

**SECTION 01 35 24**  
**CONSTRUCTION SAFETY**

**PART 1 – GENERAL**

**1.01 SECTION INCLUDES**

- A. Contractor's Safety Program.
- B. First Aid.
- C. Emergencies and emergency procedures.
- D. Protecting the general public.
- E. Specific requirements.
- F. Inspections by outside agencies.
- G. Inspections by the District.
- H. Hazardous materials encountered during construction.

**1.02 RELATED SECTIONS**

- A. Section 01 35 14, Operating System Interface
- B. Section 01 45 24, Testing Program Requirements
- C. Section 01 57 00, Temporary Controls

**1.03 MEASUREMENT AND PAYMENT**

- A. Separate measurement or payment shall not be made for work required under this Section. Costs in connection with the work specified herein shall be considered to be included with the related item of work in the Bid Schedule of the Bid Form, or incidental to the Work.

**1.04 REFERENCES**

- A. OSHA Occupational Safety and Health Administration
- B. Cal/OSHA California Occupational Safety and Health Administration
- C. CAMUTCD State of California, Department of Transportation (Caltrans), California Manual on Uniform Traffic Control Devices
- D. ANSI American National Standards Institute
- E. ASSE American Society of Safety Engineers

**1.05 SUBMITTALS**

- A. Refer to Section 01 33 00, Submittal Procedures, for submittal requirements and procedures.
- B. Submit within seven Days of Notice to Proceed the following items. Submittals must be approved prior to any physical work on the Jobsite and prior to submitting first monthly progress payment.
  - 1. Contractor's proposed Health and Safety Representative's (HSR's) resume, identifying his or her work experience and qualifications.
  - 2. Contractor's proposed Assistant Health and Safety Representative's (AHSR's) resume.
  - 3. Contractor's Safety Program.
  - 4. Two copies of the Contractor's Site Specific Emergency Action Plan.
- C. When public areas are affected, submit for review and approval plans in accordance with Section 01 57 00, Temporary Controls.

**1.06 CONTRACTOR'S SAFETY PROGRAM**

- A. The Contractor and Sub-Contractor's Safety Programs shall include an Injury and Illness Prevention Program, along with Trade Specific Safety Programs, Hazard Communication Program which includes the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS), Disciplinary Program, and Heat Illness Prevention Program. The Contractor shall be responsible for ensuring Subcontractor safety compliance.
  - 1. Injury and Illness Prevention Programs must meet the Cal/OSHA minimum requirements:
    - a. Management commitment and assignment of responsibilities.
    - b. Safety communication system with workers.
    - c. System for assuring worker compliance with safe work practices.
    - d. Scheduled inspections and evaluation system.
    - e. Accident investigation.
    - f. Procedures for correcting unsafe and unhealthy conditions.
    - g. Safety and health training and instruction.
    - h. Recordkeeping and documentation.
  - 2. Trade Specific Safety Programs including, but not limited to:
    - a. Lockout and Tagout.
    - b. Respiratory Protection.

- c. Fall Protection.
  - d. Welding, Cutting, Brazing, and Hot Work.
  - e. Excavation and Trenching.
  - f. Confined Space.
  - g. Lead and Asbestos with current licenses, permits, and training records.
  - h. Forklift operations.
  - i. Crane and derrick signaling and operation.
- 3. Hazard Communication with Globally Harmonized System (GHS) and Safety Data Sheets (SDS) included.
  - 4. Disciplinary Program, a policy that prohibits rough or boisterous play and activity, gambling, the use of alcohol or drugs, and the possession of weapons on the Jobsite.
  - 5. Heat Illness Prevention Program.
- B. All elements of the Safety Program must be indexed.

**1.07 HEALTH AND SAFETY REPRESENTATIVE (HSR)**

- A. HSR shall have a minimum of two years of qualified project safety experience on similar type construction projects that is representative of the planned construction activities, a current OSHA 30 Hour Construction Safety Training Certification (OSHA Card), and current First Aid/CPR certification. HSR responsibilities cannot be delegated to an office or staff employee. HSR will be responsible for identifying project construction health and safety concerns and expediting corrective action. HSR will manage and administer safety for all construction activities, as well as be responsible for overseeing and managing the Assistant Health and Safety Representative(s). HSR shall enforce and ensure that all safety and health construction safety requirements are implemented. HSR shall complete BART Training in accordance with Section 01 35 14, Operating System Interface.
- B. Assistant Health and Safety Representative (AHSR) shall have the same qualifications and responsibilities as HSR, with the exception that AHSR does not have to be a full-time representative and may perform other construction work as long as the work allows to provide effective safety oversight at the assigned Jobsite location. AHSR shall be an additional safety representative under the supervision of the HSR at the Jobsite, when the HSR cannot be present at Jobsite locations to oversee multiple shifts, or multiple Jobsite locations. Each additional shift and each Jobsite location entrance, separated by more than one quarter of a mile, shall have an approved AHSR present for the full duration of the construction work at the assigned Jobsite location. The engineer may approve a distance greater than one-quarter mile.
- C. The HSR shall, periodically, be present at the multiple shifts or Jobsite locations to monitor, train and manage the performance of the assigned AHSR. The HSR or AHSR shall be present at all times when work is performed at the Jobsite.

**1.08 FIRST AID**

- A. Contractor shall provide a minimum of one person who has a valid certificate in First Aid/CPR training from the American Red Cross, or equivalent training, that can be verified by documentary evidence. This person shall be made available at the Jobsite, at all times, to render First Aid/CPR.
- B. Contractor shall provide first aid kit(s) in a weatherproof container. The contents of the first aid kit shall be inspected regularly to ensure that the expended items are promptly replaced. The contents of the first aid kit shall be arranged to be quickly found and remain sanitary. First aid dressings shall be sterile in individually sealed packages for each item. The minimum first aid supplies shall be in accordance with Cal/OSHA Title 8, Section 1512 Emergency Medical Services.
- C. Workers shall receive prompt first aid care when injured.
- D. The HSR shall coordinate Contractor and Subcontractor injury reporting.

**1.09 EMERGENCIES AND EMERGENCY PROCEDURES**

- A. Contractor shall develop a Site Specific Emergency Action Plan for any event that may occur for the following categories: fire; worker injury; property damage and damage to various utilities (such as, electrical, gas, sewage, water, telephone or public roadways); earthquake; public demonstrations; bomb threats; hazardous materials encountered; toxic spills; explosions; vehicular accidents; and other items, as applicable to the project.
- B. The Site Specific Emergency Action Plan shall be in writing and shall cover those designated actions employers and employees must take to ensure worker safety.
- C. At a minimum, the following shall be included in the Site Specific Emergency Action Plan:
  - 1. Alarm system and worker notification of emergency.
  - 2. Means of reporting fires and other emergencies.
  - 3. Designated evacuation assembly area.
  - 4. Evacuation procedures and emergency escape route assignments.
  - 5. Procedures for workers who remain to operate critical plant operations before they evacuate.
  - 6. Accounting method for workers after an emergency evacuation has been completed.
  - 7. Rescue and medical duties for workers performing them.

8. Emergency Notification Flow Chart containing names, job titles, and contact information of persons who can be contacted. This must be posted at the Jobsite in a location clearly visible to all Jobsite personnel or made readily available.
  9. Identification of persons responsible for making emergency calls (preferably the ranking supervisor present).
  10. Emergency Procedures shall be kept current.
  11. Site Specific Emergency Action Plan training shall be included in employee orientation and re-training shall be provided to all workers as the Site Specific Emergency Action Plan is updated.
- D. Information and directions for Hospital and Occupational Clinic closest to the Jobsite, shall be posted at the Jobsite or made readily available.
- E. Contractor shall inform the Engineer immediately, should an accident or incident occur.
- F. Following an accident or incident, the Contractor shall:
1. Secure the area as expeditiously as possible.
  2. Provide only those, authorized representatives of the District and specific governmental agencies, an account of the nature of the emergency. Questions from media personnel shall be referred to the Engineer.
  3. Whenever the Contractor requires emergency services, such as ambulance, Fire Department or Police, the Contractor shall use the posted emergency numbers and also contact a District representative at: (510) 834-1297, BART Operations Control Center (OCC).

#### **1.10 PROTECTING THE GENERAL PUBLIC**

- A. The Contractor shall take the necessary steps to prevent injury to the general public, BART employees, and BART patrons, or damage to public property. The public shall be considered as any persons not employed by the Contractor or its Subcontractors. The Contractor shall adhere to the following requirements:
1. ANSI/ASSE "Protection of the Public on or Adjacent to Construction Sites." This standard provides the recommended elements and activities on construction projects to provide protection for the public.
  2. Work shall be performed outside of the designated work area only when specifically stated in writing from the Engineer.
  3. Necessary steps shall be taken to protect and maintain work areas that interface with public areas (sidewalks, station entrances, lobbies, corridors and aisles, stairways, escalators, elevators, station platforms, etc.).

4. All travel ways, access and egress points shall be maintained and clear of obstructions at all times.
5. Warning signs stating, "Construction Area Authorized Personnel Only" shall be conspicuously posted around the perimeter of each secured construction site to warn the public.
6. Warning signs shall be conspicuously positioned and a trained flag person shall be assigned when the Contractor's material or equipment may be encountered by pedestrians or vehicles.

#### **1.11 SPECIFIC REQUIREMENTS**

- A. **Work Areas:** The Contractor shall provide a safe work area. When unsafe conditions do exist, immediate abatement is required.
- B. **Work Practices:** The Contractor shall be responsible for assuring that all workers work safely.
- C. **Daily "Tool Box" Meetings:**
  1. The Contractor shall conduct daily "Tool Box" meetings for all workers. The purpose of these meetings is to:
    - a. Discuss observed accident trends and causes.
    - b. Plan safety into the work activities.
    - c. Take action to correct workers' safety concerns.
    - d. Review emergency procedures with workers.
    - e. Review public protection for daily work activities.
    - f. Review identified daily work hazards and hazard control methods.
  2. Daily documented pre-shift inspection shall be completed by a trained Competent Person, as defined by OSHA. The identified hazards and hazard control methods shall be communicated to all workers involved prior to the start of work, requiring written acknowledgement from the workers.
  3. These meetings shall be documented and include the date, subject line, notes, names, and signatures of attendees. Documentation shall be forwarded to the Engineer within one week of the meeting.
- D. **Accident and Incident Reports:** Notify Engineer immediately of any injury, property damage, incident or near miss. Provide Engineer with copies of all accident and incident reports, including witness names and contact information, responding agencies and contact information, USA tickets, pictures, drawing, employee training records, corrective action, and all other supporting documentation within 24 hours of occurrence. Written reports shall be required for all injuries, property damage, and near misses using Unusual Occurrence Report (UOR) form furnished by the Engineer. The Engineer, at her or his discretion, may hold a Safety Stand Down after an accident prior to commencement of work after the incident.

E. Cal/OSHA Permit and Registration Requirements:

1. Each Contractor shall obtain relevant permits, licenses, and certificates pertinent to the safety of workers and operations in compliance with the applicable legal requirements. Copies of the documents shall be submitted to the Engineer.
2. Permits shall be available for review at the Jobsite upon request of the Engineer.
3. Contractors must obtain and post Cal/OSHA Activity Permits from the California Division of Occupational Safety and Health for the following:
  - a. Erection or demolition of any building, falsework, scaffolding, or structure the equivalent of three stories or higher, or the equivalent height of 36 feet.
  - b. Erection or dismantling of vertical shoring systems more than 3 stories high, or the equivalent height of 36 feet.
  - c. Excavation Permits shall be required for excavations 5 feet or deeper.
  - d. Performing any work related to hazardous materials.
  - e. Use of fixed or mobile tower cranes.

F. Personal Protective Equipment (PPE): The Contractor's personnel, without exception, are required to wear certain PPE. All PPE must meet the requirements of BART, OSHA, ANSI, ASTM, NIOSH, and any other PPE regulating agency.

1. Hard hats and safety vests are mandatory and must be worn at all times within the Jobsite.
  - a. BART hard hats worn within the BART Operating Envelope must meet current BART Technical Specifications. Minimum requirements:
    - Color: BART approved high visibility yellow green
    - Shape: Full Brim
    - Accessories: Chin Strap
    - Reflectivity: Reflective Strip
    - Class: Class E Type 1 ANSI 289.1-2009
  - b. BART safety vests worn within the BART Operating Envelope must meet current BART Technical Specifications. Minimum requirements:
    - Color: Fluorescent Lime Yellow
    - Visibility: Class 3 ANSI Standard
    - Reflectivity: Level 2 ANSI Standard
    - Reflective Tape: At least 2" wide reflective tape sewn to vest on top of 4" wide red/orange trim. (Two horizontal stripes around entire vest (torso), two vertical stripes at front of vest from shoulder to top of horizontal stripe, stripes encircling each sleeve, and "X" stripe pattern on back of vest from shoulder to top of horizontal stripe)
    - Pockets: One clear plastic pocket with flap (3.75" H x 4.5" W) on the front for ID Card.

- c. All safety vests shall be made of high visibility fluorescent material. Vests must have one clear pocket with flap (3.75" H x 4.5" W) on the front for ID Card.
  - d. Safety vests and personal protective equipment must meet OSHA and CAMUTCD requirements when flagging or working on roadways.
  2. Hearing protection mandatory in all operations where workers are exposed to 80 decibels or higher.
  3. Eye protection mandatory at all times when on construction site. When performing tasks that produce flying debris or when handling any chemicals, appropriate eye protection shall be selected for the hazard or as specified in SDS.
  4. Fall protection shall be worn and used when working above a potential hazard or a fall hazard greater than 6 feet.
  5. Protective Footwear – work boots shall be required at all times on the Jobsite. Work boots shall comply with the American Society for Testing and Materials (ASTM) standard ASTM F-2413. Work boots with visible damage will not be permitted.
  6. Clothing – only long pants and shirts with sleeves allowed. No tank tops, mesh or flammable clothing will be permitted.
  7. Respiratory protection – when required by law to protect workers from breathing contaminated and oxygen-deficient air when effective engineering controls are not adequate, or while engineering controls are being instituted.
- G. Safety Administration Requirements:
1. Daily documented Jobsite pre-shift inspections.
  2. Daily documented pre-shift equipment inspections shall be completed prior to use. Inspections shall be completed by a trained person.
  3. Daily documented pre-shift inspections shall be performed by a Competent Person for excavation and trenching operations.
  4. Daily documented scaffold inspections shall be performed by a Competent Person prior to use.
  5. Monthly documented fire extinguisher inspections are required. Inspections shall be completed by a trained Competent Person.
  6. Hot Work Permits shall be required for all hot work. A trained Fire Watch shall be required during work and for a minimum of 30 minutes following hot work activities.
  7. OSHA and BART training requirements apply; workers shall be trained to perform their work tasks. The Contractor shall provide Site Specific New Hire

Orientation to all workers, including Subcontractors. Site Specific New Hire Orientation shall be required annually. All training shall be documented. When requested, employee training documentation shall be made available for review.

8. Site Specific New Hire Orientation shall include, at a minimum, review of Contractor Safety Program, Site Specific Emergency Action Plan, Personal Protective Equipment, and Fall Protection.
9. Safety Data Sheets (SDS) shall be maintained with the chemicals and consumable products on site and made available upon request. Chemicals and consumable products turned over to the District should be accompanied by the SDS.
10. Maintain Safety Programs to meet current regulatory agency requirements.
11. Contractor shall review Subcontractors' Safety Programs to ensure that they meet the same requirements as the Contractor Safety Program including Subcontractor trade specific programs.
12. Conflict between Codes and Safety Standards: In the case of conflict between codes, safety standards, reference standards, drawings, and other contract documents, the most stringent requirements shall govern. Conflicts shall be immediately brought to the attention of the Engineer. BART reserves the right to issue a final determination for conflicts.

#### **1.12 INSPECTIONS BY OUTSIDE AGENCIES**

- A. The Contractor shall be subject to inspections by outside agencies, including, but not limited to Cal/OSHA. The Contractor shall notify the Engineer immediately should citations, warnings or safety violations be issued. Copies of same shall be provided to the Engineer within 48 hours.

#### **1.13 INSPECTIONS BY THE DISTRICT**

- A. The Contractor shall cooperate with designated District representatives when conducting site inspections.
- B. The District may periodically make quality assurance audits of the Contractor's Safety Program.

#### **1.14 CONSTRUCTION HAZARDS**

- A. Temporary Fencing: Refer to Specification 01 52 00, Construction Facilities.
- B. Hazard Warning Signs: Signs and symbols shall be visible at all times when work is being performed, and shall be removed or covered promptly when the hazards no longer exist.
- C. Secure Work Areas: Secure work areas at all times to prevent unauthorized access.

- D. Gates: Secure gates with a chain and tamper proof lock in an open or closed position to prevent from accidental swinging.
- E. Traffic Control: Approved traffic controls shall be inspected daily to ensure compliance.
- F. Flaggers: All flaggers must have current CAMUTCD, OSHA and Caltrans approved flagger training certification when directing traffic.
- G. All mobile equipment shall have a functioning backup alarm or a spotter when the vehicle is backing up or when views are obstructed.
- H. Pedestrian Control: Pedestrians must be able to see and understand the routes they are to follow.
- I. Scaffolds: Scaffolds shall be erected, moved, dismantled, or altered only under the supervision and direction of a Competent Person qualified in scaffold erection, moving, dismantling or alteration. Such activities shall be performed only by experienced and trained person selected for such work by the Competent Person.
- J. Lockout and Tagout:
  - 1. The Contractor must properly lockout and tagout any equipment within the Contractor's responsibility.
  - 2. Control of the lock and tag is also the Contractor's workers' responsibility.
  - 3. The Contractor shall coordinate instances that require multi-employer lockout and tagout activities.
- K. Ground Fault Circuit Interrupters (GFCIs):
  - 1. Shall be used for temporary electrical wiring cords and equipment.
  - 2. GFCIs shall be tested in accordance with the manufacturers' requirements and tested daily prior to use.
  - 3. STOP WORK for GFCI trips and immediately notify the Engineer for further direction. Inspect equipment for defects and confirm with manufacturer that there are no recalls.
- L. Dust and Silica Control: Workers and the public shall be protected from respirable crystalline silica exposures by using dust controls and personal protective equipment.
- M. Respiratory Protection: When air is contaminated above the Permissible Exposure Level (PEL) including harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, appropriate respirators shall be provided to each potentially exposed worker as required per OSHA 1926.103.
- N. Tools and Equipment: When using tools and equipment, follow manufacturer's instructions.

- O. Transporting Materials in Public Areas: Travel ways, access, and egress points shall be maintained and clear of obstructions, in order to prevent slips, trips, and falls. When transporting material in public areas a spotter(s) shall be required. A temporary barricade system shall also be required when needed and requested by the Engineer. All ground and floor openings shall be covered, secured, and properly marked. No materials may be transported on public elevators or escalators.
- P. Mobile Equipment: Current training documentation shall be made available when requested. Retraining shall be required following all near misses, accident, or when requested.
- Q. Confined Space: Precautions shall be taken when workers enter a confined space. These precautions include current written confined space program, current documented training that meets OSHA requirements, confined space permit that includes rescue plan.
- R. Excavation: Elements of the OSHA Trenching and Excavation Standards shall apply. OSHA Excavation Permits shall be required for excavations 5' or deeper. At least one Trenching and Excavation Competent Person, with current OSHA certification certificate must be present at all times during trenching and excavation activities.
- S. Fall Protection: Elements of the BART and OSHA Standards shall apply. Fall protection shall also be required when requested by the Engineer. The most stringent requirements shall govern.
- T. Fire Extinguishers: Fire extinguishers not less than 5 lbs. each shall be made available. A hazard assessment shall be required in order to determine potential hazards that exist and the types of firefighting equipment that shall be necessary for each construction area.
- U. Fire extinguishers shall be kept in close proximity to locations where fuel is used.
- V. "No Smoking" Signs: Signs shall be posted at fuel storage areas.
- W. Smoking: Smoking shall be permitted only in designated areas approved by the Engineer.
- X. Hot Work:
  - 1. Hot work includes, but is not limited to, the following activities: grinding, cutting, welding, brazing or soldering, heating, hot air welding or other operations that generate heat, flames, arcs, sparks or other sources of ignition. Prior to performing hot work, the Contractor shall evaluate the following: type of hot work to be performed, site preparation, atmospheric conditions, and use of appropriate personal protective equipment, and firefighting equipment.
  - 2. Site preparation shall include a survey for the following: combustible materials; hazards posed by heat transfer; flammable, corrosive, or toxic residues; and equipment linings. Items like ones listed above shall be removed or protected from hot work activities prior to the start of work. Hole openings that sparks may enter through shall be secured prior to hot work operations.

3. The Contractor shall also evaluate the work area for the potential consequences of thermal conduction. Thermal conduction is the transfer of heat that could cause ignition by or through an object heated by the hot work operation.
  4. A Hot Work Permit system shall be established and implemented.
- Y. The use of a secondary containment sufficient to catch any contaminant or fuel releases that may occur shall be required around stationary equipment or fuel cans.

**PART 2 – PRODUCTS**

Not Used

**PART 3 – EXECUTION**

Not Used

**END OF SECTION 01 35 24**