

Signature _____

Title _____

**ARTICLE 10. SAFETY, CONFINED SPACES, TRAFFIC CONTROL, UTILITIES
AND TRENCHING**

Section 10.01. General Safety Requirements.

The Contractor shall comply with all safety requirements in the General Provisions, as well as with all applicable occupational safety and health standards and rules set up to help eliminate or limit workplace hazards proven or suspected by research or experience to be harmful to personal safety and health.

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

A. Traffic control device supplier: Supplier of barricades, steel plates, delineators, channelizers, construction signs, and other traffic control equipment to be used during construction.

B. 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.

C. 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 City.

Section 10.02. Work During Hours of Darkness. Working areas utilized by the Contractor during the hours of darkness shall be illuminated to conform to the minimum illumination intensities established by California Occupational Safety and Health Administrative Construction Safety Orders.

Section 10.03. Sewers and Appurtenances/Contaminations.

The Contractor is warned that when the work involves existing sewers and appurtenances that have been exposed to sewage and industrial wastes, these facilities shall be considered contaminated with disease-causing organisms. Personnel in contact with contaminated facilities, debris, wastewater or similar items shall be advised by the Contractor of the necessary precautions that must be taken to avoid becoming diseased. It is the Contractor's responsibility to urge its personnel to observe a strict regimen of proper hygienic precautions, including any inoculations recommended by the local public health officer.

1 Because of the potential danger of solvents, gasoline, and other hazardous material in the
2 existing sewer and storm drain pipes, these areas shall be considered hazardous. The
3 Contractor shall be aware of these dangers and shall comply with Article 108, "Confined
4 Spaces", of the General Industrial Safety Orders (Cal-OSHA) contained in the California
5 Administrative Code, Title 8.

6
7 Section 10.04. Confined Spaces.

8 When working in a confined space, the Contractor shall comply with all requirements of Article
9 108, "Confined Spaces", of the General Industrial Safety Orders (Cal-OSHA), contained in the
10 California Administrative Code, Title 8, sections 5156 through 5159 ("Article 108").

11 The Contractor shall provide all monitoring and safety equipment necessary to perform pre-entry
12 checks of all confined spaces. The Contractor shall also provide all monitoring, safety and
13 communications equipment required for operations in those confined spaces requiring
14 conformance to Article 108.

15
16 Identified on the Contract Drawings are those confined spaces for which the City has
17 determined, based upon experience or knowledge, that an environment free of dangerous air
18 contamination and/or oxygen deficiency cannot be ensured through the implementation of the
19 applicable provisions of Article 108. The Contractor shall be provided with information regarding
20 known hazards and known or potential permit spaces.

21
22 For entry into designated confined spaces, as well as permit-required confined spaces, the
23 Contractor shall follow all procedures required for conformance with Article 108.

24
25 To assure compliance with the above, the Contractor shall submit for review to the Owner's
26 Representative:

27
28 A. The Contractor's detailed procedures for confined space operation, including without
29 limitation, operating, rescue and surveillance of surrounding areas procedures.

30
31 B. Copies of all documents and certificates that qualify the Contractor to safely perform
32 work in confined spaces. The Contractor shall also submit all applicable Materials Safety
33 Data Sheets (MSDS) and hazard information on chemicals, products, materials or
34 procedures.

35
36 C. Sufficient documentation and evidence that a confined space entry can be made in
37 accordance with Article 108. Documentation shall include, but not be limited to the
38 following:

- 39
40 • Equipment availability, suitability and integrity
41 • Personnel training
42 • Experience
43 • Supervision
44 • Safety
45 • Accident experience
46 • Permit-required confined space policy

- Hot work procedures (if applicable)
- Lock-out/tag-out procedures (if applicable)

The Contractor's submittal shall be made at least ten (10) Calendar Days prior to any confined space entry in accordance with the requirements of Article 5, Section 5.10 of the General Provisions of the City's Standard Specifications and must be determined to be satisfactory by the City before such work will be allowed to proceed. The Contractor shall conform to the procedures established by its submittal at all times during operations in all confined space operations.

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

A. Notification of the location, physical characteristics, known hazards, etc. regarding the confined space the Contractor anticipates entering.

B. 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 confined space.

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

Failure of the City to identify a confined space shall not relieve the Contractor of its responsibility to conform to the requirements of Article 108 and this Section of the General Provisions.

Section 10.05. Public Convenience and Safety.

A. 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. All public traffic shall be permitted to pass through the Work, and the Contractor shall conduct operations so as to offer the least possible obstruction and inconvenience to the public. Vehicles, bicycles, and pedestrians must be allowed to pass at all times except during an emergency closure.

In addition to the requirements for furnishing facilities for public safety as specified in Section 10.06 of these General Provisions, the Contractor shall erect such warning and directional signs as necessary or as directed by the Engineer for expediting the passage of public traffic through or around the Work and the approaches thereto. All warning and directional signs shall comply with Section 10.06, "Public Safety and Traffic Control", of these General Provisions and the Caltrans Manual of Traffic Controls. The Owner's Representative shall be notified at least twenty-four (24) hours in advance of the Contractor's desire to change any existing traffic patterns. No changes shall be made until approved by the Owner's Representative.

Existing traffic signal and highway lighting systems shall be kept in operation for the benefit of the traveling public during progress of the work, and other forces will continue routine maintenance of existing systems. Traffic signal detector facilities accidentally cut or damaged during construction shall be repaired or replaced so as to be fully operational within twenty-four (24) hours. The Contractor shall be responsible for all expenses incurred by the City during the period of time that such detector facilities are not fully operational.

When traffic control signals are shut down as provided in Section 86-1.05 of the State Specifications, the Contractor shall control traffic by the use of flaggers, as directed by the Engineer, at those locations set forth in the Special Provisions. No STOP signs will be permitted at these locations. The flaggers required for this operation shall be paid for as extra work as set forth in Article 8 of the General Provisions of the City's Standard Specifications.

When pipelines, to be installed under the Contract, cross certain streets or highways, as noted on the plans, the Contractor will be permitted to open the trench for only a portion of the width of the pavement at any one time so that one-way traffic can be maintained.

Water or dust palliative shall be applied if ordered by the City for the alleviation or prevention of dust nuisance caused by the Contractor's operations.

Fire hydrants on or adjacent to the Work shall be kept accessible to fire-fighting equipment at all times.

B. 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 or by providing alternative pedestrian and bicyclist access through or adjacent to construction areas. Effort must be made to separate the pedestrian or bicycle traffic from the work area. 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 adequate lane closure signage is in place. Walkways in construction areas shall be maintained smooth and be free of abrupt changes in grade. Pedestrian and bicycle access shall consist of four-foot (4') wide bridges across trenches and four-foot (4') 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 barricades, which border passageways located in roadway areas, shall be reflectorized on the side facing oncoming traffic.

C. Written Notification to Residences and Businesses. The Contractor shall notify, in

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

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

17
18 When abutting property owner's access across the right-of-way line is to be eliminated,
19 repaired, or replaced under the Contract, the existing access shall not be closed until the
20 replacement access facilities are completed and functional.

21
22 E. Property Damage. Any property damage caused by the Contractor shall be repaired at
23 the Contractor's expense to the satisfaction of the City.

24
25 F. Work On Private Property. The Contractor must obtain written permission from the
26 owner of any privately owned property prior to beginning any work, storing materials or
27 otherwise conducting any operations on said property. The written approval from the
28 property owner must be on file with the City before any operations will be permitted on said
29 property.

30
31 G. Hazardous Conditions Created. Whenever the Contractor's operations create a
32 condition hazardous to pedestrians, bicyclists, or the traveling public, the Contractor shall,
33 at the Contractor's own expense, furnish, erect and maintain any fences, temporary railing
34 (Type K), barricades, lights, signs and other devices necessary or as directed by the City to
35 prevent accidents or damage or injury to the public or property.

36
37 If needed for public use, roadway excavation shall be conducted to maintain a smooth and
38 even surface satisfactory for use by public traffic at all times. The surface of the roadbed
39 shall be kept in a smooth, even condition free of humps and depressions, satisfactory for
40 the use of public traffic as determined by the City.

41
42 Temporary facilities that the Contractor uses to perform the Work or store or stage material
43 or equipment shall not be installed or placed where they will interfere with the free and safe
44 passage of public vehicular, bicycle, or pedestrian traffic, and at the end of each day's work
45 and at other times when construction operations are suspended for any reason, the
46 Contractor shall remove all equipment and other obstructions from the portion of the

roadway open for use by public traffic. Spillage resulting from hauling operations along or across any public traveled way shall be removed promptly, before the end of the working day.

Section 10.06. Public Safety and Traffic Control.

A. Responsibility for Safety. It is the Contractor's responsibility to provide for public safety and traffic control. The Contractor shall furnish, erect and maintain such warning devices as are necessary to protect the public. The Engineer may review the Contractor's operations and/or warning devices and inform the Contractor if an unsafe or hazardous condition is observed. The Contractor may be directed by the Engineer to abate the hazard. The Contractor must comply with all directives for hazard abatement immediately and within the timeframe imposed by the Engineer. However, the Contractor shall not be relieved of its responsibility to protect the public by any approval given by the Engineer or by the Engineer's failure to point out any deficiency.

B. 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.

C. Traffic Controls.

The protection and maintenance of existing signs and the removal, protection, storage and resetting of City traffic signs that are affected by the Work shall be the responsibility of the Contractor, as directed by the Engineer, or as specified in the Special Provisions. The Contractor shall inventory all existing signs prior to the start of work. The Engineer shall confirm the inventory in writing prior to the start of work. Traffic signs and traffic control facilities existing within the limits of the Project shall not be moved except as necessary to prevent them from being damaged by construction operations. When a sign needs to be removed because it interferes with the Contractor's work, it shall be done in one of the following prescribed manners:

1. Stop signs and other traffic control signs and facilities necessary for the control of traffic during the project shall be maintained in their original positions, as noted in the inventory, except for temporary repositioning necessitated by the Contractor's work. No signs shall be moved from their original positions without prior approval of the Engineer. Temporary sign positions must be equivalent to the original positions for driver visibility. The standard sign position is seven (7) to ten (10) feet from the edge of pavement. Stop signs should not normally be located more than thirty (30) feet from the roadway painted centerline (unless they are supplemental signs), more than forty (40) feet in advance of the limit line, or more than twenty (20) feet beyond the limit line. When the intersection approach width for one direction of traffic is thirty (30) feet or more, the Engineer may require that stop signs be erected both on the left and right sides of that approach.

Stop signs and other traffic control signs in temporary positions may be mounted on portable supports only during working hours when the Contractor's

workers are available to maintain the signs in proper position at all times. The position and mounting devices for temporary signs shall be subject to the approval of the Engineer.

Outside of working hours, and at all other times when no Contractor's workers are available to maintain signs on portable temporary supports, all temporary stop signs and other traffic control signs must be mounted on their original or equivalent posts. The posts must be set in the ground with compacted backfill, to a depth of at least thirty-two (32) inches, in the same way that permanent sign are installed. The bottom of the sign plate must be at least five (5) feet but not more than seven (7) feet above the ground, and must be seven (7) feet above the ground if subject to pedestrian traffic adjacent to the post.

2. Traffic signs and traffic control facilities not necessary for the control of traffic during the Project shall be removed and salvaged by the Contractor. When signs are removed and salvaged as provided herein, they shall be stockpiled as noted in Section 15-2.04 of the State Specifications, in an upright position, and the City Traffic Sign Maintenance Section shall be notified within twenty-four (24) hours of such stockpiling.

The project sign inventory shall indicate which of the above categories applies to each sign, subject to approval by the Engineer.

No additional payment shall be made for the above-described work. It shall be included in the unit prices for other activities.

The cost of work incurred by the City sign maintenance forces as a result of the failure of the Contractor to satisfactorily protect, maintain and reinstall City signs within the construction Project as set forth herein shall be subject to deduction from contract progress payments due to the Contractor.

The Contractor shall, forty-eight (48) hours in advance of beginning any work, notify the Engineer in writing of the name, location and twenty-four (24) hour per day telephone number of the company which will supply barricade and warning devices for the Project. Said supplier must be approved by the Engineer and must be available on a twenty-four (24) hour basis for maintaining, placing, and replacing barricades and warning devices. If the Engineer is unable to contact the Contractor or its superintendent, the supplier will be called directly, and the Contractor shall accept charges made by the supplier for service performed, as a result of the Engineer's call.

Reference is made to the requirements of California Vehicle Code, section 21400 et seq. regarding traffic control devices and barricades. All signs, barricades, delineators, and other traffic control devices used for the detouring or routing of traffic in, around, and through the construction area, shall conform to those standards set forth in the latest edition of the State of California, Department of Transportation "Manual of Traffic Controls for Construction and Maintenance Work Zones." Delineators shall have a Type III

reflective sheeting surface of not less than 3" x 12". Barricades and delineators shall be maintained so that the reflective materials are clean and visible during hours of darkness.

A high level warning device is required for use on major streets at the direction of the Engineer, when a lane is closed or work encroaches in a lane of traffic or when barricades are placed in a moving lane of traffic. A single barricade shall not be placed alone in the traveled way.

Use of flashing arrow signs is required on major (four or more lanes) streets for lane closures during hours of darkness and for all lane closures lasting more than two (2) hours.

On major streets, opposing traffic is separated by delineators, traffic striping, or raised pavement markers. Where traffic is diverted to the left of an existing double yellow centerline into a painted median, or into a left-turn lane, delineators are to be utilized beyond the work and to return traffic to normal lanes.

All delineators used during hours of darkness must be stabilized by being nailed or fastened to the pavement.

Unless specifically set forth in the Special Provisions, all marked lanes of traffic shall be open on all major streets in each direction during the peak traffic hours of 7:00 a.m. to 8:00 a.m. and 3:30 p.m. to 6:00 p.m.

During the first Friday after Thanksgiving and the last twenty-four (24) Calendar Days of December, the Contractor shall not close any traffic lanes on a major street except as provided in the Special Provisions. The Engineer may grant permission to close traffic lanes on a major street when the Contractor submits a written request two (2) Working Days in advance, and the Contractor receives written permission from the Engineer. The directional flow of traffic, the proximity to retail business, the total flow of traffic related to the capacity of the roadway, and the interference to public safety will be conditions the Engineer considers in determining whether to grant or deny permission.

If, for an emergency, the Contractor is required to close a lane on a major street during peak traffic hours or during the last twenty-four (24) Calendar Days of December, the Contractor shall immediately notify the City Construction Inspection office.

A traffic lane shall be considered open if it is surfaced with asphalt at least ten (10) feet wide.

Major streets are those roadways with two or more marked traffic lanes in each direction or other street as determined by the Engineer.

A detailed traffic plan, prepared by a qualified Engineer will be required for lane closures during the hours of darkness or lasting more than one (1) day and shall be submitted for

1 approval by the Engineer at least ten (10) Working Days prior to the proposed lane
2 closure.

3
4 The Engineer may approve in writing traffic restrictions necessary for public safety or
5 emergency conditions during peak traffic hours, and during the month of December.

6
7 The Contractor shall maintain traffic cones, barricades, temporary striping, or yellow
8 delineators (reflectorized or illuminated) within and on the approaches to the Project to
9 properly indicate to the motorist the driving centerline of the roadway. (The motorist shall
10 be permitted to drive to the right of these devices as provided in the California Vehicle
11 Code.) At least one barricade or delineator shall be placed approximately each fifty (50)
12 feet and a C30 sign approximately each five hundred (500) feet adjacent to the work area.
13 The cone spacing in the tapers shall be in accordance with Section 7-1.09 of the State
14 Standard Specifications. The Contractor may remove the barricades at the direction of
15 the Engineer if they interfere with the movement of traffic, under special conditions;
16 however, the barricades shall be replaced when the Engineer determines the special
17 conditions no longer apply. In lieu of barricades, temporary paint striping, or traffic cones
18 may be used. To delineate the centerline of the roadway, the Contractor may use
19 construction grade pavement striping tape (reflectorized). Six-inch (6") by four-inch (4")
20 minimum pieces of tape shall be placed on the centerline at 25-foot (25') (maximum)
21 intervals.

22
23 The Contractor shall not remove from the Project barricades or other traffic control
24 devices placed within the Project limits, or on the approaches to the Project, for the
25 direction and protection of the traveling public, until the Contractor has given three (3)
26 Working Days' advance written notice to the Engineer. Such notice shall also constitute
27 the Contractor's request for City installation of permanent directional and control signs,
28 striping, and markings on public roads. Neither the notice nor the placing of signs,
29 striping, and/or markings shall in any way relieve the Contractor of its responsibility under
30 the terms of the Contract.

31
32 Should the Contractor desire the City to do signing and striping on public roads and
33 streets in advance of the timing set forth herein, a separate letter agreement may be
34 made between the City and the Contractor.

35
36 On new developments, the Contractor will be required to maintain a Type III barricade
37 eight (8) feet in length in the center of the road indicating that the road is closed except to
38 construction personnel. The barricade is not to be removed until the Project is accepted
39 by the City, and the City has provided any necessary signs and striping.

40
41 The Contractor shall do all traffic control work without direct payment as specified in
42 Article 8, Section 8.04 of the General Provisions of the City's Standard Specifications,
43 except as directed by the Engineer during times when traffic signals are out of service, as
44 set forth in Section 10.05 of these General Provisions.

45
46 D. 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 Engineer may direct the Contractor, at the Contractor's expense, to abate the hazard.

Should the Engineer 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 City will abate the hazard. All City costs to abate the hazard shall be reimbursed by the Contractor or deducted from the progress payment.

E. Competent Flaggers. Whenever the Contractor's operations require one-way traffic or create a condition hazardous to the public traffic, or whenever requested by the Engineer, the Contractor shall provide competent and courteous flaggers whose sole duties shall consist of directing the movement of public traffic through or around the Work. All flaggers shall be trained as required by Cal-OSHA Regulations and shall be prepared to provide verification of such training to the City when requested.

F. Construction Signs. The Contractor is responsible for supplying, installing and maintaining all construction signs and posts. Construction signs used in the City shall conform to the following minimum sizes:

<u>Sign Code</u>	<u>Minimum Size</u>	<u>Sign Code</u>	<u>Minimum Size</u>
W1 (Rt or Lt)	30" x 30"	C1	36" x 36"
W2 (Rt or Lt)	30" x 30"	C2	36" x 24"
W3 (Rt or Lt)	30" x 30"	C3	40" x 20"
W5 (Rt or Lt)	30" x 30"	C3A	40" x 20"
W6	24" x 24"	C4	24" x 24"
W11	30" x 30"	C5 (Rt or Lt)	36" x 12"
W15	30" x 30"	C6	24" x 24"
W18	30" x 30"	C7	20" x 12"
W19	30" x 30"	C8	30" x 30"
W33	30" x 30"	C9A	36" x 36"
W44	36" x 36"	C10	24" x 24"
W50	30" x 30"	C11	48" x 30"
W58	36" x 36"	C13	48" x 18"
SW42	30" x 30"	C14	28" x 12"
SW43 (Rt or Lt)	30" x 30"	C16	36" x 36"
SW44 (Rt or Lt)	30" x 30"	C18	36" x 36"
Type K Marker	15" x 6"	C19	36" x 36"
Type L Marker	8" x 24"	C20 (Rt or Lt)	36" x 36"
Type N Marker	18" x 18"	C21	36" x 36"
Type P Marker	12" x 36"	C22B	24" x 24"

1	Other Warning		C22C	24" x 12"
2	Signs	30" x 30"	C23	24" x 24"
3			C24	24" x 24"
4			C25	24" x 24"
5			C27	24" x 24"
6			C28A	18" x 18"
7			C28B	18" x 18"
8			C29	24" x 7"
9			C30	36" x 24"
10			C32	36" x 24"
11			C36	36" x 36"
12			Other Construction	
13			Signs	30" x 30"

17	<u>Sign Code</u>	<u>Minimum Size</u>
18	R1	30"
19	R7	24" x 30"
20	R7A	24" x 18"
21	R10 (Rt or Lt)	36" x 12"
22	R11	30" x 30"
23	R11A	30" x 18"
24	R16	24" x 24"
25	R16A	24" x 18"
26	R17	24" x 24"
27	R17A	24" x 18"
28	R18-1 (Rt or Lt)	20" x 32"
29	R18-2 (Rt or Lt)	36" x 36"
30	R41	24" x 30"
31	R42	24" x 30"
32	Other Regulatory	
33	Signs	30" x 30"

G. Temporary Bridging of Excavations and Trenches.

Whenever necessary or requested by the City, trenches and excavations shall be bridged to allow an unobstructed flow of traffic.

1. Bridging shall be secured against displacement by using adjustable cleats, angle, bolts or other devices.
2. Bridging shall be placed and secured to work within the minimum noise levels in accordance with City Code, Section 8.24, "Notice Control".

3. Steel plates used for bridging shall extend at least one (1) trench width on each side beyond the edges of the trench. Temporary paving materials shall be used to feather the edges of the plates to minimize wheel impact.
4. Depending upon the depth of the excavation, soil type, vibration and other variables, the trench may require shoring to support bridging. The Contractor should confer with a California Licensed Engineer or other appropriate professional if there is any question about the capability of the excavation and bridging to support the forces of traffic.

WIDTH OF EXCAVATION	MINIMUM THICKNESS OF STEEL PLATES
2.0 ft. or less (0.6 m or less)	7/8 inch (22mm)
3.0 ft. (0.9 m)	1 inch (25 mm)
4.0 ft. (1.2 m)	1-1/4 inch (32 mm)

Whenever the work area is adjacent to a traffic lane and there is a pavement cut, ditch or trench over two (2) inches deep, the Contractor shall maintain continuous barricades spaced at approximately twenty-foot (20') intervals for the first one hundred (100) feet from the beginning of the cut, ditch or trench and at approximately fifty-foot (50') intervals thereafter. If the cut, ditch or trench is more than ten (10) feet from a traffic lane, the spacing may be greater but must not exceed two hundred (200) feet.

H. 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.

I. Bus Stops. If construction operations will obstruct a bus stop, the Contractor shall notify Folsom Stage Line (FSL) via the Folsom Public Works Department at 355-7272, forty-eight (48) hours in advance of beginning that portion of the Work and make provisions agreeable to FSL to provide an alternate location where people can safely board the bus.

Section 10.07. Barricading Open Trenches.

Any excavation permitted by the City to be left open shall be barricaded with Type II or Type III barricades with flashers. Signs stating "OPEN TRENCH" shall be posted when requested by the City. 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 four feet (4') of the traveled way, not protected by K-rail or a similar traffic control barrier approved by the City, shall be backfilled at the end of the work shift or plated in accordance with Section 10.06(G), "Temporary Bridging of Excavations and Trenches", of these General Provisions.

Section 10.08. Existing Utilities.

1
2 A. General. The Contractor shall coordinate and fully cooperate with the City and utility
3 owners for the location, relocation, and protection of utilities. The Contractor's attention is
4 directed to the existence of utilities, underground and overhead, necessary for all
5 buildings in the work area. The Contractor shall arrange with utility owners for the
6 location of service lines in advance of the actual construction and for the relocation of
7 such facilities, if necessary, by the utility owner or the Contractor.

8
9 B. Maintenance and Protection. Unless otherwise shown or specified in the Contract, the
10 Contractor shall maintain in service all drainage, water, gas, sewer lines, power, lighting,
11 telephone conduits, and any other surface or subsurface utility structure that may be
12 affected by the Work. However, the Contractor, for convenience, may arrange with
13 individual owners to temporarily disconnect service lines of other facilities along the line of
14 the Work. The cost of disconnecting and restoring such utilities shall be borne by the
15 Contractor.

16
17 Unless otherwise specified in the Special Provisions, the Contractor shall protect all
18 existing utilities on all projects being constructed, whether inside or outside of highway
19 rights-of-way. The utility owner in these cases may elect to provide the necessary
20 protective measures and bill the Contractor for the cost. "Existing utilities" further includes
21 traffic control devices, conduits, streetlights, and related appurtenances.

22
23 Existing utility facilities that are to be relocated, including traffic signals and light poles,
24 shall be relocated prior to paving. No paving shall be performed around existing utility
25 facilities that are to be relocated.

26
27 The public utility, where it is the owner, shall have the sole discretion to perform repairs or
28 relocation work, or to permit the Contractor to do such repairs or relocation work.

29
30 C. Exact Locations Unknown. It is recognized by the City and the Contractor that the
31 location of existing utility facilities shown on the Contract Drawings and Specifications are
32 approximate and that their exact locations are unknown. Recognition is given to the fact
33 that there may be additional utilities existing on the property unknown to either party to
34 the Contract. Location of utilities as shown on the Contract Drawings and Specifications
35 represent the best information obtainable from utility maps and other information
36 furnished by the various utility owners involved. The City warrants neither the accuracy
37 nor the extent of actual installations as shown on the Contract Drawings and/or
38 Specifications.

39
40 Because of this uncertainty, it may become necessary for the Engineer to make
41 adjustments in the line or grade of sewers or storm drains. Installation of such adjusted
42 lines shall be made at the regular unit price bid for the work, and no additional
43 compensation will be paid therefore, unless the scope and character of the work has been
44 changed.

45
46 In accordance with Government Code section 4215, the City shall make provisions to

1 compensate the Contractor for the costs of locating, repairing damage not due to the failure
2 of the Contractor to exercise reasonable care, removing, relocating or protecting existing
3 main or trunk line utility facilities not indicated in the Contract Drawings and Specifications
4 with reasonable accuracy, and for equipment on the Project necessarily idled during such
5 work. In no event shall the City be liable for any further or additional costs resulting directly
6 or indirectly from any such occurrence. Compensation will be in accordance with Article 9,
7 "Changes and Claims", of the General Provisions of the City's Standard Specifications, and
8 in accordance with Section 8-1.09 of the State Specifications. Nothing herein shall be
9 deemed to require the City to indicate the presence of existing utility services, laterals, or
10 appurtenances whenever their presence can be inferred from other visible facilities such as
11 buildings, meters, junction boxes, valves, service facilities, identification markings, and
12 other indicators on or adjacent to the Work.

13
14 If the Contractor discovers utilities not identified in the Contract Drawings or Specifications,
15 the Contractor shall immediately notify the Engineer and the utility owner by the most
16 expeditious means available and later confirm in writing.

17
18 If the completion of the Work is delayed by failure of the City or the utility owner to remove,
19 repair, or relocate the utility, such delay may be an excusable delay as defined and
20 provided for in Article 7, Section 7.15 of the General Provisions of the City's Standard
21 Specifications. Nothing herein shall preclude the City from pursuing any appropriate
22 remedy against the utility for delays that are the responsibility of the utility. The Contractor,
23 on a street, road, channel or pipeline construction project shall not be assessed liquidated
24 damages for delay in completion of the project for that portion of such delay as is caused by
25 failure of the City or the owner of a utility to provide for the removal or relocation of existing
26 utilities.

27
28 D. Underground Service Alert (USA). The City is a member of the Underground Service
29 Alert (U.S.A.) one-call program. Except in an emergency, the Contractor and any
30 Subcontractor planning to conduct any excavation shall notify the U.S.A. at least two (2)
31 Working Days, but no earlier than fourteen (14) Calendar Days, in advance of performing
32 excavation work. U.S.A. can be reached by calling the toll free number – 800-227-2600.
33 U.S.A. does not accept emergency calls. The provisions of Government Code section
34 4216 shall be followed.

35
36 Each phase of a project shall be called into U.S.A. and continuing excavation reported
37 every fourteen (14) Calendar Days. The U.S.A. will provide an inquiry identification number
38 to the person contacting the center. The U.S.A. inquiry identification number shall be
39 available to the Project Inspector at the job site along with the date U.S.A. was called. If
40 the U.S.A. notifications are not kept up-to-date, the excavation may be stopped and a new
41 forty-eight (48) hour notice will be required before continuing the excavation. If, at any time
42 during an excavation for which there is a valid inquiry identification number, the field
43 markings are no longer reasonably visible, the Contractor shall contact the appropriate
44 U.S.A. notification center to have the area re-marked.

45
46 Prior to calling U.S.A., the Contractor shall clearly mark the excavation site with white,

water-soluble paint in paved areas or flags, stakes, whickers, or some other approved method, in unpaved areas. This paint shall be applied as white dots located inside the excavated area so that when construction is completed there will be no remnants of the paint. At those locations where the excavation is not known, the Contractor shall make an attempt to closely identify and outline the areas to be explored. The Contractor shall determine the exact 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 Contractor shall not call in to U.S.A. the entire project boundaries or, on road construction projects, the entire length of the project. The Contractor shall only request the marking of facilities within the area to be excavated within fourteen (14) Calendar Days of the call.

E. Damage to Existing Utilities. The Contractor 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 4215 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 4214 is subject to a civil penalty in an amount not to exceed fifty thousand dollars (\$50,000).

Markings.

The following table designates color codes and symbols that shall be used by the Contractor and the utility owners to identify utilities.

FIELD MARKINGS COLOR CODES AND SYMBOLS		
Color	Symbol	Name
Safety Precaution Blue	W	Water
Safety Alert Orange	FA	Fire Alarm
	Tel	Telephone/Communication
	R	Railroad
	TV	Television/CATV
Safety Green	WU	Western Union
	S	Sewer
Safety Red	D	Storm Drain
	L	Street lighting

	E T	Electric Traffic Signals
High Visibility Safety Yellow	G Company Name	Gas Oil or Chemical Steam
Purple	RW	Reclaimed Water
Pink/Fuchsia	TSM	Temporary Survey
White	USA	Proposed Excavation – Paint outline of proposed excavation area with white dotted line

1 Section 10.09. Excavation and Trench Safety.

2
3 A. Permit. The Contractor must obtain a permit from the Division of Industrial Relations
4 per Labor Code Section 6500, as specified in California Code of Regulations, Title 8,
5 Article 6, Section 1539 "Permits" of the Construction Safety Orders, for all excavations
6 five feet (5') or deeper to which an employee is required to descend. The permit shall be
7 kept at the construction site at all times.
8

9 B. Shoring, Bracing, Shielding and Sheet piling. In accordance with Labor Code Section
10 6705, at least five (5) Working Days in advance of excavation of any trench or trenches
11 five feet (5') or more in depth, with a total value of twenty-five thousand dollars (\$25,000)
12 or more, the Contractor shall submit to the City a detailed plan showing the design of
13 shoring, bracing, sloping, or other provisions for worker protection from the hazard of
14 caving ground during the excavation of such trench or trenches. If such plan varies from
15 the shoring system standards, the plan shall be prepared by a California registered civil or
16 structural engineer. A signed copy of the detailed plan shall be on the site at the time of
17 the excavation. Nothing in this Section shall be deemed to allow the use of a shoring,
18 sloping, or protective system less effective than that required by the Construction Safety
19 Orders. Nothing in this Section shall be construed to impose tort liability on the City or
20 any of its employees. These systems must support the sides of the excavation and
21 prevent soil movement that could cause injury to any person or structure. Any damage
22 resulting from a lack of adequate shoring, bracing, shielding or sheet piling shall be repaired
23 at the Contractor's expense.
24

25 The Contractor shall immediately replace or repair any unsafe ladder, scaffolding,
26 shoring, or bracing, or correct any other dangerous or hazardous situation that exists.
27

28 A Competent Person, as defined in California Code of Regulations, Title 8, Construction
29 Safety Orders, Section 1504, "Definitions", shall be on site at all times when the
30 Contractor's employees are working within the trench. A "Competent Person" is one who
31 is capable of identifying existing and predictable hazards in the surroundings, or working
32 conditions which are unsanitary, hazardous, or dangerous to employees, and who has
33 authorization to take prompt corrective measure to eliminate them.
34

35 The price bid for work that will require an excavation of five feet (5') or deeper (or less if
36 conditions warrant) shall include the cost of adequate sheet piling, shoring and bracing, or
37 equivalent method conforming to applicable safety orders, unless a separate bid item for
38 such work is included in the bid form.
39

40 Section 10.10. Preservation of Property.

41 Roadside and/or on-site trees and shrubbery that are to remain, pole lines, fences, signs, traffic
42 control devices, striping, survey markers and monuments, buildings and structures, conduits,
43 under or above ground pipelines, and any other improvements and facilities shall be protected
44 from injury or damage. If such objects are injured or damaged by reason of the Contractor's
45 operations, said objects shall be replaced or restored at the Contractor's expense to a condition as
46 good as when the Contractor entered upon the Work. The Contractor shall receive the Engineer's

- 1 approval before the removal of any road sign or permanent traffic control device that interferes
- 2 with the Work.