

SECTION 6 - LEGAL RELATIONS AND RESPONSIBILITIES

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SECTION 6 LEGAL RELATIONS AND RESPONSIBILITIES

6-1 COMPLIANCE WITH LAWS AND REGULATIONS

The Contractor shall be familiar and comply with all Federal, State, and local laws, ordinances, codes and regulations which in any manner affect the Work, those engaged or employed in the Work or the material or equipment used in or upon the Work, or in any way affect the conduct of the Work. No pleas of misunderstanding of such laws, ordinances, codes, or regulations or of ignorance of the same on the part of the Contractor shall modify the provisions of the Contract. The Contractor and the Contractor's surety shall indemnify and save harmless the Agency, its governing Board, officials, directors, agents, employees, volunteers members, affiliates and their duly authorized representatives against any claim for liability arising from, or based upon, the violation of any such law, ordinance, regulation, decree, or order, whether by the Contractor or by the Contractor's employees.

The attention of the Contractor is directed to certain laws that affect the Contract. The listing of these laws in this Section is not to be construed as a listing of all applicable laws. The Contractor is solely responsible for familiarity and compliance with all applicable laws. Particular attention is called to the following:

6-1.01 Hours of Labor

Eight (8) hours of labor shall constitute a legal day's work and the Contractor or any Subcontractor under the Contractor, in the execution of the Contract, shall not require more than eight (8) hours of labor in any Calendar Day, and forty (40) hours of labor in any calendar week, from any person employed by the Contractor in the performance of the Work under the Contract, except as permitted under the provisions of Labor Code Sections 1810 to 1815 of the Labor Code of the State of California. The Contractor shall forfeit, as penalty to the Agency, twenty-five dollars (\$25) for each worker employed by the Contractor or any Subcontractor under the Contractor in the execution of the Contract for each Calendar Day during which any worker is required or permitted to labor more than eight (8) hours and for each calendar week during which any worker is required or permitted to labor more than forty (40) hours, in violation of the provisions of such Labor Code.

Overtime and shift work may be established by the Contractor with reasonable notice and the written permission of the Agency. No work other than overtime and shift work shall be done between the hours of 6:00 p.m. and 7:00 a.m., except such work as is necessary for the proper care and protection of work already performed or except in case of an emergency. Failure of the Contractor to perform the Work in accordance with this policy shall be cause for termination under Section 5-22, "Termination of Contract", of these Specifications.

6-1.02 Prevailing Wage

Pursuant to Labor Code Section 1770, the Contractor and the Contractor's Subcontractors shall pay not less than the prevailing rate of per diem wages, including, but not limited to, overtime, Saturday, Sunday, and holiday work, travel and subsistence, as determined by the Director of the California Department of Industrial Relations pursuant to Labor Code Section 1773. Copies of such prevailing rate of per diem wages are available upon request at the office of the Clerk of the Board of Supervisors, Suite 2450, 700 'H' Street, Sacramento, California 95814. The prevailing wage determinations are also available on the internet at <http://www.dir.ca.gov/DLSR/PWD>.

The wage rates determined by the Director of the California Department of Industrial Relations refer to expiration dates. Prevailing wage determinations with a single asterisk (*) after the expiration date that are in effect on the date of Notice to Contractors remain in effect for the duration of the project. Prevailing wage determinations with double asterisks (**) after

the expiration date indicate that the basic hourly wage rate, overtime and holiday wage rates, and employer payments to be paid for work performed after this date have been determined. If work extends past this date, the new rate shall be paid and should be incorporated in contracts entered. The Contractor should contact the Department of Industrial Relations as indicated in the prevailing wage determinations to obtain predetermined wage changes. All determinations that do not have double asterisks (**) after the expiration date remain in effect for the duration of the project.

The Contractor and the Contractor's Subcontractors shall forfeit, as penalty to the Agency, not more than fifty dollars (\$50) per Calendar Day or portion thereof, for each worker paid less than the prevailing wage rates for any work done under the Contract by the Contractor or by any Subcontractor. The Contractor and all Subcontractors shall comply with the provisions of Labor Code Sections 1774 and 1775. In addition to said penalty, the Contractor or Subcontractor shall pay each worker the difference between the prevailing wage and the amount paid for every hour the worker was paid less than the prevailing wage.

6-1.03 Payroll Records

Contractor shall comply with Labor Code Section 1776. Regulations implementing Section 1776 are located in Section 16000 and Sections 16401 through 16403 of California Code of Regulations, California Code of Regulations, Title 8. The Contractor shall be responsible for compliance by the Contractor's Subcontractors.

The Contractor and the Contractor's Subcontractors shall keep accurate payroll records, showing the name, address, Social Security number, labor classification, straight time and overtime hours worked each day and week, and the actual wages paid to each journeyman, apprentice, worker, or other employee employed in connection with the Work. Such records shall be certified and available for inspection at all reasonable hours at the principal offices of the Contractor and the Contractor's Subcontractors in a manner set forth in Labor Code Section 1776. The Contractor and the Contractor's Subcontractors shall file a certified copy of the records enumerated above with the Agency within ten (10) Calendar Days after receipt of a written request. The Contractor shall be held responsible for all Subcontractors' compliance with this requirement.

The non-compliance penalties specified in subdivision (g) of Labor Code Section 1776 may be deducted from progress payments to the Contractor.

6-1.04 Nondiscrimination

Attention is directed to Labor Code Section 1735, which prohibits discrimination in the employment of persons upon public works because of race, religious creed, color, national origin, ancestry, physical handicap, medical condition, marital status, or sex of such persons, and provides for penalties.

6-1.05 Apprentices

The Contractor shall comply with Labor Code Section 1777.5, concerning the employment of apprentices. The Contractor shall be responsible for compliance by all Subcontractors.

6-1.06 Workers' Compensation

Pursuant to Labor Code Section 1860, in accordance with the provisions of Section 3700 of the Labor Code, the Contractor is required to secure the payment of compensation to his employees.

6-1.07 Fair Labor Standards

The Contractor shall comply with the Fair Labor Standards Act of 1938 as amended (29 U.S.C. 3201 et seq.) as applicable.

6-1.08 Contractors License

The Contractor shall comply with Chapter 9 of Division 3 of the Business & Professions Code.

6-1.09 Use of Pesticides

The Contractor shall comply with all rules and regulations that govern the use of pesticides required in the performance of the Work, including any certifications that may be required for purchase, use, storage or application.

Pesticides include, but are not limited to, herbicides, insecticides, fungicides, rodenticides, germicides, nematocides, bactericides, inhibitors, fumigants, defoliants, desiccants, soil sterilants, and repellants.

Any substance or mixture of substances intended for preventing, repelling, mitigating, or destroying weeds, insects, diseases, rodents, or nematodes and any substance or mixture of substances intended for use as a plant regulator, defoliant or desiccant shall be considered a pesticide.

6-1.10 Reporting Requirements and Sanctions

Failure to provide specific information, records, reports, certifications, or any other documents required for compliance with the Contract will be considered noncompliance. At a minimum, documents required include:

1. Form SCLC-0001 - List Of Subcontractors

Form SCLC-0001 is required from the Contractor and each Subcontractor. This form is due within ten (10) Calendar Days after the date of the preconstruction conference or within ten (10) Calendar Days after the date of award of the subcontract. The later of the two dates will apply.

2. Form SCLC-347 - Certified Payroll Reports

Form SCLC-347 is required from the Contractor and each Subcontractor, regardless of the subcontract amount or the type of procurement, for every payroll period in which work is performed. These reports are due within ten (10) Working Days of the ending date of the payroll period. The payroll shall be accompanied by a "Statement of Compliance" signed by the employer or the employer's agent indicating that all of the information in the payroll is true, correct and complete, and the wage rates contained therein are not less than those required by the Contract. The "Statement of Compliance" shall be on forms furnished by the Agency or on any form with identical wording. The Contractor shall be responsible for the submission of copies of payrolls of all subcontractors.

3. Form SCLC-0002 - Fringe Benefit Statement

Form SCLC-0002 is required from the Contractor and each Subcontractor if fringe benefits are paid to an approved plan, fund, or program. The statement is due with first certified payroll report and any time the fringe benefit amounts change. The statement is not required if the fringe benefits are paid in cash to the employees.

4. Other Documentation

Other reporting documentation may be required depending on the source of funding for the project.

If the Contractor fails to comply with the provisions of this Section, the Contractor will be advised of the specific deficiencies and requested to make immediate corrections. The Contractor will also be advised that monetary deductions will be made for failure to effect corrections or delinquencies.

If the Contractor fails to correct a deficiency in the reporting requirements within fifteen (15) Calendar Days after notification, a deduction may be made. In such cases, the deduction will be ten percent (10%) of the estimated value of the work done during the month, except that the deduction will not exceed ten thousand dollars (\$10,000), nor be less than one thousand dollars (\$1,000), and will be deducted from the next progress payment.

Deductions for non-compliance will be in addition to all other deductions provided for in the Contract and will apply irrespective of the number of instances of noncompliance. Deductions will be made separately and cumulate for each estimate period in which a new deficiency appears. When all deficiencies for a period have been corrected, the deduction covering that

period will be released on the next progress payment. Otherwise, the deduction will be retained.

6-1.11 Subcontracting

The Contractor must comply with Section 4101 to Section 4113, inclusive, of the Public Contract Code.

6-1.12 Occupational Safety and Health

The Agency is committed to providing a safe and healthy workplace for employees and the public and eliminating any conditions or hazards that could result in personal injury or ill health. The Contractor and all Subcontractors must comply with all directives given by the Agency to abate a hazard and/or stop a work activity. Failure to comply with such a directive may result in the dismissal of the related Contractor/Subcontractor employee(s) as indicated in Section 5 of these Specifications or other sanctions as indicated in the project special provisions. Repeat safety violations of a similar nature and/or a single serious, willful safety violation by a Contractor may warrant review and termination of the contract.

The Contractor must comply with all applicable provisions of the California Occupational Safety and Health Act (Labor Code Sections 6300 et seq.). The foregoing includes, but is not limited to, all applicable California Code of Regulations, California Code of Regulations, Title 8 Safety Orders issued by the State of California Occupational Safety and Health Administration (Cal/OSHA). Failure of the Agency to suspend the work or notify the Contractor of the inadequacy of the Contractor's safety precautions or non-compliance with existing laws and regulations shall not relieve the Contractor or any Subcontractor of this responsibility.

6-1.13 Sacramento County Residents

Pursuant to Article V, Section 15 (i), of the Charter of the County of Sacramento, preference shall be given in the employment of labor to citizens who shall have resided in Sacramento County for at least six (6) months.

6-2 INDEMNIFICATION

6-2.01 Contractor's Performance

To the fullest extent permitted by law, Contractor shall indemnify, defend, and hold harmless Agency, its governing Board, officers, directors, agents, employees and volunteers from and against any and all claims, demands, actions, losses, liabilities, damages, and all costs incidental thereto, including cost of defense, settlement, arbitration, and reasonable attorneys' fees arising out of, pertaining to, or resulting from the acts or omissions of the Contractor, its officers, agents or employees, or the acts or omissions of anyone else directly or indirectly acting on behalf of the Contractor, or for which the Contractor is legally liable under law, regardless of whether caused in part by a party indemnified hereunder.

6-2.02 No Limitation of Liability for Indemnification

The indemnities set forth in this Section shall not be limited by the insurance requirements set forth in the Contract.

6-3 CONTRACTOR'S LEGAL ADDRESS

Both the address given in the Bid and the Contractor's office in the vicinity of the Work are designated as places that samples, notices, letters, or other articles or communications to the Contractor may be mailed or delivered. The delivery to either of these places shall be deemed sufficient service to the Contractor and the date of such service shall be the date of delivery. The address named in the Bid may be changed at any time by written notice from the Contractor to the Agency. Nothing herein shall be deemed to preclude or render inoperative the service of any drawing, sample, notice, letter or other article or communication to the Contractor.

6-4 CONTRACTOR NOT AN AGENT OF AGENCY

The Contractor shall be an independent contractor and not an employee, agent, or other representative of the Agency. Nothing in the Contract shall be construed to create any relationship of joint venture, partnership or any other association of any nature whatsoever between the Agency and the Contractor other than that of owner and independent contractor. The Agency shall have the right to direct the Contractor as provided in the Contract. The aforementioned right of supervision shall not reduce or abrogate the Contractor's liability of all damage or injury to persons, public property, or private property that may arise directly or indirectly from the Contractor's execution of the Work.

6-5 SUBSTITUTION OF SUBCONTRACTORS

The Contractor shall not, without the written consent of the Agency: (a) substitute any party as Subcontractor in place of the Subcontractor designated in the original bid; (b) permit any such subcontract to be assigned or transferred; or (c) allow the subcontracted work to be performed by anyone other than the original Subcontractor listed on the bid. Consent for substitution or subletting shall only be given when:

1. The Subcontractor listed in the bid, after having reasonable opportunity to do so, fails or refuses to execute a written contract that is based upon the Plans and Specifications for the project or the terms of such Subcontractor's written bid and is presented to the Subcontractor by the Contractor; or
2. The listed Subcontractor becomes bankrupt or insolvent; or
3. The listed Subcontractor fails or refuses to perform the subcontract; or
4. The listed Subcontractor fails or refuses to meet the bond requirements of the Contractor as set forth in California Public Contract Code Section 4108; or
5. The Contractor demonstrates to the Agency, subject to the further provisions set forth in California Public Contract Code Section 4107.5, that the name of the Subcontractor was listed as a result of an inadvertent clerical error; or
6. The listed Subcontractor is not licensed pursuant to the Contractor License Law as set forth in the Business and Professions Code; or
7. The Agency determines that the work performed by the listed Subcontractor is substantially unsatisfactory and not in substantial accordance with the Contract, or that the Subcontractor is substantially delaying or disrupting the progress of the work; or
8. The listed Subcontractor is ineligible to work on a public works project pursuant to Section 1777.1 and 1777.7 of the Labor Code.

In the event of such substitution, the Agency will give at least five (5) Working Days notice in writing to the listed Subcontractor, unless they have advised the Agency in writing that they have knowledge of the Contractor's request for the substitution.

6-6 ASSIGNMENT OF CONTRACT

The Contract or the performance of the Contract may be assigned by the Contractor, but only upon written consent of the Agency and the Contractor's surety, unless the surety has waived its right of notice of assignment. No such assignment or subcontracting shall be permitted that would relieve the Contractor or the Contractor's surety of their responsibilities under the Contract.

6-7 ASSIGNMENT OF MONIES

The Contractor may assign monies due the Contractor under the Contract, and such assignment will be recognized by the Agency, if given proper notice, to the extent permitted by law. Any assignment of monies shall be subject to all deductions provided for in the Contract.

All money withheld may be used by the Agency for the completion of the Work if the Contractor defaults.

6-8 PROTECTION OF AGENCY AGAINST PATENT CLAIMS

The Contractor shall assume all costs arising from the use of patented materials, equipment, devices, and processes on or incorporated in the Work and shall indemnify and hold harmless the Agency and the Agency's officers, officials, agents, employees, volunteers, members, affiliates and their duly authorized representatives from all actions for, or on account of, the use of any patented materials, equipment, devices, or processes in the construction of, or subsequent operation of, the Work. Before final payment, if requested by the Agency, the Contractor shall furnish acceptable proof of a proper release from all costs or claims arising from the use of patented materials, equipment, devices, or processes used on or incorporated in the Work.

6-9 RESPONSIBILITY OF THE CONTRACTOR

The Contractor shall be solely responsible for, and have exclusive control over, construction means, methods, techniques, sequences, procedures, and coordination of all portions of the Work under the Contract, unless otherwise provided in the Contract or in an emergency situation where specific direction regarding means, methods, techniques, sequences, procedures, and coordination is necessary to mitigate an imminent and serious health and safety hazard.

All Contractors, in coordination with the Agency and its duly authorized representatives, as appropriate, shall implement measures that will create safety awareness and promote safe work practices at the jobsites and shall pursue the Contract in the safest manner possible.

The Contractor shall take appropriate action, up to and including termination, against any Contractor employee who willfully or repeatedly violates workplace safety rules.

The Work shall be under the Contractor's responsible care and charge until completion and final acceptance, and the Contractor shall bear the entire risk of injury, loss, or damage to any part by any cause. The Contractor shall rebuild, repair, restore, and make good all injuries, losses or damage to any portion of the Work or the materials occasioned by any cause, and shall bear the entire expense.

In no case shall the Contractor's use of Subcontractors in any way alter the position of the Contractor or the Contractor's sureties with relation to the Contract. When a Subcontractor is used, the responsibility for every portion of the Work shall remain with the Contractor. No Subcontractor will be recognized as having a direct contractual relationship with the Agency. All persons engaged in the Work under the Contract will be considered as employees of the Contractor and their work shall be subject to all the provisions of the Contract. The Agency will deal only with the Contractor who is responsible for the proper execution of the Work. The Contractor shall pay when due all valid claims of Subcontractors, suppliers, and workmen with respect to the Work.

The mention herein of any specific duty or responsibility imposed upon the Contractor shall not be construed as a limitation or restriction of any other responsibility or duty imposed upon the Contractor by the Contract, said reference being made herein merely for the purpose of explaining the specific duty or responsibility.

6-10 PERMITS AND LICENSES

The Contractor shall, at the Contractor's sole expense, obtain all necessary permits and licenses for the construction of the Work, give all necessary notices, pay all fees required by law, and comply with all laws, ordinances, rules and regulations relating to the Work and to the preservation of the public health and safety. The Contractor shall also procure all permits and

licenses necessary for the normal conduct of the Contractor's business and construction operations.

Unless otherwise noted in the Special Provisions, building, plumbing, heating, electrical, and similar permits that the Contractor is required to obtain from the County Building Inspection Division for County-owned projects are fee exempt and will be obtained by the Agency.

The California Environmental Quality Act of 1970 (CEQA) may be applicable to permits, licenses, and other authorizations that the Contractor shall obtain from local agencies in connection with performing the Work. The Contractor shall comply with the provisions of CEQA in obtaining such permits, licenses, and other authorizations, which will be obtained in time to prevent delays to the Work.

The Contractor shall comply with permits, licenses, or other authorizations applicable to the Work obtained by the Agency in conformance with the requirements in CEQA.

6-11 SAFETY

6-11.01 Safety Plans and Documents

Safety is a prime consideration in all Agency contracts. The Contractor shall conform to all applicable occupational safety and health standards, rules, regulations, and orders established by the State of California or Federal Government. The Contractor, and all Subcontractors, shall, upon request, submit to the Agency a copy of their Injury Illness Prevention Program (IIPP), Code of Safe Work Practices (CSP), Contract Specific Safety Plan (CSSP), and Task Specific Safety Plan (TSSP) for review by the Agency. The Contractor is required to fulfill the requirements of these programs during the prosecution of the Work. No work shall be started unless otherwise authorized by the Agency until the Agency has completed its review of all required safety documents and provided written authorization to proceed.

All plans shall be formatted in a logical and orderly fashion, including tabs and section dividers for ease of navigation and review. The Contractor and all Subcontractors are required to comply with the requirements of the TSSP during the prosecution of the Work.

The agency has full authority to enforce, make exceptions to, or waive requirements of any of the required safety plans or documents on a case-by-case basis. Exceptions and or waivers will be provided in writing to the Contractor. Use of all or part of any safety and health manual or plan does not relieve the Contractor of the responsibility to comply with prevailing local, state, and federal laws and regulations.

6-11.01.A Injury Illness Prevention Program (IIPP) and Code of Safe Work Practices (CSP)

The IIPP and CSP shall be prepared in accordance with California Code of Regulations, California Code of Regulations, Title 8, Section 1509.

6-11.01.B Contract Specific Safety Plan (CSSP)

The CSSP shall state the nature of the Work and the anticipated hazards, and shall describe how those hazards will be mitigated to protect workers and the public. The CSSP shall cover the notification of employees, subcontractors, and others working on or visiting the jobsite of foreseeable hazards and provisions for protective equipment. The CSSP shall certify that all employees have received or will receive appropriate site-specific safety and health training particular to the unique hazards of the Work.

6-11.01.C Task Specific Safety Plan (TSSP)

A TSSP shall be prepared for high-hazard activities including, but not limited to, excavations, permit-required confined spaces, traffic safety, tunneling, hazardous energy, critical crane lifts, lead or asbestos work, and use of radioactive materials or radiation generating devices. Specific requirements for TSSP's may be indicated in the Special Provisions. At a minimum, the TSSP shall include the following elements:

1. A detailed description of and step-by-step procedures for each high-hazard activity, including engineering and administrative hazard control measures;
2. Designation of responsibilities and authority for all key personnel;
3. Names of and training records for all Competent Persons and for all employees performing critical tasks;
4. Employee medical and equipment test records pertinent to the specific task such as respirator fit test records and medical evaluations;
5. List of all construction, safety and personal protective equipment (PPE) to be used;
6. Illustrations and calculations relevant to the mitigation of related hazards;
7. Copies of all forms and checklists to be used;
8. Copies of Material Safety Data Sheets (MSDSs) for all substances to be used; and
9. Emergency response and rescue procedures.

6-11.02 24-Hour Contact Information

The Contractor shall have on record with the Agency the following twenty-four (24) hour emergency contact numbers:

- Traffic Control Device Supplier: Supplier of barricades, steel plates, delineators, channelizers, construction signs, and other traffic control equipment to be used during construction.
- Contractor Representative: An employee of the Contractor having the authority to make decisions and the ability to respond to an emergency on the project at any time.
- Safety Representative: The Contractor's Safety Representative shall have the authority to make decisions regarding safety and health concerns on the project and to direct the Contractor's personnel to abate any hazard identified by the Agency. The Contractor's Safety Representative shall be properly trained in all workplace hazards to be encountered on the project.

6-11.03 Illumination

Work by the Contractor during the hours of darkness or in locations where natural light is inadequate shall be illuminated to conform to the applicable minimum illumination intensities established by the California Occupational Safety and Health Administration (CAL/OSHA) in California Code of Regulations, Title 8, Sections 1523, 3317, 8415, and the approved Traffic Control Plan (TCP).

6-11.04 Personal Protective Equipment (PPE).

Cal/OSHA standards for PPE shall be adhered to. The Contractor must provide the required PPE to employees and must ensure that it is used and maintained in a sanitary and reliable condition.

6-11.05 Confined Spaces

6-11.05.A Contractor Responsibilities and Qualifications

Attention is directed to the provisions of Article 108 of the General Industry Safety Orders (GISO), California Code of Regulations, Title 8, and Article 4 of the Construction Safety Orders (CSO), California Code of Regulations, Title 8.

A confined space is defined as an area:

- Large enough and configured in such a way that an individual can bodily enter and perform assigned work;
- With limited or restricted means for entry or exit; and
- Not designed for continuous occupancy.

Confined spaces include, but are not limited to: storage tanks, vessels, manholes, bins, boilers, sewers, storm drains, utility vaults, tunnels, pipes, pits, vaults, and in some instances, excavations.

A permit-required confined space is defined as a confined space that has or has the potential for one or more of the following:

1. A hazardous atmosphere
2. Material that has the potential to engulf the entrant
3. An internal configuration that might cause an entrant to be trapped or asphyxiated
4. Any other recognized serious safety or health hazards.

Prior to any permit-required confined space entry, the Contractor shall submit the following for Agency review and acceptance:

1. The Contractor's general procedures for confined space entry
2. A detailed description of and step-by-step procedure for the proposed work
3. A list of names of all employees involved in the permit-required entry and each person's responsibilities and authority in conjunction with the entry
4. A list of all equipment to be used including but not limited to respiratory, atmospheric monitoring, chemical analysis, communication, life line, safety harness, lifting hoist, ventilation, lighting, power tools, or other supporting systems and equipment.
5. Copies of all forms to be used (e.g., entry permit)
6. Rescue procedures, including notification procedures, name and contact information of the emergency response agency, and method of communication with an outside rescue source.
7. Employee training records pertaining to confined spaces
8. Employee records pertaining to the use of respiratory equipment (i.e. medical approval).
9. Material Safety Data Sheets (MSDS) for all applicable chemicals and products
10. Hot work procedures (if applicable)
11. Lock-out/tag-out procedures (if applicable)
12. Other applicable planning and safety information

The Contractor's submittal shall be made a minimum of thirty (30) calendar days prior to any confined space entry in accordance with Section 5-8, "Contractor's Submittals", of these Specifications.

The Contractor will not be allowed to make a permit-required confined space entry until the Agency has reviewed and accepted the Contractor's qualifications and proposed methods.

The Contractor shall conform to the procedures established by the Contractor's submittal during all confined space operations. Contractor shall provide all monitoring and safety equipment necessary to perform pre-entry checks of confined spaces. The Contractor shall also provide all monitoring, safety, and communications equipment required for confined space operations.

Tests for the presence of combustible or dangerous gases and/or oxygen excess or deficiency shall be performed from outside the confined space with an approved device immediately prior to a worker entering the confined space, and continuously during entry. Care shall be taken to ensure that the atmosphere is tested throughout the confined space. Testing equipment shall be fitted with the appropriate sensors for accurately detecting anticipated atmospheric hazards (relevant chemical analysis). The results of the tests shall be recorded on the Entry Permit along with the equipment or method(s) that were used in performing the tests. No employee shall be permitted to enter or remain within a confined space where tests indicate the presence of a hazardous atmosphere, unless the employee is wearing suitable and approved respiratory protective equipment (non-combustible atmosphere only).

Mechanical ventilation shall be used to augment natural air circulation where necessary and must be used to purge the atmosphere of any Permit-Required Confined Space (PRCS) or Alternate Entry Procedures (C5) space. Mechanical ventilation and its use shall meet the following minimum requirements:

- Before ventilation is initiated, information such as restricted areas within the confined space, voids, the nature of the contaminants present, the size of the space, the capacity needs of the blower(s), the type of work to be performed, and the number of people involved must be considered.

- Blowers shall function continuously and correctly throughout all entry activities. If a blower fails, all employees must leave the space immediately.
- A warning system must be in place to immediately notify employees in the event of a hazard or a failure in the ventilation equipment.
- Although the time required to purge the space will depend on the volume of the space and the air volume capacity of the blower, the space shall be purged sufficient to achieve a minimum of six (6) air exchanges per hour. The Contractor shall increase this air exchange rate as necessary.
- The space shall be purged for a minimum of fifteen (15) minutes before entry.
- Ventilation equipment shall be set up such that it blows 100% outside air into the space rather than exhausting air from the space.
- Blowers shall be located outside of the space so they will not pick up exhaust gases and/or other atmospheric hazards. Where a portable gasoline powered generator is used to power the blower(s), the generator shall be located as far as possible from the blower air intake. Motor vehicles and other internal combustion engines should not be allowed to operate with their exhaust pipes located near the blower air intake(s).
- Blowers shall be located so that the fresh air enters the space as near as possible to where employees will be located.
- Open as many of the adjacent entry points as possible to improve airflow.
- Oxygen may not be used to substitute for fresh air.
- Use of mechanical ventilation shall be noted on the entry permit.

Note: Atmospheric testing shall be conducted following purging, before entry, and continuously during entry. Entry may not begin until testing has demonstrated that the hazardous atmosphere has been effectively eliminated or controlled.

6-11.05.B Agency Responsibilities for Permit Confined Spaces

The Contractor shall be provided with information regarding known hazards and known or potential permit spaces.

After the Agency has reviewed the Contractor's submittal to perform permit-required confined space entry work, the Contractor will be provided with the following:

1. Notification of the location, physical characteristics, known hazards, etc. regarding the permit-required confined space the Contractor anticipates entering.
2. Information regarding safety items (e.g. nearby emergency equipment), precautions, procedures, safeguards, etc. installed or implemented and that may be available to the Contractor's employees in or near the permit-required confined space.

A debriefing session will be held with the Contractor at the conclusion of the entry operation if any hazards were encountered or created and remain.

The Agency's failure to identify a confined space does not relieve the Contractor of the responsibility for compliance with the requirements of Articles 4 and 108 of the California Code of Regulations and these Specifications.

6-11.05.C Existing Sewers and Storm Drains

Because of the potential danger of solvents, gasoline, and other hazardous material in existing sewers and storm drain pipes, these areas shall be treated as permit-required confined spaces unless it has been proven, through appropriate testing, that no hazards exist or are expected to develop.

6-11.05.D Joint Agency – Contractor Entries

Unless otherwise directed in writing by the Agency, when Agency employees work along side the Contractor in a permit-required confined space, the permit procedures for both the Agency and the Contractor shall be used. The Entry Supervisor shall coordinate the requirements of both permit procedures prior to entry.

6-11.06 Respiratory Protection

The Contractor is required to evaluate job tasks to determine if the task will result in exposure to gases, vapors, fumes, dust, mists, specific regulated substances (e.g., asbestos, lead) above legally established limits. In these cases, the Contractor must institute administrative or engineering controls to achieve compliance. When these controls are infeasible, respiratory protection must be used. When the Contractor intends to use respiratory protective equipment they must be in full compliance with California Code of Regulations, Title 8, Section §5144 “Respiratory Protection” and any other applicable regulation(s). At a minimum, this includes:

- A written plan with worksite-specific procedures
- Hazard evaluations to characterize respiratory conditions of the work
- Medical evaluations to determine the ability of workers to wear respirators
- Fit testing to verify that the selected make, model and size of the respirator facepiece will achieve the anticipated protection during use
- Respirator selection, maintenance and care
- A training program for affected employees
- Periodic program evaluations

6-11.07 Hazard Communication

The Contractor is required to develop, implement and maintain a Hazard Communication Program in order to protect employees who may use or be exposed to hazardous substances during the course of construction. The Contractor’s Hazard Communication Program will define responsibilities for the following activities:

- Maintaining a written hazard communication plan
- Maintaining a current inventory of hazardous chemicals at the work site
- Maintaining a current Material Safety Data Sheet (MSDS) for each hazardous chemical or chemical compound at the work site
- Labeling chemical containers properly
- Training employees

The Contractor shall provide copies of MSDS’s to the Agency upon request.

6-11.08 Control Of Hazardous Energy (Lockout/Tagout)

Before a Contractor or any of its subcontractors performs any work on a system where the unexpected energizing, start up, or release of kinetic or stored energy could occur and cause injury or damage, the energy source shall be isolated in accordance with the requirements of Section 3314 of the General Industry Safety Orders (GISO), Subchapter 5 of the Electrical Safety Orders (ESO), and these Specifications.

When the Contractor is planning the use of hazardous energy control procedures, they shall submit a Hazardous Energy Control Plan (HECP) to the Agency for review and acceptance. Implementation of hazardous energy control procedures shall not be initiated until the HECP has been accepted by the Agency. The HECP shall clearly and specifically outline the scope, purpose, authorization, rules, and techniques to be used for the control of hazardous energy, including, but not limited to, the following:

1. A statement of the intended use of the procedure
2. Means of coordinating and communicating hazardous energy control activities including coordination with the facility owner and maintenance personnel
3. Procedural steps and responsibilities for shutting down, isolating, blocking, and securing systems to control hazardous energy
4. Procedural steps and responsibilities for the placement, removal, and transfer of lockout and tagout devices
5. Procedural steps and responsibilities for placing and tagging, and moving or removing tags and protective grounds

6. Requirements for testing the system to verify the effectiveness of isolation and lockout and tagout devices
7. A description of any emergencies that may occur during system lockout or tagout and procedures for safely responding to those emergencies
8. Requirements when authority for removal of hazardous energy control devices must be transferred from the authorized employee to another individual, and the names of the individuals qualified for receiving such transfer
9. The means to enforce compliance with the procedures

The Agency and the Contractor shall fully coordinate all hazardous energy control activities, including coordination with the facility owner and maintenance personnel, throughout the planning and implementation of these activities. Each shall inform the other of their energy control procedures, ensure that their own personnel understand and comply with rules and restrictions of their procedures, and ensure that all employees affected by the hazardous energy control activity are notified when the procedural steps outlined in the HECF are to be initiated.

A preparatory inspection with the Agency and Contractor shall be conducted to ensure that all affected personnel understand the energy hazards and the procedures for their control.

Daily inspections shall be conducted by a qualified person to ensure that all requirements of the hazardous energy control procedures are being followed.

Training shall be provided to ensure that the purpose and function of the hazardous energy control procedures are understood by employees and that employees possess the knowledge and skills required for the safe application, usage, and removal of energy controls.

In addition to the above, the Contractor shall comply with the following requirements with respect to lockout/tagout safety equipment and devices:

1. Work shall not be performed on any equipment until all sources of power are locked out and/or tagged to protect against unexpected or inadvertent operation.
2. All employees affected by the lockout and/or tagout procedures, including but not limited to Contractor, Agency, and Owner and maintenance personnel, shall be notified, before and upon completion of, the application and removal of lockout and/or tagout devices.
3. The operation of equipment is prohibited when any valves, switches or other energy isolating devices have been locked and/or tagged.
4. After checking the equipment area to see that no one is exposed, lockout devices and accident prevention tags may be removed only by the individual(s) who attached them.
5. Systems with energy isolating devices that are capable of being locked out shall use locking devices to control hazardous energy unless the Contractor's designated authority has demonstrated and documented all of the following:
 - a. The use of locking devices would entail burdens that exceed any advantage to the use of lockout over the use of tagout devices,
 - b. The use of tagout devices will provide full personnel protection, and
 - c. All affected employees can and will be informed that tagout is being used in lieu of lockout (posted or otherwise provide documentation to all affected personnel).
6. Lockout devices shall be used for no other purpose than lock out, and shall be substantial enough to prevent removal without the use of excessive force or unusual techniques.
7. Tag out devices, including their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal.
8. Supply and use Contractor-owned locks, tags, and other energy control devices, and have a sufficient supply on hand to effectively meet the needs of the HECF.
9. Provide all necessary and requisite tools and equipment (e.g., rubber insulating gloves, blankets, protective footwear, safety glasses, and appropriate hazard/risk category flame resistant clothing and PPE when working within arc flash protection boundaries).

6-11.09 Control Of Fugitive Emissions

The Contractor shall take precautions necessary to control fugitive emissions from the job site. Fugitive emissions include, but are not limited to: nuisance dust, chemical odors/vapors/gases, noise, hazardous materials (such as lead or asbestos), and Aerosol Transmittable Diseases (ATDs).

Where the product(s) or material(s) to be used by the Contractor has a permissible exposure limit (PEL) established by Cal/OSHA, and where Agency employees or the public may be exposed to the product or material, the Contractor shall maintain exposure levels below the PEL where an exposure condition during use exceeding the PEL could reasonably be anticipated. In such instances, the Contractor shall monitor, or shall contract to have monitored, work area exposure conditions. Monitoring shall occur, at a minimum, during the start of work and whenever there is a change in procedure, process, or chemicals or materials used. When requested, copies of air monitoring data shall be provided to the Agency and to the building owner (where applicable) and shared with building occupants. If it is deemed unfeasible to maintain exposures below the PEL, the Contractor shall restrict access to all areas where exposures exceed the PEL to authorized personnel only.

6-11.09.A Noise

The Contractor must comply with applicable regulatory requirements for noise and Sacramento County Code (SCC), Title 6, Chapter 6.68. The Special Provisions may contain specific or additional requirements. If the Contractor's employees are exposed to a time weighted average noise level of 90 decibels or more, then the Contractor must implement a hearing conservation program as required by California Code of Regulations, Title 8, General Industry Safety Orders (GISO), Article 105, "Control of Noise Exposure". Internal combustion engines used for any purpose on the Work must be equipped with a muffler recommended by the manufacturer.

6-11.09.B Asbestos Containing Material (ACM)

All work shall be performed in compliance with current federal and state regulations, including U.S. EPA and California Code of Regulations, Title 8, Sections 1529 and 5208, "Asbestos", the Special Provisions, Section 10-7.01 "Contaminated or Hazardous Materials", of these specifications, and the requirements contained herein.

No ACM shall be disturbed unless all required documentation has been received and reviewed by the Agency. When requested by the Agency, the Contractor shall provide a detailed Asbestos Abatement Plan (AAP). The plan shall include the location and layout of decontamination areas, the sequencing of asbestos work and methods to be used to assure the safety of building occupants, workers, and visitors to the site, methods for controlling visible emissions in the work area and the containerization of asbestos debris, and the following:

1. Current (no more than 12 months old at the end of the project) medical examination reports for each employee of the Contractor who will be on site
2. Documentation that the Contractor is currently licensed by the State of California to perform asbestos abatement
3. Documentation of timely notification to the State Department of Industrial Relations (DIR) and documentation of project fees paid
4. Current (no more than 12 months old at the end of the project) certificates of asbestos training for each employee of the Contractor who will be on site.
5. Current (no more than 6 months old at the end of the project) documentation of respirator training and fit testing for each employee of the contractor who will be on the site.
6. Letter from EPA indicating approved disposal site for Asbestos Containing Material (ACM)
7. A listing of authorized personnel to be granted access to the work area.
8. All necessary permits, licenses, and insurance

9. Documentation of the Contractor's notifications to businesses and residents regarding the abatement project schedule.
10. The names and numbers of person(s) to be contacted on behalf of the Contractor in cases of an emergency.
11. Material Safety Data Sheets (MSDSs) for all chemicals that will be used or that will be present at the job site. MSDSs must be provided to building occupants if chemicals or other hazardous substances are to be used in a facility or in areas where vapors or fumes could enter air intakes.

6-11.09.C Removal and Disposal of Asbestos Concrete Pipe (ACP)

The disturbance of ACP is regulated under California Code of Regulations, Title 8, Section 1529. Any disturbance of any quantity, or potential for exposure, is subject to this regulation. In addition, the following shall apply:

1. No ACP shall be disturbed unless first approved by the Agency.
2. The Contractor is responsible to employ those means, methods, techniques and sequences to ensure that all ACP is removed in a manner such that it remains intact and non-friable. When it is impractical to remove the ACP without creating a friable material, the Contractor shall submit an AAP plan for review and approval by the Agency.
3. Any disturbance of greater than 100 sq. ft. of ACP requires the Contractor to be registered for asbestos-related work. Exception: Contractors with employees and supervisors who have received the prescribed 4-hour ACP training by a Cal-OSHA certified training provider may non-destructively impact greater than 100 sq. ft. without the asbestos-related work registration. Employees must have a current (within one calendar year) certificate of training from an accredited training provider.
4. Wet-cutting, snap cutting or a "clean break" of the pipe by an excavator is considered non-destructive. The abrasive sawing of ACP is a specifically "prohibited activity".
5. Any operation that crushes or otherwise renders the ACP friable requires that the work be done by a registered contractor (regardless of the 100 sq. ft. regulatory requirement).
6. If more than 260 linear feet of ACP is to be removed, which on removal will become friable, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) notification must be filed.
7. All non-friable ACP waste shall be packaged (6-mil waste bags or wrapped in 6-mil poly sheeting and taped to be leak proof) and disposed of at a classified landfill that accepts asbestos waste. The Contractor shall submit to the Agency a certificate of disposal to verify that the waste was legally disposed of. If underground sections of ACP are to be abandoned in place, they shall be intact and non-friable.

6-11.09.D Lead

The Contractor is responsible for complying with all applicable federal, state, and local regulations and requirements for lead that may have jurisdiction over their work. This includes, but is not limited to the Environmental Protection Agency (EPA), Identification of Dangerous Levels of Lead, Final Rule (40 CFR Part 745 Subpart D), Housing and Urban Development (HUD) Federal requirements (24 CFR Part 35), California Department of Health Services (DHS) Accreditation, Certification, and Work Practices For Lead-Based Paint And Lead Hazards (Title 17, California Code of Regulations, Division 1, Chapter 8, Sections 35000-361000), and California Occupational Safety and Health Administration (Cal/OSHA) Lead Standard for the Construction Industry (California Code of Regulations, Title 8, Section 1532.1)

6-11.09.E Aerosol Transmittable Disease (ATD) Control

The Contractor shall comply with all regulatory requirements for the protection of employees from Aerosol Transmittable Diseases (ATD) in the workplace. This includes compliance with California Code of Regulations, Title 8, Article 109, Hazardous Substances and Processes of the General Industry Safety Orders (GISO), and with all established procedures to protect

employees and the public from ATD exposure in and around facilities owned and operated by the Agency.

6-11.10 Mining and Tunnel Safety

The Contractor must be aware of any Work that may be under the jurisdiction of either the Tunneling Safety Orders (TSO), California Code of Regulations, Title 8, Sections 8400 through 8568 or the Mine Safety Orders (MSO), California Code of Regulations, Title 8, Sections 6950 through 7283. It is the Contractor's responsibility to apply for and obtain any permits and licenses and to comply with all applicable laws and regulations.

6-12 PUBLIC CONVENIENCE AND SAFETY

6-12.01 Public Convenience

All work within public streets and/or roadway rights-of-way shall be done in an expeditious manner and cause as little inconvenience to the traveling public as possible. Vehicles, bicycles, and pedestrians must be allowed to pass at all times except during an emergency closure. See Section 7-8, "Peak Hours, Hours of Darkness, Holidays and Weekends", of these Specifications for time limitations. See Section 7-8, "Emergency Repairs", for the criteria of what constitutes an emergency.

The surface of roadways open to the public shall be kept in a smooth, even condition free of humps and depressions, satisfactory for the use of public traffic at all times as determined by the Agency.

Temporary facilities used by the Contractor to perform the Work or store or stage material or equipment shall not be installed or placed where they will interfere with the free and safe passage of public vehicular, bicycle, or pedestrian traffic.

6-12.02 Pedestrian and Bicyclist Access

The Contractor shall not block the movement of pedestrian or bicycle traffic. The Contractor shall provide for pedestrian and bicycle traffic by phasing construction operations and/or by providing alternative pedestrian and bicyclist access through or adjacent to construction areas. Proper advance notice signage with reasonable detours shall be installed and maintained through all phases of construction. Access to pedestrian and bicycle devices at traffic signals shall be maintained at all times. At no time shall pedestrians be diverted into a portion of the street used for vehicular traffic or on to private property unless proper barriers, delineation, and adequate signage is in place. Pedestrian and bicycle access shall consist of five-foot (5') wide bridges across trenches and five-foot (5') wide passageways through construction areas. Hand railings for pedestrians shall be provided when required by Cal/OSHA Regulations or the Americans with Disabilities Act (ADA) on each side of each bridge or passageway to protect pedestrians from hazards caused by construction operations or adjacent vehicular traffic.

Railings or barriers, which border passageways located in roadway areas, shall be retro-reflectorized on the side facing oncoming traffic.

6-12.02.A Pedestrians (Temporary Alternate Circulation Path)

When crosswalk or other pedestrian facilities are temporarily closed or relocated, temporary alternate circulation paths are required to be provided by the Contractor to achieve the maximum accessibility feasible under existing conditions.

6-12.02.A(1) Components

A Temporary Alternate Circulation Path (hereafter referred to as "path" or "pathway") shall consist of one or more of the following components: walkways, ramps, curb ramps (excluding flared sides) and landings, blended transitions, crosswalks, and pedestrian overpasses and underpasses. Elevators, platform lifts, stairways and escalators shall not be part of a path. All components of a path shall comply with the applicable portions of these Specifications.

6-12.02.A(2) Continuous Width

Unless otherwise approved by the Agency, the minimum continuous and unobstructed clear width of a path shall be five feet (5'), exclusive of the width of the pedestrian barricades and channelizing devices. If the alignment of the temporary path does not allow for a minimum continuous and unobstructed clear width of five feet (5'), the width may be reduced to four feet (4') upon the written approval of the Agency. Where a path turns or changes direction, it shall accommodate the continuous passage of a wheelchair or scooter. As with street or highway design for vehicles, additional maneuvering width or length may be needed along curved or angled routings, particularly where the grade exceeds five percent (5%). Individual segments of paths shall have a minimum straight length of four feet (4').

California Code of Regulations, Title 24, Part 2, Chapter 11B, Section 1133B.8.6, and Americans with Disabilities Act Accessibility Guidelines (ADAAG) 4.4 "Provisions for Protruding Objects" apply across the entire width of the path.

6-12.02.A(3) Width at Passing Spaces

Paths that are less than five feet (5') in clear width shall provide passing spaces at intervals of two hundred feet (200') maximum. Paths at passing spaces shall be five feet (5') wide for a distance of five feet (5').

6-12.02.A(4) Walkway Grade and Cross Slope

Unless otherwise approved by the Agency, the pathway surface shall be level and navigable and shall not have a slope greater than twelve to one (12:1) or a cross slope greater than two percent (2%). Where the walkway of a pedestrian access route is contained within a street or highway border, its grade shall not exceed the general grade established for the adjacent street or highway.

6-12.02.A(5) Surface

Unless otherwise approved by the Agency there shall be no surface discontinuities. Additionally, the installation of gratings in the surface of the pathway is not acceptable. All non-slip surfaces shall have a surface static coefficient of friction of 0.50 per ASTM C 1028.

The surface of the path shall be firm, stable, and slip resistant. The pathway shall be constructed of concrete, asphalt, non-slip plywood or non-slip steel plate. Non-slip plywood used for a walkway surface shall have a minimum thickness of one and one-eighth inch (1-1/8") and shall be thoroughly supported to provide a firm stable surface. Compacted soil or aggregate base material is not considered an acceptable surface.

Surface discontinuities shall not exceed one-half inch (1/2") maximum. Changes in level up to one-quarter inch (1/4") may be vertical and without edge treatment. Vertical discontinuities between one-quarter inch (1/4") and one-half inch (1/2") maximum shall be beveled at one to two (1:2) minimum. The bevel shall be applied across the entire level change. Changes in level greater than one-half inch (1/2") shall be accomplished by means of a ramp that complies with California Code of Regulations, Title 24, Part 2, Chapter 11B, Section 1127B.5 and ADAAG 4.7.

6-12.02.A(6) Location

Sidewalks at the construction location may be closed with adequate detours. Detours shall not increase the path of travel by more than five hundred feet (500'). Detour routes shall be limited to existing sidewalks, private properties (see above requirements) and crossings at roadway intersections. To the maximum extent feasible, the alternate circulation path shall be provided on the same side of the street as the disrupted route. Where it is feasible to provide a same-side alternate circulation path and pedestrians will be detoured, Section 6D.02 of the current California Manual on Uniform Traffic Control Devices (CA/MUTCD) specifies that the alternate path provide a similar level of accessibility to that of the existing disrupted route. This may require the installation of temporary accessible pedestrian signals (APS), curb ramps, or other accessibility features.

Pedestrians may be detoured onto private property only if written permission from the property owner is obtained along with documentation indicating that the County would not be liable in the event of an accident.

6-12.02.A(7) Protection

Where the temporary alternate circulation path is exposed to adjacent construction, excavation drop-offs, traffic, or other hazards, it shall be protected with a pedestrian barricades, channelizing devices, concrete barriers, or other TTB devices necessary to provide clear guidance for pedestrians.

When it is necessary to block travel at the departure curb to close a crosswalk that is disrupted by excavation, construction, or construction activity, care must be taken to preserve curb ramp access to the perpendicular crosswalk. This may require additional pedestrian channelization if only a single diagonal curb ramp serves the corner.

Figures 6H-28 and 6H-29 of the CA/MUTCD specify notification signage for pedestrian closings and detours. Audible signage triggered by proximity switches should be used whenever possible to provide information to pedestrians who are unable to properly see print signs, such as the blind and visually impaired.

Pedestrians routed into normal bicycle or automobile traffic lanes must be protected from traffic via pedestrian barricades channelizing devices, concrete barriers, or other TTB devices that are continuous, immovable, stable, rigid, and visible and free of splintered, jagged, and sharp surfaces/edges. Caution tapes, cones, drums, sawhorses, and A-frames are not considered effective substitutions for this purpose.

Pedestrians routed onto the roadway shoulder at locations not normally traveled by bicycles or locations where bicycle traffic has been relocated must be protected with a continuous, immovable, stable, rigid, and visible barrier that is free of splintered, jagged, and sharp surfaces/edges. Pedestrian barricades and channelizing devices shall consist of a wall, fence, or enclosures specified in section 6F-58, 6F-63, and 6F-66 of the CA/MUTCD. Caution tape, cones, drums, sawhorses, and A-frames are not allowed for this purpose. Barriers shall have a bottom or lower continuous rail two-inches by six-inches (2"x6") secured in a vertical orientation and a two-inch by six-inch (2"x6") minimum upper rail at least thirty-six inches (36") above the ground or walkway surface. Barrier support members shall not protrude beyond the barricade face into the pedestrian access route or alternate circulation path.

The pathways shall be well marked with retroreflective materials to assist both visually impaired pedestrians and vehicles traveling at times when visibility may be limited. The retroreflective materials shall be color yellow conforming to Federal Color No. 33538, as shown in Table IV of Federal Standard No. 595B, "Colors Used in Government Procurement".

During working hours, at least one worker shall be assigned the responsibility to escort elderly, disabled or any other pedestrians in need of assistance through and/or around the construction site. The worker assigned this responsibility may also participate in other construction activities; however, the assigned worker shall be aware of his or her primary responsibilities for providing this assistance.

6-12.02.A(8) Lighting

The pathway is to be continuously and uniformly illuminated at all times. When existing artificial lighting does not continuously and uniformly illuminate the path or there is no artificial lighting, there shall be temporary lights installed. Minimum illumination shall be ten (10) foot candles. The Contractor shall employ means to distinguish the path from its surroundings. Factors such as shadows cast by lighting sources, surface reflectance, and the uniformity of the color and texture of the materials making up the walking surface must be considered.

6-12.02.A(9) Holes in the Permanent Path of Travel

When there is a hole or opening, e.g. manhole cover, within the permanent pathway of travel, there shall be a continuous, immovable, stable, rigid, and visible pedestrian barrier surrounding the boundary of the opening that is free of splintered, jagged, and sharp

surfaces/edges. Unless otherwise approved by the Agency, there shall be a five-foot (5') clear pathway around the pedestrian barrier. The pedestrian barrier/pathway must also meet all requirements as listed above.

6-12.03 Written Notification To Residences and Businesses

The Contractor shall notify, in writing, residents and business establishments along the route of the Work at least ten (10) Working Days prior to road closures and at least three (3) Working Days prior to disruption of ingress and egress. The notice provided to the residences or businesses shall include, at a minimum, schedule of closures with estimated closure times, closure location, alternate route or detour, and name and twenty-four (24) hour phone number of a contact person employed by the Contractor.

The Contractor shall notify, in writing, residents and business establishments along the route of the Work at least three (3) Working Days prior to placing parking restrictions within the County right-of-way. The notice provided to the residences or businesses shall include, at a minimum, schedule of parking restrictions with estimated times, location, and a name and twenty-four (24) hour phone number of a contact person employed by the Contractor.

6-12.04 Access To Driveways, Houses and Buildings

Access and passable grades shall be maintained at all times for business establishments during construction. Safe and passable pedestrian, bicyclist, and vehicular access shall be provided and maintained to fire hydrants, homes, commercial and industrial establishments, churches, schools, parking lots, service stations, motels, fire and police stations, hospitals, and establishments of similar nature. Access to these facilities shall be continuous and unobstructed unless otherwise approved. Ramps and driveways shall not have "lips" or elevation differences greater than three-eighths of an inch (3/8") or one (1) cm.

When abutting property owner's access across the right-of-way line is to be eliminated, repaired, or replaced under the Contract, the existing access shall not be closed until the replacement access facilities are completed and functional.

6-12.05 Property Damage

Any property damage caused by the Contractor shall be repaired at the Contractor's expense to the satisfaction of the Agency.

6-12.06 Erection of Signs To Facilitate Passage of Vehicles

The Contractor shall erect such warning and directional signs as necessary or as directed by the Agency for facilitating the passage of public traffic through or around the Work and the approaches. All warning and directional signs shall comply with Section 6-13, "Public Safety and Traffic Control", in this Section of these Specifications; Section 12, "Construction Area Traffic Control", of these Specifications; and the California Manual of Uniform Traffic Control Devices (CA/MUTCD).

6-12.07 Traffic Obstructions, Delays and Inconveniences

All public traffic shall be permitted to pass through the Work and the Contractor shall conduct operations that offer the least possible obstruction, delay, and inconvenience to the public, except where authorized by the Agency or in an emergency situation where access may endanger the public. See Section 7-8 Emergency Repairs for criteria on what constitutes an emergency.

6-12.08 Work On Private Property

The Contractor must obtain written permission from the owner of any privately owned property prior to beginning any work, storing materials or otherwise conducting any operations on said property. The written approval from the property owner must be on file with the Agency before any operations will be permitted on said property.

6-12.09 Hazardous Conditions Created

Whenever the Contractor's operations create a condition hazardous to pedestrians, bicyclists, or the traveling public, the Contractor shall, at the Contractor's own expense, furnish, erect and maintain any fences, covers, temporary traffic barriers, barricades, lights, signs and other devices necessary or as directed by the Agency to prevent accidents or damage or injury to the public or property.

6-13 PUBLIC SAFETY AND TRAFFIC CONTROL**6-13.01 General**

All traffic controls shall be installed in accordance with the latest edition of the "California Manual of Uniform Traffic Control Devices" (CA/MUTCD), NCHRP Report 476 (nighttime traffic controls), the approved Traffic Control Plan (TCP), the project special provisions, these standard specifications, and all other supporting or referenced standards, documents or manuals.

6-13.02 Responsibility For Safety

It is the Contractor's responsibility to provide for public safety and traffic control. The Agency may review the Contractor's operations and inform the Contractor if an unsafe or hazardous condition is observed. The Contractor may be directed verbally or via Field Instruction, letter, or other means to abate the hazard. The Contractor must comply with all directives for hazard abatement immediately and within the timeframe imposed by the Agency.

6-13.03 Passage of Emergency Vehicles

The Contractor shall provide for the uninterrupted passage of emergency vehicles through the Work zone at all times regardless of the controlled traffic conditions in place at the time.

6-13.04 Furnishing, Installing, and Maintaining Traffic Controls

Signs, lights, barriers, fences, barricades, and other facilities shall be furnished, erected and maintained by the Contractor to provide an adequate warning to the public of dangerous conditions to be encountered during construction at all hours of the day or night. Warning and directional signs shall be erected and maintained as required by the Agency and by law. All traffic controls shall be installed as required by this Section and Section 12, "Construction Area Traffic Controls", of these Specifications and as required by the CA/MUTCD.

6-13.04.A Temporary Traffic Barriers (TTB)

Temporary traffic barriers (TTB) are devices designed to help prevent penetration by vehicles while minimizing injuries to vehicle occupants, and are designed to protect workers, bicyclists, and pedestrians. The four primary functions of temporary traffic barriers are:

- To keep vehicular traffic from entering work areas, such as excavations or material storage sites;
- To separate workers, bicyclists, and pedestrians from motor vehicle traffic;
- To separate opposing directions of vehicular traffic; and
- To separate vehicular traffic, bicyclists, and pedestrians from the work area such as false work for bridges and other exposed objects.

A Barrier is required when any of the following conditions exist:

- A. Excavations – The near edge of an excavation is 15 feet or less from the edge of the traveled way, except:
1. Excavations covered with steel plates or concrete covers of adequate thickness to prevent accidental entry by traffic or the public
 2. Excavations less than 1' deep
 3. Excavations with side slopes, where the slope is shallower than 4:1 (horizontal: vertical)
 4. Excavations protected by existing barrier or railing

- B. Unprotected Unyielding Obstacles – Whenever the work includes the installation of a fixed obstacle together with a protective system, such as bridge falsework or a sign structure together with protective railing, and the Contractor elects to install the obstacle prior to installing the protective system; or whenever the Contractor, for their convenience and with permission of the Agency, removes a portion of an existing protective railing at an obstacle and does not replace such railing complete in place during the same day. Or, whenever the roadway alignment changes and subsequently encroaches onto an existing fixed obstacle such that it creates a significant hazard to the traveling public.
- C. Storage Areas - Whenever unyielding material or equipment is stored within 15 feet of the traveled way and such storage is not otherwise prohibited by the Special Provisions or the Agency.

Barriers shall be installed in full compliance with the following:

1. Barrier segments must be approved by the Agency through a Certificate of Compliance before being placed in the public right-of-way.
2. Barrier segments shall meet the requirements of NCHRP Report 350, Test Level 3 (TL-3) criteria, unless otherwise approved by the Agency.
3. The Barrier System shall be of sufficient length to completely shield the entire drop-off area or obstacle
4. Exposed surfaces of new and used Barrier segments shall be freshly coated with white paint prior to their first use on the project and periodically repainted to remove marks from vehicle strikes and graffiti when requested by the agency.
5. Barrier segments shall be in new or like-new condition free of chips, cracks, or structural steel deformation or loss that may compromise the designed characteristics of the segment. Connecting eyes shall be straight and undamaged. Rejection of Barrier segments is at the sole discretion of the Agency.
6. Maintain a minimum 2 foot offset between the traveled lane and the Barrier and between the excavation and the Barrier. If the excavation/barrier minimum separation is not possible, and lateral movement of the Barrier cannot be tolerated, the Barrier shall be anchored to the road surface as indicated in Detail T3 of the Caltrans Standard Plans. Note: Placing the Barrier on a grout bed can provide a mechanical interlock to prevent movement and may be used as an alternative method for anchoring if approved by the Agency.
7. Barriers shall be set on a firm, stable foundation graded to provide a uniform bearing throughout the entire length of the segment.
8. Abutting Barrier ends shall be placed and maintained in alignment without substantial offset to one another.
9. Adjacent Barrier segments shall be properly connected as indicated on Detail T3 of the Caltrans Standard Plans.
10. Where a Barrier is placed on curves and radii that are too severe to properly connect panels, the Barrier shall be backed continuously with earth fill as indicated on Detail T3 of the Caltrans Standard Plans.
11. The approach end of the Barrier shall be tapered away from the road at a 15:1 or flatter flare and shielded from traffic through one of the following methods:
 - I. Bury the end of the Barrier in a cut slope
 - II. Extend the end of the Barrier to a point 15 feet or more beyond the edge of the traveled way (ETW)
 - III. Install a crash cushion array at the approach end of the Barrier meeting the requirements of Section 6-13.04.B of these Standard Construction Specifications.
12. If a Barrier is to be placed within 10 feet of the traveled way the contractor must provide Barrier reflectors fastened to each segment and evenly spaced using one of the following methods:

- I. High strength, two component, quick-set bonding epoxy
- II. A mechanical system (stainless steel, galvanized or zinc plated) consisting of an internal thread flush anchor, hex bolt, lock and flat washers.

The retro-reflective sheeting shall be white (silver) or yellow (amber) in color and applied to one or both sides of the reflector as necessary based on Barrier application (traffic separation). The number and placement of reflectors may vary depending on site conditions.

- 13. A Caltrans Type P Marker shall be installed at each end of the Barrier system, and the front of the crash cushion array, where installed adjacent to a two-lane, two-way highway and at the end facing traffic, or the front of the crash cushion array, of a Barrier system installed adjacent to a one-way roadbed. If the Barrier is placed on a skew, a Type P Marker shall also be installed at the end of each skew point nearest the traveled way.
- 14. The Barrier System shall be removed from the right-of-way when no longer required on the project.

6-13.04.B Temporary Vehicle Impact Attenuators (Crash Cushions)

Temporary Vehicular Impact Attenuators (TVIA, crash cushions, crash cushion array), shall be accepted as crashworthy devices by the FHWA and shall meet the requirements of NCHRP Report 350, Test Level 3 (TL-3) criteria.

Unless otherwise approved by the Agency, the Caltrans TS-14 array shall be used. Manufacturer-designed arrays may be permitted if approved in advance by the Agency.

A crash cushion array shall be furnished, installed and maintained as shown on the project plans and/or TCP, the Caltrans Standard Plans, and in conformance with the manufacturer's recommendations and the following:

1. If a fixed object or the approach end of a Temporary Traffic Barrier (TTB) is less than fifteen feet (15') from the traveled way, a temporary crash cushion array is required unless otherwise approved by the Agency.
2. Prior to installation, the Contractor shall provide the Agency with:
 - a. Three copies of the manufacturer's most current product manuals covering installation and maintenance of the modules.
 - b. Certification that the TTB complies with these Standard Specifications and any Special Provisions.
 - c. Additional hardware, tools, or documentation supplied by the manufacturer.
3. All crash cushions shall be in new or like new condition when installed.
4. Any crash cushion that becomes crushed or otherwise damaged so that it will not perform its intended purpose shall be immediately repaired or replaced by the Contractor within 24 hours after the damage occurs. The Contractor shall furnish adequate means, acceptable to the Agency, to provide safe control of traffic until the crash cushion has been repaired or replaced.
5. All modules shall be filled to the proper level (based on placement within the array) and with the appropriate material (generally ASTM C-33 Concrete Sand). Any module found to be improperly filled or filled with unacceptable material (e.g., cobbles, aggregate base, trash or other non-approved materials) shall be immediately removed from the roadway and/or refilled with the appropriate material.
6. Cone inserts, where required, shall be placed in each module and in the proper orientation.
7. Lids shall be correctly fastened and maintained and water and other elements shall not be allowed to enter the module.
8. When a temporary crash cushion array is no longer required, all modules shall be removed from the right-of-way and become the property of the Contractor. When a crash cushion array is required after the final stage of a project, or where designed as permanent, the crash cushion array will remain in place and become the property of the Agency.

9. The surface on which a crash cushion array is installed shall be smooth, flat, and compacted (usually asphalt). Grading work, if required, shall be completed prior to installation.
10. The approach end of a temporary crash cushion array shall have a Caltrans P-marker installed to delineate the approach end to oncoming traffic.
11. Temporary crash cushion arrays shall not encroach into the traveled way.
12. The Contractor shall repair any pavement damaged by the installation or removal of a crash cushion array.

6-13.05 Inadequate Traffic Controls and After-Hour Maintenance and Repairs

Should the Contractor appear negligent in furnishing and maintaining sufficient traffic control devices or protective measures or fail to provide flaggers as necessary to control traffic, the Agency may direct the Contractor, at the Contractor's expense, to abate the hazard. See Section 4-5, "Field Instructions or Other Written Directives", of these Specifications regarding requirements for compliance with directives.

Should the Agency point out the inadequacy of warning devices and protective measures, that action shall not relieve the Contractor from responsibility for public safety or abrogate the obligation to furnish and pay for these devices and measures.

Should the Contractor fail to properly furnish or maintain traffic controls, or correct a hazard caused by inadequate or inappropriate traffic control, the Agency will abate the hazard. All Agency costs to abate the hazard shall be reimbursed by the Contractor or deducted from the progress payment. If the Contractor is not available to perform after-hour maintenance and repair to traffic control devices, the Agency will correct the situation and deduct all costs from the progress payment.

6-13.06 Competent Flaggers

The Contractor shall provide flaggers to control traffic when necessary or requested by the Agency. All flaggers shall be trained as required by Cal/OSHA regulations and shall be prepared to provide verification of such training to the Agency when requested. See Section 12-2, "Flagging", of these Specifications for additional information. If in the opinion of the Agency a flagger is not operating in a manner that is conducive to the safe passage of vehicles, bicyclists and/or pedestrians, the Contractor will be directed to immediately replace such flagger.

6-13.07 Construction Signs

The Contractor is responsible for supplying, installing and maintaining all construction signs and posts. Regulatory signs or guide signs will be supplied, erected and maintained by the Agency, but must be protected from damage from construction activities by the Contractor through the duration of the project. See Section 12-3.08, "Construction Area Signs", of these Specifications for additional information.

6-13.08 Temporary Bridging of Excavations and Trenches

1. The use of steel plates shall be approved by the Agency prior to installation.
2. Steel plates, in the roadway, shall have the name and 24 hour emergency telephone number of the contractor responsible for maintaining the plates stenciled on the roadway pavement adjacent to the plates. Painted text shall be in white lettering, using chalk based paint. The text shall be neatly stenciled lettering, a minimum five inches (5") in height and shall be maintained in a neat and legible condition for the duration of plate placement.
3. Steel plate width and thickness requirements:
 - a. 18" or less in width - minimum thickness of $\frac{3}{4}$ "
 - b. > 18" in width to 72" in width - minimum thickness of 1".
 - c. The thickness of steel plates for trench widths exceeding 72" shall be established through an analysis completed by a licensed professional engineer.

4. Whenever steel plates are used to cover an excavation where the related work is to take place for longer than two (2) weeks, the steel plates must be inlaid or recessed into the existing pavement, milling out the pavement surface to ensure that the top of plate elevation matches the existing elevations of the adjacent pavement surface. Steel plates must be large enough to allow a minimum of one foot (1') of bearing on all sides of the trench.
5. Whenever steel plates are used to cover an excavation where the related work is to take place for less than two (2) weeks they may be placed on top of the asphalt with transitional ramps of MC250 asphalt mix (cutback) against all vertical edges of the plates. All ramping must be accomplished to provide a minimum angle of approach of twelve to one (12:1), providing a smooth, gradual transition between the pavement and the plate. Steel plates shall be anchored to the roadway surface with pins or spikes on the four (4) outermost corners. Additional pins shall be placed as necessary to assure the steel plates are secured. Pins shall be installed such that they do not protrude above the plate surface any more than is necessary to anchor the plate and shall not create a hazard for the motoring or pedestrian public. Steel plates should be welded together to prevent shifting/bouncing where necessary. The steel plates shall extend beyond the edge of the trench a minimum of 18", but no more than 30" on all sides. No corner of any steel plate shall protrude into the traveled way as to create a hazard to the motoring public.
6. Steel plates shall have a nonskid surface static coefficient of friction of 0.35 per California Test 342 for all steel plates within traveled roadway, and 0.50 per ASTM C 1028 for those steel plates in pedestrian crosswalks or accessible areas. When required by the Agency, the Contractor shall certify in writing to the Agency that steel plates to be used in the Work meet the required static coefficient of friction.
7. The length of a series of plates running parallel to traffic wheel paths shall not exceed 30' unless approved by the Agency or noted in the TCP or contract drawings.
8. Trench walls and adjacent soils shall be sufficiently stabilized prior to the use of steel plates for bridging.
9. For conditions that require a support structure (wide excavation with multiple plates), the system must be designed by a registered professional engineer and submitted to the Agency for approval before use.
10. Where the Street surface is uneven, plates shall be bedded on MC250 asphalt mix (cutback).
11. Steel plates shall be installed to operate with minimum noise levels as indicated in Sacramento County Code, Section 6.68, "Noise Control".
12. All steel plates within the right-of-way, whether used in or out of the traveled way, shall be without deformation (e.g., chains, attachments, weldments, or irregularities that can constitute a hazard).
13. Steel plates shall not remain on the roadway for longer than seven (7) calendar days, unless otherwise approved by the Agency.
14. BUMP (W8-1) warning signs shall be properly posted and maintained in advance of all roadway plates placed on the surface of the pavement. ROUGH ROAD (W8-8) warning signs shall be properly posted and maintained in advance of all steelplates that are inlaid.
15. The Contractor is responsible for maintaining the steel plates until the roadway is properly back-filled and patched to allow for the safe passage of vehicles.
16. The Contractor shall be responsible for any damages or injuries which may occur as a result of the plates being placed in the roadway. The Contractor must reimburse the Agency any cost for emergency repairs.

In sidewalk areas, one and one-eighth inch (1-1/8") plywood with a nonskid surface with a static coefficient of friction of 0.50 per ASTM C 1028 may be substituted for steel plating where

the excavation is less than two (2) feet deep and when authorized by the Agency. Transitional ramps of MC250 asphalt mix (cutback) shall be installed against vertical edges in the direction of pedestrian traffic (both up and down-stream). All ramping must be accomplished to provide a minimum angle of approach of twelve to one (12:1), providing a smooth, gradual transition between the sidewalk and the plate. Plywood shall extend beyond the edge of the trench and any overlap of pieces shall be a minimum of 18". The plywood shall not protrude past the sidewalk edge.

Vehicular travel over backfilled but unpaved excavations will not be allowed. The Contractor shall provide a temporary surface suitable for driving consisting of at least two inches (2") of plant mix asphalt over six inches (6") of aggregate base, concrete slurry (completely cured), or traffic plates placed over the excavated area of sufficient width and thickness as indicated in this Section.

6-13.09 Entering and Leaving the Construction Zone

Construction equipment shall enter and leave the roadway by moving in the direction of public traffic. All movements of workmen and construction equipment on or across lanes open to public traffic shall be performed in a safe manner that will not endanger the workmen or the public. When leaving a work area and entering a roadway carrying public traffic, the Contractor's equipment operator shall yield to public traffic.

6-13.10 Existing Traffic Signal and Lighting Systems, Signs and Pavement Markings

Existing traffic signal and highway lighting systems shall be kept in operation during progress of the Work. When traffic signal shutdown is permitted by the Agency, the Contractor shall notify the Agency at least five (5) Working Days prior to shutdown. Traffic signal detectors accidentally cut or damaged during construction shall be repaired or replaced by the Contractor at the Contractor's expense and be operational within seventy-two (72) hours. When traffic signals are approved for shutdown, the Contractor shall control traffic by use of flaggers as directed by the Agency. "STOP" signs will not be permitted at these locations.

Existing signs and pavement markings shall be maintained by the Contractor and shall not be removed or altered without Agency approval.

6-13.11 Bus Stops

If construction operations will obstruct a bus stop, the Contractor shall notify Sacramento Regional Transit (RT) forty-eight (48) hours in advance of beginning that portion of the Work and make provisions agreeable to RT to provide an alternate location where people can safely board the bus.

6-13.12 Dust

Water or dust palliative shall be applied if ordered by the Agency for the alleviation or prevention of dust nuisance caused by the Contractor's operations as provided in Section 17, "Dust Control", of these Specifications.

6-13.13 Removal of Spillage From Roadway

The Contractor shall immediately remove any spillage resulting from hauling operations along or across any public traveled way.

6-13.14 Road Edge Drop-off

In all cases, construction operations shall be conducted to minimize the time, depth, and length of drop-offs to which motorists are exposed.

For drop-offs greater than fifteen hundredths of a foot (0.15') and within fifteen feet (15') of travel lanes, the Contractor shall provide traffic delineation, warning and protection in accordance with the treatments indicated in Table 6-1 and the following, unless otherwise shown in the Contract documents.

Delineation used for road edge drop-off applications (drop-offs greater than 0.15 feet deep) must be retro-reflective tubular markers or vertical panels. All delineators must comply with

Sections 6F.59-62 of the CA/MUTCD. Drums with retro-reflective banding may be used where adequate space is available. Delineation shall be “glue-down” type when requested by the Agency. Delineation shall be spaced as required by the CA/MUTCD and Table 6-1 of these Specifications. All delineators shall be located within twenty-four inches (24”) of the traveled edge. Delineators used to separate opposing traffic flows shall be yellow with yellow retro-reflective banding.

Unless indicated otherwise in the plans or permitted in writing by the Agency, delineation and/or temporary traffic barriers used to protect drop-offs shall not protrude into the traveled way to the extent that they reduce the authorized lane width shown on the Traffic Control Plan or Contract Drawings.

Channelizing devices may be placed in the drop-off area for depths up to six inches (6”). For drop-offs greater than six inches (6”), the channelizing devices must be placed entirely on the paved surface.

For drop offs greater than one-tenth of a foot (0.10’), a transition ramp shall be used to mitigate edge drop-off conditions. The ramp shall be constructed from the pavement surface to the surface of the excavated area at a six to one (6:1) or flatter slope. Ramp material shall be erosion resistant, fully compacted, and compatible with the material in the excavated area. Where a ramp is used, the following requirements shall apply as an alternative to the requirements indicated in Table 6-1. The ramp shall be demarcated by placing delineators along the traffic side. LOW SHOULDER (W8-9) or UNEVEN LANES (W8-11) warning signs shall be erected and maintained by the Contractor. Spacing for delineation and warning signs shall be as indicated in the CA/MUTCD.

Whenever barrier protection is required by Table 6-1, the Contractor shall provide a Temporary Traffic Barrier (TTB) in full compliance with these Specifications.

When an edge drop-off treatment is required, and/or a ramp is selected as a mitigating measure, the thickness, type of material to be used and slope requirements and all other relevant details shall be indicated on the Contractor’s submitted TCP.

TABLE 6-1
PAVEMENT EDGE DROP-OFF

CONDITIONS		TREATMENT		
Distance from edge of traveled way (D)*	Edge Drop-off Depth (d)**	Delineation	Warning Signs	Barrier Protection
D ≤ 8 ft	0.15 ft < d ≤ 0.25 ft	Tubular Markers <100 ft spacing	W8-9 or W8-11 (as appropriate) < 2,000 ft spacing	Not Required
D ≤ 8 ft	d > 0.25 ft	Tubular Markers <100 ft spacing	C27 & C31A (alternately set) < 2,000 ft spacing	Required if excavation is ≥ 1 foot deep. (see Section 6-13.04.A)
8 ft < D ≤ 15 ft	0.25 ft < d ≤ 2.5 ft	Tubular Markers <100 ft spacing	C27 < 2,000 ft spacing	Required if excavation is ≥ 1 foot deep. (see Section 6-13.04.A)
D > 15 ft	0.5 ft < d ≤ 2.5 ft	Tubular Markers <200 ft spacing	C27 < 2,000 ft spacing	Not Required
D > 15 ft	d > 2.5 ft	Based on engineering judgment or studies	Based on engineering judgment or studies	Not Required

*The edge of the traveled way is defined as the actual road edge when not striped or the inside edge of lane limit line for striped roadways. In other words, the traveled way is the portion of the roadway for the movement of vehicles, exclusive of the shoulders, berms, sidewalks, bike lanes, and parking lanes.

**The edge drop-off depth is defined as the change in elevation when a shoulder is lower than the adjacent traveled lane at the edge of the lane, on the shoulder, or at the edge of the shoulder.

WARNING SIGNS:

W8-9 (LOW SHOULDER) --- used to warn of a shoulder condition where there is an elevation difference of less than 3" between the shoulder and the travel lane.
W8-11 (UNEVEN LANES) --- used during operations that create a difference in elevation between adjacent lanes that are open to travel of 2" or more.
C-27 (OPEN TRENCH) --- used in advance of open trenches in/or adjacent to roadway.
C-31A (NO SHOULDER) --- used where no earth, gravel or paved shoulders are available for vehicles to pull off the roadway.
W8-4 (SOFT SHOULDER) --- used to warn of a soft shoulder condition.
W8-9a (SHOULDER DROP OFF) --- used when an unprotected shoulder drop-off, adjacent to the travel lane, exceeds 3 inches in depth for a significant continuous length along the roadway.

6-14 TRAFFIC CONTROL PLANS (TCP)

6-14.01 Traffic Pattern Changes

The Contractor shall notify the Agency in advance of the Contractor's desire to change any existing traffic patterns. Traffic lanes for public use shall be at least ten feet (10') in width. Whenever feasible an additional four feet (4') shall be provided for a bicycle lane. If it is not feasible to provide a separate bicycle lane, the Contractor shall post signage before the construction area stating, "SHARE the Road with Bicyclists". Additionally, when the lane is shared, the Contractor shall post signage for a maximum speed limit of 25 MPH in the shared lane. For traffic pattern changes that do not require a road closure, the Contractor shall provide the Agency with a minimum of five (5) Working Days advance notification, unless otherwise approved or deemed an emergency lane closure by the Agency. For all road closures, the Contractor shall provide the Agency with a minimum of twenty (20) Working Days notice prior to the desired closure date, unless otherwise approved or deemed an emergency road closure by the Agency.

6-14.02 Traffic Control Plans (TCP)

A TCP is required for all work performed within the public right-of-way. Each TCP shall be developed in accordance with the California Manual on Uniform Traffic Control Devices (CA/MUTCD). The TCP must clearly depict sequencing of the Work, the portion of the Work to be performed during each phase, and the traveled way that will be utilized by all movements of both vehicular and pedestrian traffic during each phase.

If a TCP is included in the Contract documents, the Contractor may choose to submit that TCP if the submittal is signed and stamped by the Contractor's traffic control professional (as defined in Item 5 below) verifying that the TCP meets all of the required elements and is appropriate for the Contractor's means and methods of completing the Work.

The TCP shall be provided to the Agency for approval a minimum of five (5) Working Days in advance of rudimentary lane closures and twenty (20) Working Days in advance of complex lane closures and road closures. The Contractor shall be solely responsible for submitting any proposed TCP or modification and obtaining the Agency's approval. Copies of the approved TCP shall be onsite at all times.

Unless otherwise approved by the Agency, the TCP shall:

1. Be drawn on 24" x 36" or 11" x 17" sheets
2. Be legible, using either ink or computer generated graphics
3. Show all proposed construction signs, barricades, flaggers, delineation and other traffic control devices required to provide appropriate traffic control for the Work
4. Indicate the name, address and telephone number of the person responsible for development of the TCP
5. Be signed and stamped by a Registered Civil Engineer, Registered Traffic Engineer, ATSSA certified Traffic Control Supervisor, C-31 Licensed Contractor, or other qualified individual
6. Include the name and telephone number of the 24-hour contact person representing the Contractor
7. Indicate the Contract number, encroachment permit number, or the name of the improvement project
8. Indicate the duration of the construction work (calendar days) and the requested work hours (example -- 8:00am to 3:30pm)
9. Indicate a north arrow and scale
10. Show and label all streets in the vicinity
11. Show all existing traffic signals and traffic control signs and indicate any proposed operational changes (e.g., placing signal lights on flash, or covering signal lights temporarily)

12. Show existing striping, pavement markings, painted crosswalks and bike lanes. Include total roadway widths, individual lane widths, bike lane widths, median dimensions, etc.
13. Show existing curbs, gutters, sidewalks, driveways and intersections in the construction work zone including areas affected by taper transition
14. Indicate posted speed limits
15. Show location and dimensions of the construction work zone
16. Show staging area and materials storage area, as appropriate
17. Label all taper lengths and widths, delineator spacing and sign spacing
18. Include a legend to define all symbols and designate them with CALTRANS nomenclature
19. Show all parking restriction zones and signs, as appropriate, and
20. Indicate bicycle and pedestrian routes and detours, including any signs and barricades to be used to direct pedestrians or bicyclists through or around the Work.

6-15 BARRICADING OPEN TRENCHES

Any excavation permitted by the Agency to be left open shall be barricaded with Type I, Type II, or Type III barricades with retro-reflective tape and flashers, as approved or directed by the Agency. Signs stating "OPEN TRENCH" shall be posted when requested by the Agency. All open excavated areas shall be barricaded with at least two (2) Type III barricades at the end of the excavation that faces oncoming traffic. Any excavation within eight feet (8') of the traveled way, not protected by a barrier approved by the Agency, as indicated in Section 6-13.14 "Road Edge Drop-off" of these Standard Specifications, shall be backfilled at the end of the work shift provided with a transitional ramp meeting the requirements of Section 6-13.14, or plated in accordance with Section 6-13.08, "Temporary Bridging of Excavations and Trenches", in this Section of these Specifications.

6-16 EXISTING UTILITIES

6-16.01 General

The Contractor shall coordinate and fully cooperate with the Agency and utility owners for the location, relocation, and protection of utilities. The Contractor's attention is directed to the existence of utilities, underground and overhead, necessary for all buildings in the Work area. It is the responsibility of Contractor to arrange for all utilities necessary for the Work site. The Contractor shall arrange with utility owners for the location of service lines serving these buildings in advance of the actual construction and for the relocation of such facilities, if necessary, by the utility owner or the Contractor.

Coordination activities shall include communication with all utilities with facilities potentially in conflict with the Work, and working cooperatively with those utilities to schedule any required relocation work by the utilities or their contractors. The Contractor shall provide schedule updates of any change to the schedule of the Work to all utilities every two weeks. Copies of all communications between the Contractor or Subcontractors and the utilities shall be provided to the Agency if requested.

Section 4216.4 of the Government Code REQUIRES that the excavator expose marked underground utilities by hand BEFORE using power equipment, UNLESS documented notice is provided to the facility owner AND the facility owner agrees to allow power-operated or power-driven equipment, as specified in said Section 4216.4 of the Government Code. Within two weeks of the Notice to Proceed, the Contractor shall perform the following work:

- Mark the entire area to be excavated, as defined in Section 6-16.04, "Underground Service Alert (USA North)", of these Specifications.
- Contact USA North to mark all existing utilities within the area marked to be excavated
- Pothole by hand (except as allowed in Section 4216.4 of the Government Code as referenced above) to locate all existing facilities, including existing utility services,

laterals, or appurtenances whenever their presence can be inferred from other visible facilities such as buildings, meters, junction boxes, valves, service facilities, identification markings, and other indicators on or adjacent to the Work. Utility facilities that are aligned with the proposed location of contract excavation work, such that the marked location of the existing utility facilities lies within twenty four inches from the outside edge of the facility for a longitudinal distance of fifty feet or more, shall be potholed at fifty-foot intervals, unless otherwise directed by the Agency

Upon determination of the existence of any conflicting utility, the Contractor shall promptly coordinate any necessary utility relocation work as required herein. The Contractor shall provide a written statement to the Agency as to the existence of any conflicting utility facilities and information about utility coordination and schedules for utility relocations both above and below the surface of the ground, if any, within three weeks of the Notice to Proceed.

6-16.02 Maintenance and Protection

Unless otherwise shown or specified in the Contract, the Contractor shall maintain in service all drainage, water, gas, sewer lines, power, lighting, telephone conduits, and any other surface or subsurface utility structure that may be affected by the Work. However, the Contractor, for convenience, may arrange with individual owners to temporarily disconnect service lines or other facilities along the line of the Work. The cost of disconnecting and restoring such utilities shall be borne by the Contractor.

Unless otherwise specified in the Special Provisions, the Contractor shall protect all existing utilities on all projects being constructed, whether inside or outside of highway rights-of-way. The utility owner in these cases may elect to provide the necessary protective measures and bill the Contractor for the cost. "Existing utilities" includes traffic control devices, conduits, streetlights, and related appurtenances.

Existing utility facilities that are to be relocated, including traffic signals and light poles, shall be relocated prior to paving. No paving shall be performed around existing utility facilities that are to be relocated.

6-16.03 Exact Locations Unknown

The locations of existing utility facilities shown on the Plans are approximate and represent the best information obtainable from utility maps and other information furnished by the various utility owners involved. The Agency warrants neither the accuracy nor the extent of actual installations as shown on the Plans. There may be additional utilities on the property unknown to either party to the Contract. If, during the course of the Work, additional subsurface utilities are discovered, the Agency may make adjustments to the Work. Compensation for such adjustments will be in accordance with Section 9, "Changes and Claims", of these Specifications.

In accordance with Government Code Section 4215, the Agency will compensate the Contractor for the costs of locating, repairing damage not due to the failure of the Contractor to exercise reasonable care, removing, relocating or protecting existing main or trunk line utility facilities not indicated in the Plans and Specifications with reasonable accuracy, and for equipment on the Work necessarily idled during such work. In no event shall the Agency be liable for any further or additional costs resulting directly or indirectly from any such occurrence. Compensation will be in accordance with Section 9, "Changes and Claims", of these Specifications.

If the Contractor discovers utilities not identified in the Plans or Specifications, the Contractor shall immediately notify the Agency and the utility owner by the most expeditious means available and later confirm in writing. If the completion of the Work is delayed by failure of the Agency or the utility owner to remove, repair, or relocate the utility, such delay may be an unavoidable delay as defined and provided for in Section 7-12.02, "Unavoidable Delays", of these Specifications. Nothing herein shall preclude the Agency from pursuing any appropriate remedy against the utility for delays that are the responsibility of the utility. The Contractor shall

not be assessed liquidated damages for delay in completion of the Work for that portion of such delay as is caused by failure of the Agency or the owner of a utility to provide for the removal or relocation of existing utilities.

6-16.04 Underground Service Alert (USA North)

The Agency is a member of the Underground Service Alert (USA North) One-Call program. The provisions of Government Code Sections 4216 through 4216.9, inclusive, shall be followed.

Except in an emergency, the excavator (as defined by Government Code Section 4216) shall notify USA North at least two (2) Working Days, but no earlier than fourteen (14) Calendar Days, in advance of performing excavation work, as defined by Government Code Section 4216(b), including potholing, tree removals, earthwork, installation of underground facilities, trench excavation, roadway excavation, structural excavation, piling, installation of foundations, pole installations, boring and jacking, earth saw trenching, planting of trees, and exposing subsurface installation with hand tools before using any power-operated or power driven equipment. USA North can be reached by calling 811 or (toll free) 1-800-227-2600. For emergency repairs the excavator must contact USA North and the County operator at 916-875-6900.

Each phase of a project shall be called into USA North and continuing excavation reported every twenty-eight (28) Calendar Days. The excavator shall not call in to USA North the entire project boundaries or, on road construction projects, the entire length of the project. The excavator shall only request the marking of facilities within the area to be excavated within twenty-eight (28) Calendar Days of the call. USA North will provide an inquiry identification ("ticket") number to the person contacting the center. The USA North ticket number shall be available to the Inspector at the job site along with the date USA North was called. If the USA North notifications are not kept up-to-date, the excavation will be stopped, and a new two (2) Working Day notice will be required before continuing the excavation. If, at any time during an excavation for which there is a valid ticket number the field markings are no longer reasonably visible, the excavator shall contact USA North to have the area re-marked. The excavator shall allow two (2) Working Days for re-marking of facilities.

Prior to calling USA North, the excavator shall clearly mark the excavation site with white, water-soluble or spray chalk paint in paved areas or place flags, stakes, whiskers, or some other approved method in unpaved areas. The excavator shall determine the approximate location (twenty-four inches (24") from outside edge on either side of the facility) of utilities in conflict with the proposed excavation by exposing the subsurface installation with hand tools before using any power-operated or power-driven equipment. The excavator is responsible for preserving operators' markings or markers until they are removed.

Prior to Field Acceptance, all USA North markings shall be removed by the Contractor to the satisfaction of the Agency. During the progress of the Work, markings or markers shall be removed within two (2) months of the date the markings or markers are no longer needed or upon completion of the work, whichever is sooner. The Agency will accept natural weathering of markings if the markings disappear within the two-month period or prior to Field Acceptance. If the markings are in brick pavers or concrete areas and if, by natural weathering or other approved removal methods, the markings still remain, the Contractor must replace the concrete or the brick pavers in-kind, unless the utility operator has failed to use chalk-based paint or other non-permanent marking materials. Excavators and utility operators are encouraged to avoid marking in these areas by using offset markings. Removal methods shall be non-destructive and residual shadowing shall not remain.

Removal of markings shall comply with requirements of the National Pollutant Discharge Elimination System (NPDES), the Regional Water Quality Control Board (RWQCB), and any other applicable federal, state, and local laws, rules, or regulations.

USA North markings not removed by the required time lines may be removed and the sidewalk or street repaired/replaced by the Agency at its discretion. The Agency will charge the excavator a service fee equal to the actual costs of removal for removing the markings and

making any repairs and/or replacements. This fee will include the cost to comply with NPDES, the RWQCB, and any other applicable federal, state, and local laws, rules, or regulations.

6-16.05 Damage to Existing Utilities

The excavator shall notify the affected utility of any contact, scrape, dent, nick, or damage to their facility. Any operator or excavator who negligently violates Government Code Section 4216 through 4216.9, inclusive, is subject to a civil penalty in an amount not to exceed ten thousand dollars (\$10,000). Any operator or excavator who knowingly and willfully violates Government Code Section 4216 through 4216.9, inclusive, is subject to a civil penalty in an amount not to exceed fifty thousand dollars (\$50,000).

Table 6-2 designates color codes and abbreviations that shall be used by the Contractor and the utility owners to identify utilities.

6-17 APPROVAL OF CONTRACTOR'S PLANS NO RELEASE FROM LIABILITY

The review or approval by the Agency of any working drawing or any method of work proposed by the Contractor shall not relieve the Contractor of any of the Contractor's responsibility for any errors and shall not be regarded as any assumption of risk or liability by the Agency or any officer, official, agent, employee, member, volunteer, affiliate, or their duly authorized representatives. The Contractor shall have no claim under the Contract because of the failure or partial failure or inefficiency of any reviewed or approved plan or method. Agency review or approval means that the Agency has no objection to the Contractor using the proposed plan or method at the Contractor's responsibility and risk.

TABLE 6-2 FIELD MARKINGS - COLOR CODES AND SYMBOLS		
Color	Typical Abbreviation	Typical Utility
White	USA	Proposed Excavation
Pink	TSM	Temporary Survey
Red	SL	Street Lighting
	E	Electric
	TS	Traffic Signals
Yellow	G	Gas
	PP	Oil
	STM	Steam
	CH	Chemical
	Company Name	
Blue	W	Water
Purple	RW	Reclaimed Water
	IRR	Irrigation
Green		Slurry
	SS	Sewer
	SD	Storm Drain

COMMON ABBREVIATIONS			
Facility Identifiers			
CH	Chemical	SL	Street Lighting
E	Electric	STM	Steam
FO	Fiber Optic	SP	Slurry System
G	Gas	TEL	Telephone
LPG	Liquefied Petroleum Gas	TS	Traffic Signal
PP	Petroleum Products	TV	Television
RR	Railroad Signal	W	Water
SS	Sewer	RW	Reclaimed, Recycled, Non-Potable Water
SD	Storm Drain		

Underground Construction Descriptions			
C	Conduit	HH	Hand Hole
CDR	Corridor	MH	Manhole
D	Distribution Facility	PB	Pull Box
DB	Direct Buried	R	Radius
DE	Dead End	STR	Structure
JT	Joint Trench	T	Transmission Facility
HP	High Pressure		

6-18 CONTRACTOR SHALL NOT MORTGAGE EQUIPMENT

The Contractor shall not mortgage or otherwise convey the title of the plant, machinery, tools, appliances, supplies, or materials that may at any time be in use, or further required or useful, in the prosecution of the Work, without prior written consent of the Agency.

6-19 PROPERTY RIGHTS IN MATERIALS

Nothing in the Contract shall be construed as vesting in the Contractor any right of property in the materials used after they have been installed, attached or affixed to the Work, and on which partial payments have been made by the Agency. All such materials shall be the property of the Contractor and the Agency jointly as their interests may appear, and shall not be removed from the Work by the Contractor without the Agency’s consent.

6-20 EXCAVATION AND TRENCH SAFETY

Contractors that plan to excavate four (4) or more feet below grade must follow the requirements of the California Code of Regulations, Title 8, California Code of Regulations, Section 1541 and this Standard Specification. Trenching and excavation activities present hazards such as underground utilities, access and egress limitations, hazardous atmospheres, water accumulation, stability of adjacent structures, fall protection concerns, and cave-ins. In addition to addressing these hazards, California Code of Regulations, Title 8, California Code of Regulations, Section 1541 also sets forth the requirements for protecting employees from moving ground. Specifically, all excavations 5-feet or more in depth must be shored, sloped, benched or otherwise supported to prevent a cave-in.

6-20.01 Permit

The Contractor must obtain a permit from the Division of Industrial Relations per Labor Code Section 6500, as specified in California Code of Regulations, California Code of Regulations, Title 8, Article 6, Section 1539 “Permits” of the Construction Safety Orders, for all excavations five feet (5') or deeper to which an employee is required to descend. The permit shall be kept at the construction site at all times.

6-20.02 Shoring, Bracing, Shielding and Sheeting

In accordance with Labor Code Section 6705, at least five (5) Working Days in advance of excavation of any trench or trenches five feet (5') or more in depth, with a total value of twenty-five thousand dollars (\$25,000) or more, the Contractor shall submit to the Agency a detailed plan showing the design of shoring, bracing, sloping, or other provisions for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the shoring system standards, the plan shall be prepared by a California registered civil or structural engineer. A signed copy of the detailed plan shall be on the site at the time of the excavation. Nothing in this Section shall be deemed to allow the use of a shoring, sloping, or protective system less effective than that required by the Construction Safety Orders. Nothing in this Section shall be construed to impose tort liability on the Agency or any of its employees. These systems must support the sides of the excavation and prevent soil movement that could cause injury to any person or structure. Any damage resulting from a lack of adequate shoring, bracing, shielding or sheeting shall be repaired at the Contractor's expense.

The Contractor shall immediately replace or repair any unsafe ladder, scaffolding, shoring, or bracing, or correct any other dangerous or hazardous situation that exists.

A Competent Person, as defined in California Code of Regulations, Title 8, Construction Safety Orders, Section 1504, “Definitions”, shall be on site at all times when the Contractor's employees are working within the trench. A "Competent Person" is one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

The price bid for work that will require an excavation of five feet (5') or deeper (or less if conditions warrant) shall include the cost of adequate sheeting, shoring and bracing, or equivalent method conforming to applicable safety orders, unless a separate bid item for such work is included in the bid form.

6-20.03 Contaminated Soil Management

If the Contractor is performing excavation work at a site where there is evidence of or historical data to indicate that the soil is contaminated with oil, fuel, or other such hazardous materials, the Contractor is required to adhere to the regulatory requirements that govern the excavation and disposal of contaminated soil. These requirements include provisions for work zone delineation and control, handling of contaminated debris, storage of excavated soil, personal protective equipment, equipment decontamination, and air monitoring. See Section 10-7 Contaminated and Hazardous Materials or Environments of these Standard Specifications for additional information.

The Contractor is required to stop work and implement the appropriate emergency response procedures in the event that field observation (e.g. odor, discoloration/staining, oily sheen) indicates that contaminated soil has been encountered. If the Contractor fails to stop work and implement appropriate emergency response procedures, the Agency may stop the work and the Contractor is responsible for impacts to the Work due to the Agency stoppage.

To ensure that construction activities do not increase the risk of a release of hazardous materials, the Contractor is required to have and implement a Spill Prevention Control and Countermeasure (SPCC) Plan. The Contractor's SPCC Plan will describe the procedures and equipment in place to minimize spills, leaks or releases of oil or hazardous materials. In

addition, the plan will address the reporting and response procedures in the event of an incident.

6-21 PRESERVATION OF PROPERTY

Roadside trees and shrubbery that are to remain, pole lines, fences, signs, traffic control devices, striping, survey markers and monuments, buildings and structures, conduits, under- or above-ground pipelines, and any other improvements and facilities shall be protected from injury or damage. If ordered by the Agency, the Contractor shall provide and install suitable safeguards to protect such objects from injury or damage. If such objects are injured or damaged by reason of the Contractor's operations, said objects shall be replaced or restored at the Contractor's expense to a condition as good as when the Contractor entered upon the Work. The Contractor shall receive Agency approval before the removal of any road sign or permanent traffic control device that interferes with the Work.

6-22 OVERLOADING, PAVEMENT PROTECTION & REPAIR

The Contractor shall determine safe loading capacities and shall not overload any structure, equipment, pavement, or material beyond its safe capacity, or deteriorate any further the preconstruction condition of pavement during construction. Protection of pavement to prevent damage, cracking or scarring is the responsibility of the Contractor. The Contractor assumes full responsibility for any damage resulting from any such overloading or failure to adequately protect the existing pavement.

The Contractor shall request a pre-construction inspection prior to performing any work to validate the condition of all existing public facilities, including but not limited to, pavement, striping, curb and gutters, median curbing, sidewalks, median pavement and plantings, channelization islands, and traffic signal facilities. Following construction, and prior to field acceptance, a post-construction inspection shall be conducted to identify damage resulting from the Contractor's activities. Pre- and post- construction inspections shall include representatives from the Contractor and the Agency. Damage identified as a result of the pre- and post-construction inspections, and which was caused by the Contractor's activities, shall be repaired by the Contractor to the Agency's satisfaction at no additional cost to the Agency.