ensure full support by structural members
- Beams and Column Anchorage
  - All columns must be anchored by a minimum of 4 anchor bolts
  - Columns must be set on level finished floors, pregrouted leveling plates, leveling nuts, or shim packs which are adequate to transfer the construction loads
  - All columns must be evaluated by a competent person to determine whether guying or bracing is necessary
  - Anchor bolts must not be repaired, replaced or field-modified without the approval of the structural engineer of record
  - Prior to the erection of a column, the TGCS must provide written notification to the steel erector if there has been any repair, replacement or modification of the anchor bolts of that column.
  - During the placing of structural beams, the load must not be released until a minimum of two bolts, per connection, are secured in place
  - Each bolt must be in a different third of the beam
- Personal Fall and Falling Object Prevention
  - All material, equipment and tools must be secured against accidental displacement while aloft
  - TGCS will bar other construction processes below steel erection unless overhead protection for the employees below is provided
  - Each employee engaged in a steel erection activity who is on a walking or working surface, mezzanine or an established floor with an unprotected side or edge 6’ or more above a lower level, must be protected from fall hazards by safety net systems, guardrail systems or personal fall arrest systems
  - TGCS has a 100% Fall Protection ZERO TOLERANCE POLICY. AT NO TIME SHALL ANYONE BE AT A HEIGHT > 10’ WITHOUT BEING PROTECTED
    - This includes connectors and any employee installing metal decking
- Training
  - All training must be provided by a qualified person, knowledgeable in the recognition and avoidance of hazards associated with steel erection

Each contractor working on a TGC Structural (TGCS) project will comply with OSHA, OR- OSHA, DOSH, Construction Industry Welding, Cutting, and Brazing Regulations, in addition to the following policies/procedures.

General Requirements

- Supervisors are responsible to see that only trained employees are authorized to weld
- Fire watch personnel will be trained in their duties by the supervisors
- Employees who are trained and authorized to perform welding & cutting operations must follow all safety procedures as outlined in this chapter, by OSHA rules and manufacturer's recommendations
- Employees are required to inspect their equipment daily, prior to operation, to ensure that all safeguards are on the equipment
- Any defect or safety hazards shall be reported and the equipment taken out of service until repairs can be made by qualified personnel
- All accidents will be reported immediately to the supervisor

Welding Hazards

Safety in the many processes of welding and cutting requires certain precautions and standardized operating procedures. Welding is associated with four principle hazards. It is the responsibility of the employee's supervisor to ensure that all welders and fire watch personnel understand these four hazards. They are:

- Electric Shock and Burn Hazards
- Fire and Compressed Gas Hazards
- Radiant Energy Hazards
- Inhalation Exposure Hazards to Gases, Fumes and Mists

Welding Safeguards – Safe Work Procedures

- **Fire Protection Requirements:**
    - All work activity that uses flammable liquids, generates sparks and/or open flames that is performed in an area that could ignite combustible liquids, material or structure, must have a **Hot Work Permit** (C11.1) and a task specific fire extinguisher present at all times
    - Welding operations need to be performed away from flammable materials or special precautions are necessary
    - Fire protection equipment should be kept immediately at hand and ready for use
    - In critical areas, the fire protection equipment should be staffed while welding operations are being conducted.
    - When the welding, cutting, or heating operations is such that normal fire prevention precautions are not sufficient, additional personnel shall be assigned to guard against fire while the actual welding, cutting, or heating operation is being performed, and for one half hour after completion of the work to ensure that no possibility of fire exists
    - When welding, cutting, or heating is performed on walls, floors, and ceilings, since direct penetration of sparks or heat transfer may introduce fire hazard to an adjacent area, the same precautions shall be taken on the opposite side as are taken on the side on which the welding is being performed
    - For the elimination of possible fire in enclosed spaces as a result of gas escaping through leaking or improperly closed torch valves, the gas supply to the torch shall be positively shut off at some point outside the enclosed space whenever the torch is not to be used or whenever the torch is left unattended for a substantial period of time, such as during the lunch period

- **Personal Protective Equipment**
  - The face, body and hands should be covered to prevent burns from splatter, slag, sparks, or hot metal
  - Flameproof, heat-insulating gloves should be worn during welding operations
  - Other personnel in the vicinity of welding operations should be protected from reflections by suitable shields and barriers
  - Respiratory equipment may be necessary if ventilation is not sufficient

Oxygen/Gas Cutting/Welding Safeguards

- **Definitions**
  - Crack (Cracking) – Opening a cylinder valve slightly and immediately closing it prior to attaching a pressure reducing regulator.
    - This is an approved process that applies only to oxygen cylinders
  - Drop Test – A method using compressed gas cylinder (container) pressure to test connected regulators, hoses, torch and connections for leaks
  - Fuel Gas – A flammable product or mixture of products used in welding, cutting and heating processes.
    - Commonly used fuel gases are available in compressed gases, liquefied and liquefied mixtures, acetylene dissolved, and gasoline
  - Leak test – The application of a liquid solution, or the use of other methods, to verify that oxygen and fuel gas cylinders and apparatus do not leak.
    - Solutions must be compatible with the gas being used
  - Manifold – An apparatus designed to connect two or more cylinders for use.
    - In construction this may mean that two cylinders or more are connected by pigtails to form a manifold
  - Moving cylinders – The movement of a cylinder(s) from one location to another at the worksite or place of business
  - Periodic Inspection – An inspection that is made at least once per quarter
  - Portable Cylinder Banks – Multiple cylinders manifolded together on a portable frame
  - Special truck – A vehicle or cart that is designed for the specific purpose of moving compressed, dissolved and liquefied gas cylinders in a stable manner
  - Stored – Cylinders without attached regulators, cylinders not secured to a workstation, or cylinders that have not been used for 24 hours or more will be considered stored
    - This does not include cylinders secured on a cart
    - No more than one additional set of cylinders may be secured to a workstation.
    - Cylinders, with or without regulators, kept in or on vehicles due to their frequency of use will not be considered as stored when a leak test is performed at the end of the day.
    - When cylinders are used during multiple shifts, they must be leak tested at the end of each shift.
  - Transporting cylinders – Any cylinder movement by a vehicle to a worksite or place of business
    - A cylinder(s) loaded into a vehicle for movement to a worksite or place of business is not in storage
    - Requirements for the separation of oxidizers and fuel gases do not apply when cylinders are being transported to a work site or place of business
- **General Requirements**
  - You must guard against mixtures of fuel gases and air or oxygen that may be explosive
  - Use approved apparatus such as torches, regulators, or pressure reducing valves, hoses and connections, protective equipment, and manifolds
  - Install and use reverse flow check valves and flashback arrestors according to torch manufacturers' recommendations

        - Unless they are not required by the manufacturer
        - It is assumed that the manufacturers requires the use of these devices unless it is proven otherwise
    - Use compressed gas cylinders whose contents are legibly marked with:
        - The chemical or trade name of the gas in conformance with Compressed Gas Association, and
        - Stenciling, stamping, or labeling that is not readily removable
    - Protect against oil and grease hazards
        - Keep cylinders, cylinder valves, couplings, regulators, hose, and apparatus free from oily or greasy substances
        - Keep oxygen cylinders away from contacting oil and grease
        - Make readily available the rules and instructions covering the operation and maintenance of oxygen or fuel-gas supply equipment
    - You must not:
        - Remove any product or shipping hazard labels
        - Deface any product or shipping hazard labels
        - Use liquid acetylene
        - Generate acetylene at a pressure in excess of 15 psig (30 psia)
        - Pipe or use acetylene at a pressure in excess of 15 psig unless it is in an approved manifold
        - Use any device or attachment facilitating or permitting mixtures of air or oxygen with flammable gases prior to consumption, except at the burner or in a standard torch, unless approved for the purpose
        - Attempt to mix gases in a cylinder
        - Use a cylinder's contents for purposes other than those intended by the supplier
        - Use a damaged cylinder
        - Repair or alter cylinders or valves
        - Tamper with the numbers and markings stamped into cylinders
        - Handle oxygen cylinders, cylinder caps and valves, couplings, regulators, hoses, and apparatus with oily hands or gloves
        - Permit a jet of oxygen to:
            - Strike an oily surface
            - Strike greasy clothes
            - Enter a fuel oil or other storage tank
        - Blow off clothing with oxygen
        - Use oxygen in pneumatic tools, in oil preheating burners, to start internal-combustion engines, to blow out pipelines, to create pressure, or for ventilation
- **Transporting, moving, and sorting compressed gas cylinders**
    - When transporting cylinders in vehicles:
        - Secure cylinders from moving
        - Valve protection caps shall be in place and secured
        - Keep Acetylene gas cylinders with valve end up
        - Keep liquid cylinder valves vertical
    - When transporting cylinders in enclosed vehicle(s) you must:
        - Ensure that cylinders are leak checked prior to each placement into the vehicle
        - Cylinders left in vehicles overnight must be leak checked at the end of the day and again prior to transporting
        - Cap cylinders
        - Secure cylinders from movement
        - Isolate fuel gas cylinders from sources of ignition

        - Maintain vehicle temperatures below 125 degrees
        - Remove cylinders from the "inside vehicle compartment" to the outside of the vehicle prior to use
        - Ensure the interior of any cylinder compartment containing oxidizers does not contain petroleum products or materials that have contacted petroleum products
        - When transporting cylinders in vehicles you must not put them in the trunks of passenger vehicles
- **Storage of Oxygen and Fuel Gas Cylinders**
    - Store oxygen and fuel gas cylinders in locations:
        - Specifically assigned
        - Well ventilated
        - That avoids prolonged exposure to damp environments
        - Away from heat sources
        - Posted with signs prohibiting smoking and open flame within 20 feet
        - Where the temperature does not exceed 125°F (52°C)
        - Where sparks, hot slag, or flame will not reach them
        - Where they will not contact electrical welding equipment or electrical circuits
        - Where they are protected from corrosion
        - Where they cannot be knocked over
        - Where they cannot be damaged by passing or falling objects
        - Where they will not be struck by heavy objects
        - Away from inside or outside exit routes or other areas normally used or intended for safe travel of personnel
        - Where they will not be subject to unventilated enclosed spaces
        - That are not identified as confined spaces
        - With prominent signs posted identifying the names of the gasses stored
    - Store cylinders in the following manner:
        - With valve caps in place
        - Valve end up and secured from movement
        - Liquefied gas cylinders and acetylene cylinders with valve end up
            - Liquefied petroleum gas cylinders used on forklifts may be stored either horizontally or vertically
        - With all individual oxygen and flammable gas cylinder valves on portable cylinder banks closed
    - Separate oxygen cylinders from fuel-gas cylinders or combustible materials (especially oil or grease) and any other substance likely to cause or accelerate fire by:
        - A minimum distance of 20 feet, or
        - A noncombustible barrier that:
            - Vertically extends 18 inches above the tallest cylinder(s) and is at least 5 feet high
            - Laterally extends 18 inches beyond the sides of the cylinders
        - Has a fire-resistance rating of at least one-half hour
    - Separate oxygen and fuel gas cylinders secured on a cart from assigned cylinder storage areas by a minimum of 20 feet or a non combustible barrier
        - Single cylinders of oxygen and fuel gas can be secured on a cart or used adjacent to each other without being separated by a partition
    - Limit cylinders, except those in actual use or attached ready for use, stored inside buildings to a total gas capacity of 2,000 cubic feet or 300 pounds of liquefied petroleum gas
- **Handling of Oxygen and Fuel Gas Cylinders**
    - When handling or moving cylinders you must:

- Provide adequate access for cylinder handling
- Remove regulators and ensure any required valve protection is in place before moving unsecured cylinders
- Leave the valve protection cap and valve seal outlet in place until the cylinder has been secured in place and is ready to be connected to a regulator
- Use warm, not boiling, water to thaw frozen cylinders loose from the ground or if otherwise fixed

- When moving cylinders by a crane or derrick you must:
  - Use a cradle, boat, or suitable platform that secures cylinders
  - Install valve-protection caps on cylinders
  - Not use slings or electric magnets for this purpose
- Before moving a portable bank or cylinder cradles you must:
  - Close all individual oxygen and flammable gas cylinder valves on portable cylinder banks when in storage
- When moving a portable bank or cylinder cradles with a forklift you must secure them to the forklift
- When moving a portable bank or cylinder cradles with a crane you must use the lifting hook attached to the cradles or other appropriate moving equipment
- Before moving cylinders to storage you must:
  - Close the cylinder valve
  - Replace and secure any valve outlet seals
  - Properly install the cylinder cap
- When handling or moving cylinders you must not:
  - Repair or alter cylinders or valves
  - Place bars under valves or valve protection caps to pry cylinders loose when frozen to the ground or otherwise fixed
  - Use valve protection caps for lifting or lowering cylinders manually or with a crane from one position or location to another
  - Drag or slide cylinders
  - Lift liquid cylinders by the cylinder grab ring
  - Drop cylinders or permit them to strike each other violently
  - Subject any cylinder to mechanical shocks that may damage the valve
  - Use cylinders as rollers for moving material or other equipment
  - Permit oil, grease or other combustible substances to contact cylinders, valves, or other apparatus
  - Attempt to catch a falling cylinder
  - Place cylinders where they can become part of an electrical circuit
- When connecting cylinders for use you must:
  - Use a pressure-reducing regulator or separate control valve to discharge gas from a cylinder
  - Use regulators approved for the specific gas
  - Loosen the valve outlet seal slowly when preparing to connect a cylinder
  - Back out the regulator adjusting screws before opening cylinder valves
  - Open oxygen cylinder valves slowly and slightly (called cracking) for an instant and then close before attaching a regulator
  - Stand with the cylinder valve between you and the valve outlet connection so the outlet connection is facing away from your body when cracking an oxygen cylinder
    - Cracking is an approved process that applies only to oxygen cylinders
  - Open acetylene cylinder valves no more than one and one half turns
    - It is preferable to open the acetylene valve no more than three-fourths of a turn

- Return cylinders with contaminated valves (mud, oil, grease, and similar material) to the supplier
- Use acetylene tank keys or wrenches designed to open acetylene stem type valves
- Notify the supplier if cylinder valves cannot be opened by hand
- Stand with the cylinder valve between you and the regulator so your body, the cylinder valve, and regulator form a straight line when opening the cylinder valve
- Ensure that cylinder valves, pressure-reducing regulators, hoses, torches and all connections do not leak by performing a drop test
    - Drop test
        - Ensure that both the oxygen and fuel control valves on the torch handle are closed
        - With the oxygen cylinder valve open, adjust the oxygen regulator to deliver a minimum of 20 PSIG (140kPa)
        - With the fuel cylinder valve open, adjust the fuel regulator to deliver a minimum of10 PSIG (70kPa)
        - Close both the oxygen and fuel cylinder valves
        - Turn the adjusting screws counterclockwise to relieve regulator pressure
        - Observe the gauges on both regulators for a minimum of five minutes
            - If the gauge readings do not change, then the system is leak tight. If there is a leak, use an approved leak detection method to locate it
    - If the pressure drops during the drop test, perform a leak test to identify all leaks
    - Use industry approved oil free leak detection solution
    - Perform a leak test on cylinder pressure relief and safety devices, valves and regulator connections after the cylinder valve is open and connected to the pressure reducing regulator
    - Remove from service any cylinder that leaks at the valve, safety device or fittings that cannot be stopped by closing the valve
    - Isolate the cylinder away from ignition sources
    - Remove leaking cylinders to a safe outside location whenever possible
    - A warning should be placed near cylinders with leaking fuse plugs or other leaking safety devices not to approach them with a lighted cigarette or other source of ignition
    - Promptly notify the supplier of any leaking cylinder or trouble with any cylinder valve and follow their instructions
    - Tag cylinders having leaking fuse plugs or other leaking safety devices
- Keep the cylinder key used for opening stem type cylinder valves on the valve spindle
- Allow each gas to flow through its respective hose for a few seconds to purge the hose of any mixture of gases:
    - After connecting welding, cutting or heating apparatus to oxygen and fuel-gas cylinders
    - When starting to reuse the apparatus after an interval of a half hour or more

- When connecting cylinders you must not:
    - Open cylinder valves (other than cracking oxygen) until a regulator has been attached
    - Stand or have any body part in front or behind the pressure reducing regulator when opening cylinder valves
    - Use a hammer or wrench to open hand wheel cylinder valves
- When removing regulators from cylinders you must:
    - Ensure that oxygen and fuel gas cylinder valves are closed

- Visually check the low pressure delivery gauges and high pressure supply gauge to ensure there is no pressure remaining in the system
- Use the appropriate wrench to disconnect the regulator
- Place disconnected regulators, hoses, and torches where they will not come into contact with dust and oily or greasy substances

- **Use of Oxygen and Fuel Gas Cylinders**
  - When using cylinders you must:
    - Secure from movement with valve end up
    - Perform a drop test at the beginning of each shift to verify no leaks exist
    - Close cylinder or manifold valves:
      - Before moving cylinders
      - At the end of the shift or when work is finished
      - When cylinders are empty
    - Place cylinders far enough away from the actual welding or cutting operation to:
      - Ensure sparks, hot slag, or flame will not reach them, or
      - Protect them with fire resistant shields
    - Keep cylinders away from radiators, piping systems, layout tables, etc., that may be used for grounding electric circuits such as for arc welding machines
    - Keep keys, handles or nonadjustable wrenches on valve stems of cylinders not having fixed hand wheel while these cylinders are in service
    - Keep one key or handle on valve stems for each in service manifold in multiple cylinder installations
    - Allow each gas to flow through its respective hose for a few seconds to purge the hose of any mixture of gases before using a torch assembly that has been shutdown for an interval of one half hour or more
    - Follow the apparatus manufacturer's operating sequence when lighting, adjusting, and extinguishing torch flames
    - Close the torch handle valves on oxygen and/or fuel gas when the welding and cutting equipment is unattended for only a few minutes
    - Completely shut down a torch system in the following order:
      - Close and drain the oxygen system before the closing and draining of the fuel gas system
      - Open the torch valves momentarily after closing the cylinder valves to release all gas pressure from the hoses and regulators; then close the torch valves
      - Turn the regulator pressure adjusting screws counter clockwise to release all spring pressure
      - Visually check the low pressure delivery gauge and high pressure supply gauge to ensure there is no pressure remaining in the system
  - When using cylinders you must not:
    - Place a cylinder where it might become part of an electric circuit
    - Tap an electrode against a cylinder to strike an arc
    - Use a cylinder as a roller or support
    - Attempt to mix gases in a cylinder unless you are the gas supplier
    - Refill a cylinder unless you are the owner of the cylinder or a person authorized by the owner
    - Use a cylinder's contents for purposes other than those intended by the supplier
    - Tamper with safety devices on cylinders or valves
    - Drop or handle cylinders roughly
    - Put down a lighted torch unless the torch or torch assembly is placed in a holder and secured from unintended movement

- Use the regulator adjusting screw as a shut-off mechanism
- Place anything on top of any cylinder when in use which may damage the safety device or interfere with the quick closing of the valve
- Take cylinders containing oxygen or acetylene or other fuel gas into confined spaces

- **Pressure Reducing Regulators**
  - When using pressure reducing regulators you must:
    - Use them with cylinder and piping outlets to ensure suitable working pressure for fuel gas and oxygen-fuel gas applications
    - Use them for the gas and pressures for which they are intended
    - Ensure that regulator inlet connections are marked with an identifying Compressed Gas Association (CGA) number
    - Ensure that regulators or parts of regulators, including gauges, are repaired only by skilled mechanics who have been properly instructed
    - Use oxygen regulators that are marked with "USE NO OIL."
    - Use acetylene regulator with a delivery pressure gauge that graphically indicates the maximum 15 psig working pressure
    - Inspect regulator union nuts and connections to detect faulty seats before the regulators are attached to the cylinder valves
    - Fully turn the regulator pressure-adjusting screw counter clockwise before slowly opening the cylinder valve
    - Keep pressure-reducing regulators in good repair
    - Replace cracked, broken or otherwise defective parts (including gauge glasses)
  - When using pressure reducing regulators you must not:
    - Use the regulator adjusting screw as a "shut-off" mechanism
    - Use oxygen and/or fuel gases from cylinders, piping, or manifolds through torches or other devices equipped with shutoff valves without using a pressure reducing regulator
- **Hose and Hose Connections**
  - When using fuel gas and oxygen hoses you must:
    - Use hoses that comply with the Compressed Gas Association (CGA)
    - Use fuel gas and oxygen hoses that are easily distinguishable from each other
    - Use oil free air or an oil free inert gas to test hoses
    - Keep hoses and couplings (connectors) free from oily or greasy substances
    - Visually inspect each hose for leaks, burns, worn places, bulges, cracks, crimps, multiple splices, cuts, oil and grease, damaged or worn fittings, and other defects rendering it unfit for service:
      - At the beginning of each task, the portion of hose intended for use
      - At the end of each working shift, the portion of hose used before storing it on a cart or hose reel
    - Perform inspections on hoses and hose connections following any failed drop test to determine the cause of the failure
    - Test hose to twice the normal pressure it will be subjected to but in no case less than 300 psi when it:
      - Has been subject to flashback
      - Shows evidence of severe wear or damage
    - Repair or replace hoses that have defects rendering them unfit for service
    - Protect hoses from damage by physical hazards, hot objects, or kinking
    - Keep hoses, cables, and other equipment clear of passageways, ladders and stairs
    - Store gas hoses in ventilated boxes
  - When using fuel gas and oxygen hoses you must not:
    - Route in such a manner that severely bends the hose at the hose coupling (connector)

        - Pull or drag welding equipment with the hose assembly
        - Drag or rest hoses on materials that are not fully cooled
        - Drag hoses across potential puncture or abrading points
        - Handle oxygen hoses with oily hands or oily glove
        - Tape together more than 4 inches out of 12 inches of parallel sections of oxygen and fuel gas hose
        - Use a single hose having more than one gas passage
        - Repair damaged hoses with tape
        - Use a defective hose
    - Hose connections must:
        - Comply with Compressed Gas Association (CGA)
        - Use oxygen and fuel gas connection fittings that are different in size and prevent the intermixing of connections
        - Be marked in a manner to identify the oxygen and fuel gas hose
        - Use hose couplings that cannot be unlocked or disconnected by means of a straight pull without rotary motion
    - When using hose connections you must not use adaptors that permit the interchange of manifold hose connections
- **Torches used with Oxygen and Fuel Gas**
    - When using oxygen and fuel gas torches you must:
        - Follow the manufacturer's recommendation for the use of torch handles with internal check valves and flashback arrestors
        - Keep torches free from oily or greasy substances
        - Clean clogged torch tip openings with suitable:
            - Cleaning wires
            - Drills
            - Devices designed for such purposes
        - Inspect torches following any failed drop test to determine the cause of the failure prior to using. Check:
            - Shut-off valves
            - Hose couplings
            - Tip connections
        - Only light torches with friction lighters, stationary pilot flames or other approved devices.
    - When using oxygen and fuel gas torches you must not:
        - Use defective torches
        - Light a torch:
            - With matches
            - From hot work
            - With other hand held open flame
- **Training and Evaluation**
    - You must provide training by a competent person that covers:
        - Procedures, practices and requirements for representative tasks employees are expected to perform
        - Instructions for safe use, operation and maintenance of tools, equipment and machinery
        - Manufacturer's operating and maintenance instructions, warnings and precautions
        - Work performance expectations in a language or manner that employees are able to understand
        - Hazards associated with expected tasks
        - Ways to prevent or control identified hazards

        - A new employee does not need to be retrained if you are able to determine through discussion and observations that they received adequate training prior to employment with you
        - Retraining is required if the employee fails to demonstrate the knowledge and experience to safely perform the expected tasks
    - You must evaluate employee's ability to adequately perform the expected tasks prior to allowing them to work independently
- **Shielding**
    - Whenever practicable, all arc welding and cutting operations shall be shielded by noncombustible or flameproof screens which will protect employees and other persons working in the vicinity from the direct rays of the arc
- **Ventilation and protection in welding, cutting, and heating**
    - General mechanical ventilation shall be of sufficient capacity and so arranged as to produce the number of air changes necessary to maintain welding fumes and smoke within safe limits
- **Welding, cutting, or heating of metals of toxic significance**
    - Zinc-bearing base or filler metals or metals coated with zinc-bearing material
    - Lead base metals (See Lead Compliance Plan)
    - Cadmium-bearing filler materials
    - Chromium-bearing metals or metals coated with chromium-bearing materials
- **Welding, cutting, and heating in confined spaces.**
    - Procedures need to meet confined space entry requirements

Back strains and other related injuries account for more than half of all work related incidents. Unfortunately, many workers only learn how to lift safely after already hurting their back. Employees at TGC Structural (TGCS) perform physical activities while at work. Some of these activities can be physically demanding on an employee so it is important for employees to maintain physical health and condition in order to provide their best work effort.

Over time, the exercises have been shown to raise workers' energy levels and to improve flexibility, strength and range of motion-all of which enhances a person's capacity to do physical work without injury. Stretch and flex also helps employees prepare themselves mentally for the tasks they are about to perform-another important factor in reducing the potential for a work-related injury.

It is for this reason TGCS has implemented the following program.

Stretch and Flex General Requirements

- At least every morning at the start of shift every TGCS employee shall perform stretch and flex exercises for a 5 to 10 minute period of time
- The stretch and flex exercises shall be perform in a group setting
- The stretch and flex exercises shall be led by the Foreman or Superintendent
- Foreman and Superintendent shall follow the prescribed exercises

Safe Lifting General Requirements

- Any material weighting more than 50 lbs. shall be lifted and/or carried by two people or the use of material handling equipment
- Any material that's shape or size would require an awkward lifting or carrying position shall be lifted and/or carried by two people or the use of material handling equipment regardless of the weight

Basic rules for safe lifting:

- Plan the lift
- Move close to the load
- Keep your back straight
- Bend your knees and lift with your legs
- Do not lift and twist in the same motion
- If the load is too heavy, get help

Each contractor working on a TGC Structural (TGCS) project must comply with TGCS's Handheld Unit Use Program. Handheld Units are handheld devices, including cell phones, GPS units, Blackberries, pagers, Palm Pilots, PDA's, MP3 players (or equivalent), faxes and other communication devices.

Driver inattention is a factor in the majority of motor vehicle accidents. Researchers have found the risk of having a collision while using a mobile handheld unit or similar device is the same as driving while intoxicated.

We are not only concerned about your welfare as an employee, but also the welfare of subcontractors and others who could be put in harm's way by inattentive driving.

For these reasons, TGCS employees, subcontractors and lower-tier subs are prohibited from using mobile handheld units without a hands-free device while driving on company time, company property including project sites or while conducting company business. This Policy includes all calls made from the following types of vehicles on or off all jobsites.

General Requirements

- Vehicles provided by TGCS or subcontractors and lower-tier subcontractors including
  - Leased vehicles with or without a company decal
  - Golf carts and similar vehicles used for jobsite transportation
  - Forklifts and other material handling type vehicles
  - Scissor Lifts
  - Cranes
  - Delivery vehicles
  - All other types of vehicles used on the jobsites

Procedures/Expectations:

A driver's first responsibility while on company time or while conducting company business, on or off a jobsite, is the safe operation of the vehicle. The following guidelines should be followed accordingly.

Hands-Free Devices

Hands-free operation does not guarantee 100% safety but will provide drivers with less distraction.

- Always use the appropriate hands-free device for your Mobile Handheld Unit
- Use the Mobile Handheld Unit's speed dial and voice activated functions;
- Inform regular callers of the best time to reach you based upon your driving schedule
- If a hands-free device is not available
  - Do not use the Mobile Handheld Unit; send calls to voicemail, forward them to another number or turn off the unit
  - Pull off the road to a safe location to make or receive a call or ask a passenger to make or take the call
  - Be sure to input your destination information to a global positioning system (GPS) before you begin driving
- Never take notes, type, text, refer to maps or any materials while operating a vehicle

NOTE: Any employee or subcontractor of any tier charged with traffic infractions as a result of the use of a Mobile Handheld Unit will be personally responsible for paying fines and any other associated costs.

Superintendents Safety Checklist

This checklist should be reviewed prior to start of the project and regularly thereafter

Project: _____

Superintendent: _____

Pre-Job (Check off as completed or if not applicable)	Complete
Subcontractors Safety Record and EMR (Contact safety department for assistance)	☐
Verify if a Phase I or II (Soil contamination) Assessment was completed on the property.	☐
If yes you must have a copy onsite at all times.	☐
Call safety department for assistance understanding the documents.	☐
If project involves remodeling of an existing building, has a hazardous material survey been completed?	☐
If yes you must have a copy onsite.	☐
Does the survey address other hazardous materials other than Asbestos?	☐
Call safety department for assistance understanding the documents.	☐
Conduct and document (Video or photos) preconstruction site survey of the surrounding area.	☐
Develop site specific safety plan (Contact safety department for assistance)	☐
Develop site specific orientations (A14.2)	☐
Develop site specific crisis management plan (Contact safety department for assistance)	☐
Develop site specific fire prevention program (C11.2)	☐
Develop site specific emergency response posting form (A15.1)	☐
Develop site specific evacuation plan and determine the gather point.	☐
Verify bearing capacity of the soil on the project.	☐
Determine the concrete pump outrigger pad size required for the project. (C1.1)	☐

Start of Project and Ongoing (Check off as completed or if not applicable)	Complete
Conduct an initial site safety inspection and then one each week thereafter. (D2)	☐
Have every non-company or non-owner visitor to the site sign the visitor hold harmless agreement (D3)	☐
Verify all documents listed in A5 (Required jobsite postings) are posted.	☐
If TGCS employees are working from heights develop site specific fall protection plan (C10.1)	☐
Verify employees general fall protection training (Office)	☐
Provide site specific fall protection training to company employees (C10.1)	☐
Verify employees are performing and documenting daily inspection of the fall protection equipment (C10.3)	☐
Collect SDS for all company chemicals used on the project	☐
Develop company chemical list (A7.1)	☐
Provide site specific HAZ-COM training to company employees (A7.2)	☐
Develop site specific safety committee	☐
Conduct monthly meeting and develop meeting minutes (A18.1)	☐
Conduct and document quarterly safety committee safety inspections (A18.2)	☐
Conduct and document weekly safety meetings (Toolbox or all hands) (A6.1)	☐
Verify general training and conduct as necessary the following site specific and/or familiarization training (A10)	☐
Forklift (C13.2 and 13.3)	☐
Powder actuated tools	☐
Excavations	☐
Ladders (C16.2)	☐
Aerial work platforms (C15.3, C15.4 and C15.5)	☐
Scaffold user (C15.2)	☐
Signalman	☐
Rigging	☐

- Company employees are conducting and documenting pre-task planning ☐
- Company employees are conducting flex and stretch prior to working ☐
- Verify first aid kit and blood borne pathogen spill kits are present and fully stocked ☐
- Verify all common use ladders are inspected daily and the inspection documented. (C16.1) ☐
- Verify forklifts are inspected daily and the inspection documented. (C13.1) ☐
- Verify common use scaffold and/or scaffold stair towers are inspected daily and inspection documented (C15.1) ☐
- Determine if there will be confined spaces or permit required confined spaces on the project. ☐
- Determine crane activities for the project (C5.1) ☐
  - Conduct the work zone assessment (C5.2) ☐
  - Lift plan developed for all lifts. (C5.4) ☐
  - Conduct pre-lift meeting (C5.5) ☐
  - Verify that all crane procedures are followed. (C5.1 to C5.8) ☐

As Subcontractors Come Onboard (Check off as completed or if not applicable) **Complete**

- Subcontractor must submit to you the following items: (Must keep on file at the jobsite) ☐
  - A copy of their site specific safety plan or a copy of their overall safety plan. ☐
  - A copy of their trained personnel and competent person list (D4) ☐
  - A copy of their written fall protection plan if the employees are working from heights. ☐
  - A copy of the masonry wall bracing plan if walls are over 8 ft. ☐
  - A copy of the MSDS for their chemicals ☐
  - A copy of the list of chemicals they have onsite (A7.1 or other) ☐
- Subcontractor must submit to you the following qualifications/certifications: (Must keep on file at the jobsite) ☐
  - A copy of proof of training for all first aid/CPR personnel (Can be card, a letter from their company or D4) ☐
  - A copy of proof of training for all forklift operators (Can be card, a letter from their company or D4) ☐
  - A copy of proof of training for aerial work platforms (Can be card, a letter from their company or D4) ☐
  - A copy of proof of training for confined spaces. (Can be card, a letter from their company or D4) ☐
  - A copy of proof of training for fall protection (Can be card, a letter from their company or D4) ☐
  - A copy of proof of training for qualified rigger (Can be card, a letter from their company or D4) ☐
  - A copy of proof of training for qualified signalman (Can be card, a letter from their company or D4) ☐
  - A copy of proof of training for scaffold erections (Can be card, a letter from their company or D4) ☐
  - A copy of proof of training for scaffold inspection (Can be card, a letter from their company or D4) ☐
  - A copy of proof of training for scaffolding users (Can be card, a letter from their company or D4) ☐
- Subcontractors must submit to you a copy of the following inspections: ☐
  - A copy of their overall worksite safety inspections (Weekly) ☐
  - A copy of their daily excavation inspection (C9.1 or other) ☐
  - A copy of their daily forklift inspection (C13.1 or other) ☐
  - A copy of their daily aerial work platform inspection (C15.6 or other) ☐
  - A copy of their daily scaffold inspection if using common scaffolding (C15.1) ☐
  - A copy of their daily scaffold inspection if using their scaffolding (C15.1 or other) ☐
  - A copy of their daily fall protection equipment inspection (C10.3 or other) ☐
  - A copy of their hot work permit (C11.1 or other) ☐
  - Spot check their ladder inspections ☐

WEEKLY SAFETY INSPECTION FORM

Job Name:		**Date:**	
Job Number:		**Inspector(s):**	
Superintendent:			
Project Manager:			

Administration	**Engineering and Technology**
☐ IIPP Manual	☐ Concrete Safety Procedures
☐ SDS and Chemical Lists Posted	☐ Tilt Up safety Procedures
☐ Code of Safe Work Practices Posted	☐ Masonry Construction Procedures
☐ Required Posting Posted	☐ Confined Space Procedures
☐ Safety Meetings on File	☐ Crane, Rigging, Signaling Procedures
☐ Site Specific Safety Plan on File	☐ Demolition Procedures
☐ Pre-Task Planning	☐ GFCI/Temp Power/Temp/Lighting Procedures
☐ Emergency Response Plan Posted	☐ Lock Out / Tag Out Procedures
☐ PPE Requirements	☐ Excavation and Trenching Procedures
☐ Housekeeping	☐ Fall Protection Procedures
☐ First Aid (Kits – Personnel)	☐ Guardrails
Occupational Health	☐ Wall and Floor Hole Protection
☐ Bodily Fluids Spill Kit	☐ Anchorage, Lifeline, Lanyard and Harness
☐ Respiratory Protection	☐ Warning Lines
☐ Hearing Conservation Procedures	☐ Fire Protection Procedures
☐ Infection Control Procedures	☐ Hand, Power and Powder Actuated Tool Use
☐ Lead Exposure Prevention Procedures	☐ Forklift Operation Procedures
☐ Asbestos Exposure Prevention Procedures	☐ Motorized Equipment Procedures
☐ Silica Exposure Prevention Procedures	☐ Scaffolding Procedures
☐ Chemical Spill Kit	☐ Aerial Lift Procedures
Other	☐ Ladder Safety Procedures
☐ Potable Water Available	☐ Stairway safety procedures
☐ Sanitation/Toilets (Right Type and Number)	☐ Steel Erection Procedures
☐ Impalement Protection	☐ Welding, Cutting and Brazing Procedures

Notes:

Visitor's Hold Harmless Agreement

In consideration of being permitted, for my own purposes and interest, entry to the premises or construction site of TGC Structural, I hereby release, hold harmless, and indemnify TGC Structural, the project Owner, and its consultants, and subcontractors, from and against, and assume the risk, for any and all damages, losses, injuries and any and all other claims of any type whatsoever for personal injury (including death) and other loss or damage of any nature whatsoever for the injury to myself and/or damage to my personal property, sustained or caused while on such premises or site. In the event any clause, term or provision of this agreement shall be declared or adjudicated, void or invalid, it shall in no manner effect the other clauses, terms and provisions hereof, which shall remain in full force and effect, as if the clause, term or provision so declared or adjudicated invalid were not originally a part hereof.

The undersigned, and each of us, acknowledges that the Project sites, including any underground areas, is and are dangerous and that risk of serious accident or injury is inherent. Each of the undersigned acknowledges the risk(s) and voluntarily assumes such risk(s).

This release and hold harmless agreement is binding upon the undersigned and each of his, her or their respective heirs, representatives and assigns

Date	Company Name	Visitor's Name	Signature

Trained Personnel and OSHA Competent Person List

To be filled out by every major subcontractor onsite.

Company Name: _____

Project Name: _____

Signature of the Management Personnel attesting to the information: (Sign at Arrow)

▶ _____

Super/Fore Name: _____ **Phone:** _____

Safety Director: _____ **Phone:** _____

OSHA Required	Your Competent Person(s)	Your Trained Personnel
General Safety & Health Provisions		
First Aid/CPR		
Respiratory Protection		
Lead Safety (Awareness Training)		
Asbestos Safety (Awareness Training)		
Excavation		
Confined Space		
Fall Protection		

Crane Assembly Director(s)		
Crane Operator(s)		
Work Area Assessor(s)		
Steel Erection		
Erection Plan Developer(s)		
Qualified Signalmen		
Qualified Rigger(s) General		
Qualified Rigger(s) Multi lift		
Scaffold Erectors		
Scaffold Inspections		
Scaffold Users		

Scaffold Users Cont.		
Hot Work (Electrical)		
Forklifts		
Aerial Work Platforms (Boom and Scissor)		
Others		