

## DIVISION 2 - GENERAL TECHNICAL REQUIREMENTS TABLE OF CONTENTS

<b>SECTION 2-01 MOBILIZATION</b> .....	3
Section 2-01.01 General .....	3
Section 2-01.02 Office .....	3
Section 2-01.03 Record Drawings.....	3
Section 2-01.04 Emergency Response .....	3
Section 2-01.05 Measurement and Payment .....	3
<b>SECTION 2-02 EXISTING FACILITIES</b> .....	4
Section 2-02.01 General .....	4
Section 2-02.02 Measurement and Payment .....	4
<b>SECTION 2-03 CLEARING AND GRUBBING</b> .....	4
Section 2-03.01 General .....	4
Section 2-03.02 Preservation of Property .....	5
Section 2-03.03 Final Cleaning Up.....	5
Section 2-03.04 Disposal .....	5
Section 2-03.05 Drainage .....	5
Section 2-03.06 Measurement and Payment .....	6
<b>SECTION 2-04 SAFETY</b> .....	6
Section 2-04.01 General .....	6
Section 2-04.02 Safety Plan.....	6
Section 2-04.03 Safety Inspections .....	6
Section 2-04.04 Site Investigations .....	7
Section 2-04.05 Measurement and Payment .....	7
<b>SECTION 2-05 TRAFFIC CONTROL</b> .....	7
Section 2-05.01 Description .....	7
Section 2-05.02 Traffic Control System .....	8
Section 2-05.03 Encroachment Permit Requirements.....	8
Section 2-05.04 Construction Area Signs .....	8
Section 2-05.05 One-Way Traffic, Lane Closures, and Detours.....	12
Section 2-05.06 Pedestrian Access .....	13
Section 2-05.07 Access to Adjacent Properties .....	13
Section 2-05.08 Open Trenches.....	14
Section 2-05.09 Measurement and Payment .....	14
<b>SECTION 2-06 EROSION CONTROL</b> .....	15
Section 2-06.01 General .....	15
Section 2-06.02 Erosion Control Plan .....	15
Section 2-06.03 Maintenance.....	15
Section 2-06.04 Seeding.....	16
Section 2-06.05 Measurement and Payment .....	17
<b>SECTION 2-07 UTILITY MARKING SYSTEMS</b> .....	17
Section 2-07.01 General .....	17

**Section 2-07.02 Measurement and Payment**..... 18

## **SECTION 2-01 MOBILIZATION**

### **Section 2-01.01 General**

Mobilization shall include but not be limited to, all work necessary to move onto the job site all personnel, equipment, tools, and materials, establish all offices, buildings, and temporary site facilities, temporary sanitary facilities, prepare and maintain record drawings, provide emergency response, and generally prepare for construction.

### **Section 2-01.02 Office**

The Contractor shall maintain an office for the duration of the project equipped with phone service, fax service, internet service and a message machine. Contractor shall supply SVWD in writing with addresses and numbers prior to mobilization. The office shall be established and operational within 5-working days of the effective date of the Notice to Proceed or prior to commencing work, whichever is the earlier.

### **Section 2-01.03 Record Drawings**

Record drawings shall be kept at the job site and accessible for review upon request of the Engineer or Inspector. Record drawings shall be updated continuously throughout the course of the work. Upon completion of work the Contractor shall submit all copies of record drawings to the District.

### **Section 2-01.04 Emergency Response**

The Contractor shall maintain an emergency telephone number and shall be able to have competent personnel to the project site within 1-hour or that time provided for in the Contract Documents from the time a call is placed to the emergency telephone number.

### **Section 2-01.05 Measurement and Payment**

Mobilization shall be considered a lump sum item. The contract lump sum price for Mobilization shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work necessary for the movement of personnel, equipment, supplies and incidentals to the project site; the establishment and maintenance of the project and Engineer's offices (including payment of regular utility charges); maintenance of record drawings; and for all other work and operations which must be performed prior to beginning work on the various contract items on the project site. The method of establishing relative completion of this item for partial payments shall be as provided for in Section 1-08.01, "Progress Payment" of these Standard Specifications.

## **SECTION 2-02 EXISTING FACILITIES**

### **Section 2-02.01 General**

The Contractor is hereby advised that certain facilities may exist within the limits of work. Such facilities may include but are not limited to, existing water works, sanitary sewerage, storm drainage, traffic signals, natural gas, electric, telephone, cable television, highway structures, and buildings. The Contractor shall at all times protect those facilities not indicated to be removed, whether or not shown to be protected, and shall only remove those facilities indicated to be removed in accordance with the Contract Documents, the directions of the Engineer, and the direction of the owner of the facilities. Where the existing facility interferes with the Contractor in the performance of his work under the Contract, the Contractor shall bear full responsibility for the location, protection, and relocation or restoration of such facility, in accordance with the requirements of the owner of such facility.

The presence of such facilities shown on the Project Plans and provided for in the Contract Documents is for the convenience of the Contractor in preparing his proposal and planning his work and is prepared from the best information available to the Engineer at the time of preparation. The District makes no warranty, expressed or implied, as to the adequacy, completeness, and accuracy of such information. The Contractor shall satisfy himself with regards to the existence of such facilities and their impact on his operation.

Where such facilities are found to exist in locations other than those marked by the owner of such facilities, the Engineer may consider the Contractor's request for an extension in time or additional compensation in accordance with Section 1-05.06, "Changed Conditions" of these Standard Specifications. Such compensation shall be contingent upon the Contractor's conformance with the provisions of Section 1-02.01, "Examination of Plans, Specifications, and Site of Work" and Section 1-06.19, "Subsurface Exploration" of these Standard Specifications.

### **Section 2-02.02 Measurement and Payment**

No separate measurement will be made for work relating to existing facilities. Payment for protecting and adjusting these facilities shall be considered as included in the contract unit or lump sum price for other items of work and no additional compensation will be allowed therefore.

## **SECTION 2-03 CLEARING AND GRUBBING**

### **Section 2-03.01 General**

Work under this section shall be performed in accordance with Section 15, "Existing Highway Facilities" and Section 16, "Clearing & Grubbing" of the State Standard Specifications and the following requirements.

Clearing and grubbing shall consist of removing and disposing of all objectionable material from within the limits of work as defined by the Contract Documents. Objectionable material shall be that material which interferes with the

prosecution of or would otherwise be detrimental to the work, including but not limited to, paving materials, trees, brush and vegetation, unsuitable soils, debris, trash, rubbish, minor structures such as sheds, shelters and fences, and all extraneous water within the work limits.

#### **Section 2-03.02 Preservation of Property**

The Contractor shall take precautions to protect all public and private properties and improvements not indicated to be removed including but not limited to, utilities and structures, trees, landscaping, roadways, drainage courses, and buildings encountered within or adjacent to the project limits. The Contractor shall also protect all existing facilities indicated to be removed until such time as the Engineer deems that the function of such facilities has passed to the improvements provided for under the Contract or that such function is no longer required.

Only those trees and plants designated for removal shall be removed.

#### **Section 2-03.03 Final Cleaning Up**

Nothing herein shall be construed as relieving the Contractor of his responsibility for final clean-up of the project as provided in Section 4-01.02, "Final Cleaning Up" of the State Standard Specifications. Items which are required to be salvaged, including traffic signs and any other items so noted on the Plans, shall be carefully removed and delivered to the District. Except as otherwise provided in the Project Special Provisions, all other materials removed are the property of the Contractor and shall be disposed of by him at his expense in a manner approved by the Engineer.

Burning will not be permitted.

#### **Section 2-03.04 Disposal**

Surplus excavated material shall become the property of the Contractor and shall be disposed of outside the project boundary in accordance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right-of-Way," of the State Standard Specifications.

#### **Section 2-03.05 Drainage**

Throughout the prosecution of the work under the Contract, the Contractor shall keep all the work areas free of all water including but not limited to, rainwater, groundwater, and leachate and shall take precautions to prevent runoff onto adjacent properties. These precautions shall include but not be limited to dikes, berms, channels, diversions, pumping equipment, and other facilities necessary to control runoff. All work areas shall be constructed or provided with proper and adequate drainage facilities to avoid trapped and/or ponded water which may cause failure of or damage to constructed improvements or adjacent properties.

### **Section 2-03.06 Measurement and Payment**

The contract unit or lump sum price for Clearing and Grubbing shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work in clearing work areas, disposing of objectionable materials, and providing drainage and no additional compensation will be allowed for Clearing and Grubbing.

Any change in the quantity or extent of work to be performed under clearing and grubbing caused by the issuance of a Contract Change Order will be paid in accordance with the provisions of Section 1-08.09, "Work on Time and Materials Basis" of these Standard Specifications.

## **SECTION 2-04 SAFETY**

### **Section 2-04.01 General**

The Contractor shall bear full responsibility for compliance with all applicable safety and health standards, rules, regulations, and orders established by the State of California Department of Occupational Safety and Health (Cal-OSHA) and the Federal Department of Occupational Safety and Health (OSHA).

In accordance with Section 1-05.07, "Emergency Conditions" of these Standard Specifications, the Engineer may direct the Contractor to use other equipment, personnel, or methods when, in the opinion of the Engineer, the use of improper or insufficient personnel, materials, or methods would present a hazard to the public or expose the District's facilities to a risk of damage. The Engineer's direction shall only be in the interest of stopping unsafe practices and shall not be construed as superintendence of the Contractor's forces.

### **Section 2-04.02 Safety Plan**

When provided for in the Contract Documents and whenever the Contract Documents provide for extended trenching operations in excess of 4-LF in depth, the Contractor shall have prepared by an engineer registered in the State of California (hereinafter referred to as the *Safety Engineer*), a *Safety Plan* for safety measures on the project. This *Safety Plan* shall include but not be limited to, the following

1. Traffic control requirements for the delivery of materials;
2. Storage and handling of delivered materials, including but not limited to installation as required;
3. Shoring plans for all excavations including but not limited to underground tanks, tank ventilation, retaining walls, vaults, and piping;
4. Provisions for compliance with the OSHA requirements for *Permit-Required Confined Spaces*;
5. Any other plans required for compliance with those regulatory agencies having jurisdiction over the work.

### **Section 2-04.03 Safety Inspections**

The Safety Engineer for this Safety Plan shall make periodic inspections of the site and the work to ensure

compliance with these requirements and to make any adjustment or revision to the original safety plan required by field conditions or the Contractor's work. A report of each inspection shall be submitted to the Engineer within one working day of the inspection. No work or element of work noted in the *Safety Plan* or this report shall be commenced without the approval of the *Safety Engineer*. Any work or condition not in compliance with these requirements shall be immediately corrected to the *Safety Engineer's* satisfaction or suspended until such time as compliance can be met. Suspended work shall not recommence until receipt of written notice from the *Safety Engineer* to the Engineer that corrective action has been taken to his satisfaction.

#### **Section 2-04.04 Site Investigations**

The Contractor and his Safety Engineer are encouraged to perform their own site investigations to satisfy themselves as to the conditions on-site including, if desired, additional subsurface investigations. No additional compensation will be considered for changed conditions that might reasonably have been foreseen by such investigation. Arrangements for site investigations may be arranged through the Engineer or the District.

#### **Section 2-04.05 Measurement and Payment**

When the Contract Documents provide a proposal item for Safety Plan or Trench Safety, the contract lump sum price for Safety Plan or Trench Safety shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work in preparing the Safety Plan, implementing the Safety Plan, constructing embankment shoring and performing safety inspections and no additional compensation will be allowed therefor.

When the Contract Documents do not provide a proposal item for Safety Plan or Trench Safety, compliance with applicable safety laws, regulations, and ordinances shall be considered as incidental to other items of work and included in the contract unit or lump sum price for such items of work and no additional compensation will be allowed therefore.

### **SECTION 2-05 TRAFFIC CONTROL**

#### **Section 2-05.01 Description**

The Contractor shall provide a traffic control system commensurate with public safety and the requirements of agencies having jurisdiction over the work. All work shall be in accordance with the CalTrans Manual of Traffic Controls, these Standard Specifications, and the Contract Documents. All traffic control systems shall be installed and operated in accordance with these Standard Specifications and the requirements of agencies having jurisdiction over the work. The exact spacing of elements of the traffic control plan may be adjusted to account for the field conditions as found. No elements shall be installed without the prior written approval of the Engineer.

The Contractor shall perform all traffic control measures required by the Contract Documents, encroachment permits, and as directed by the Engineer as provided for elsewhere herein. When provided for in the Contract Documents, the Contractor shall prepare a Traffic Control Plan that delineates the traffic control measures anticipated by the Contractor, those required by agencies having jurisdiction over the work area, and any special provisions cited in the Contract Documents

### **Section 2-05.02 Traffic Control System**

In general, the traffic control system used shall be in general conformance with the provisions of Standard Plan No. T12, "TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON MULTILANE CONVENTIONAL HIGHWAYS" AND Standard Plan No. T13, "TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON TWO LANE CONVENTIONAL HIGHWAYS" of the CalTrans Standard Plans. Specific placement of all signs, barricades, cones, delineators, and flaggers shall be adjusted to reflect conditions found in the field while maintaining the intent of such standard plans.

When provided for in the Contract Documents, the Contractor shall have a Traffic Safety Plan prepared by an engineer registered in the State of California as a Traffic Engineer.

Throughout the term of the contract, the Contractor shall maintain all traffic control measures, including but not limited to, construction area signs, flaggers, cones and delineators, and other measures required by the Contract Documents, encroachment permits, the Traffic Engineer, and the Engineer as provided for elsewhere in these Standard Specifications.

The Contractor shall maintain all traffic control equipment and procedures in good working order throughout the life of the contract and shall promptly repair or replace any elements of the traffic control plan damaged or displaced during construction, due to any cause, at the direction of the Engineer.

### **Section 2-05.03 Encroachment Permit Requirements**

All work on public right-of-ways shall be subject to the Encroachment Permit conditions of the Agencies of jurisdiction. The Contractor shall make himself thoroughly familiar with such permit conditions in preparing his proposal. Throughout the Contract, the Contractor shall comply with all requirements and conditions of such permits regarding traffic control in and around the limits of work

### **Section 2-05.04 Construction Area Signs**

**Section 2-05.04A Description** - Construction area signs shall include all temporary signs necessary for the control of traffic through or around the work area, including both stationary mounted and portable signs as defined herein. The Engineer shall make the sole determination of what type of sign or signs may be used for construction traffic control.

**Section 2-05.04B Stationary-Mounted Signs** - Stationary-mounted signs shall be installed on wood posts in general

conformance with Standard Plan No. T12, "TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON MULTILANE CONVENTIONAL HIGHWAYS" and Standard Plan No. T13 "TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON TWO LANE CONVENTIONAL HIGHWAYS" of the CalTrans Standard Plans. The exact spacing of stationary-mounted signs shall be adjusted as required by field conditions agencies having jurisdiction over the work areas. All elements of the traffic control system shall be shown on the traffic control plan.

All stationary-mounted signs shall be constructed of sheet aluminum base material not less than 0.063-inch thick. Reflective sheeting shall meet CalTrans Specifications for Reflective Sheeting Aluminum Signs. Used signs may be considered satisfactory if the sheeting has not deteriorated due to weathering, vandalism, or other causes that impair visibility or legibility. The colors of reflective sheeting shall be in accordance with the Manual of Traffic Controls, and shall not have faded to the point where there is a discernible difference between the daytime and nighttime when viewed under vehicle headlamps on low-beam.

Legends may be applied by the screening process or by the use of pressure sensitive cut-out sheeting. Size and spacing of letters and symbols shall be in accordance with CalTrans sign specifications sheets available from the CalTrans Central Office of Business Management.

**Section 2-05.04C Portable Signs** - Portable signs shall be one of three types, rigid or flexible or flashing arrow/message board:

1. **Rigid Portable Signs** - Rigid portable signs shall be in accordance with Section 2-05.03B, "Stationary-Mounted Signs" of these Standard Specifications and mounted on portable folding or non-folding barricades, Type I, II, or III in accordance with the "Manual of Traffic Controls" published by the State Department of Transportation. Rigid portable signs may be permitted by the Engineer as a substitute for stationary-mounted signs where, in the opinion of the Engineer, use of stationary-mounted signs would be impracticable due to field conditions. When rigid portable signs are substituted for stationary-mounted signs, only Type III barricades shall be used and they shall be counterweighted with a sufficient number of sandbags to prevent their displacement. The Contractor may submit an alternative design for a substitute to the stationary-mounted sign but shall not install such substitute without the written approval of the Engineer. The Contractor shall not substitute portable, rigid signs for stationary-mounted signs without the express written direction of the Engineer unless such substitution is provided for in the Contract Documents.

As required by field conditions, the rigid portable barricades shall be counterweighted with a sufficient number of sandbags or other weights to prevent displacement or overturning due to weather and traffic conditions found in the field.

Solid materials such as concrete masonry units, concrete debris or other materials that could become a

hazard if struck by traffic shall not be used to ballast portable barricades.

2. **Flexible Portable Signs** - Flexible portable signs shall be fabricated from cotton drill, flexible industrial nylon mesh fabric, or other fabric material approved by the Engineer. Size, legend, and color shall be in accordance with Section 2-05.03B, "Stationary-Mounted Signs" of these Standard Specifications.

Flexible, portable signs shall be mounted on commercially fabricated stands approved by the Engineer. Such stands shall position the sign a minimum of 5-LF above the roadway surface and shall be so constructed as withstand displacement or upset due to wind or traffic activity. If necessary, the base of the stand shall be counter-weighted by a sufficient number of sandbags or other weights to ensure stability in the weather and traffic conditions found in the field.

Solid materials such as concrete masonry units, concrete debris or other materials that could become a hazard if struck by traffic shall not be used to ballast portable signs.

Flexible, portable signs shall only be used for daily operations and shall not be used to control traffic during periods when the Contractor has ceased operations for the day.

3. **Flashing Arrow and Message Boards** - Flashing arrow and message boards shall be used to enhance the conveyance of traffic control information to drivers approaching the work areas. Each flashing arrow or message board shall be in accordance with the provisions of Section 12-3.03, "Flashing Arrow Signs" of the CalTrans Standard Specifications and Section 5-06, "Lighting Devices" of the Manual of Traffic Controls published by the State Department of Transportation.

**Section 2-05.04D Traffic Cones, Portable Delineators, and Portable Barricades** - Wherever required by the Contract Documents, the Traffic Control Plan, or the Engineer, the Contractor shall provide cones, delineators, or portable barricades to define the work areas.

1. **Traffic Cones and Delineators** - Traffic cones and portable delineators shall be fabricated from highly pigmented fluorescent orange polyvinyl material.

The base of each traffic cone shall be integral to the top. The base may be orange or black in color and shall be of sufficient weight to minimize displacement or overturning due to either or traffic conditions found on site. Additional weight may be added by the use of sand bags or other low profile, pliable material. The overall height of the cone shall be at least 28 inches with a minimum bottom inside diameter of 10.5 inches. Traffic cones shall be capable of direct or glancing impact from a vehicle without damage to either the vehicle or the traffic cone. The base

shall be square or rectangular in shape to prevent rolling. Traffic cones shall be as manufactured by Services and Materials Company or approved substitute.

Portable delineators shall be fabricated of material of sufficient rigidity to remain upright when unattended and collapsible or flexible upon direct or glancing impact from a vehicle without damage to either the vehicle or the portable delineator. The base shall be square or rectangular in shape to prevent rolling.

The vertical portion of the portable delineator shall be not less than 3-inches in width or diameter. The minimum height shall be 37-inches above the pavement surface. A minimum of 2 reflective bands each not less than 3-inches wide shall be mounted a minimum of 1-1/2 inches apart such that at least one of the bands is between 30 and 36-inches above the road surface. Portable delineators shall be manufactured by Services and Specialties Company or approved substitute.

2. **Reflective Bands** - Reflective bands shall be silver-white in color and fabricated from flexible sheeting having not less than the following dry reflectance values at a 0.2 and 0.5 degree divergence angle, expressed in units of candlepower per footcandle per square foot as determined by California Test 642. The wet reflectance values shall be not less than 90 percent of the dry values when tested in accordance with the Federal Highway Administration Specification FP-79, Section 718.01 (c).

**TABLE 2-01**  
**Reflectance Values of Reflective Band Sheeting**

Divergence Angle (degrees)	Incidence Angle (degrees)	Dry Reflectance Value
0.2	-4	250
0.2	30	95
0.5	-4	200
0.5	30	60

Only one type of portable delineator shall be used on the project.

3. **Barricades** - Barricades fabricated in accordance with Table 5-1, "Barricade Characteristics;" and Figure 5-3, "Typical Barricades" of the CalTrans Manual of Traffic Controls shall be placed adjacent to all open excavations, stockpiles material, or equipment left unattended with the permission of the Engineer. Barricades left in-place during periods of darkness shall be equipped with battery-operated flashing amber lights in accordance with Section 2-05.03D(iv) of these Standard Specifications. Each lit barricade shall be inspected and tested for flasher operation

daily and repaired or maintained as necessary. Illuminated and/or reflectorized cones and delineators shall not be used in lieu of portable barricades for night traffic control.

4. **Portable Flashing Beacons** - Portable flashing beacons shall consist of a lighting unit, a flasher unit, a standard, a battery power source, and a base. The units shall be assembled to form a complete, self-contained flashing unit which can be delivered to the job site and placed in immediate operation.

The lens shall have a visible diameter of 6-inches of plastic or glass conforming with ANSI Standard D-10.1 for yellow traffic signal lens. The flasher shall be capable of a sustained 50 to 60 flashes per minute. The battery power source shall be mounted in the base and the base shall be capable of attachment to a Type I, Type II, or Type III portable barricade. The portable flashing beacons shall be Flex-O-Lite, as manufactured by Flex-O-Lite, Incorporated or approved substitute.

5. **Flaggers**- The Contractor shall provide flaggers to direct traffic through the work area in addition to the construction area signs whenever necessitated by the field conditions, the Traffic Plan, or directed by the Engineer. Flaggers shall be equipped with all safety clothing and communication equipment required by the Industrial Safety Orders of the State of California and the current edition of the CalTrans publication "Instructions to Flaggers". Flaggers shall be dedicated to traffic control and shall not be assigned any other duties while acting as flaggers.

Paddle signs used by flaggers shall be in accordance with Section 2-05.03B, "Stationary-Mounted Signs" of these Standard Specifications. The sign shall be handhold able for extended periods of time at a height of 5-LF above the pavement surface. A rod-mounted flagger sign may be used instead of the paddle-type at any time and shall always be used where prolonged queuing is anticipated.

When flaggers are out of sight of each other, both shall be equipped with two-way radio equipment with channels dedicated solely to the flagging operation. Additionally, in areas where full road closure controlled by flaggers is necessary, an additional person shall be stationed at the actual site of work equipped with a radio on the same channel or frequency as the flaggers. This person shall act as the liaison between the flaggers and the construction operation and shall keep the flaggers informed of the status of the operation at all times. This person shall also be dedicated to the flagging operation. As necessary, flaggers may direct the foreman or superintendent to temporarily suspend operations to permit passage of traffic.

Queue times shall be kept as short as possible and in no case longer than 15 minutes. Emergency vehicles, school buses, and other vehicles that demonstrate an emergency need shall be passed through immediately.

#### **Section 2-05.05 One-Way Traffic, Lane Closures, and Detours**

The Contractor shall maintain at least one lane open to traffic at all times while construction activities are in progress. The Contractor shall provide all flaggers necessary to control vehicles through the work area. Flaggers shall be located at each end of the work area and shall be able to maintain communications via visual signal or two-way radio communication at all times. The *Superintendent* or his appointee shall oversee the construction activities to ensure that the flaggers are fully informed of all traffic conditions at all times.

Except as provided for in the Contract Documents, no streets may be closed or detours made without the express written approval of the Engineer and the Agency of jurisdiction over the work areas. If the Contractor proposes to close lanes on multi-lane streets or detour public traffic around work areas, he shall submit a plan for such detour at least 4-working days or that period provided for in the Contract Documents prior to his proposed schedule to commence detours or lane closures.

This plan shall include but not be limited to, the following information:

1. Limits of detour or lane closures;
2. Reason for detour or lane closure;
3. Duration of detour or lane closure;
4. Signing and controls for detour and lane closure;
5. Additional information that will assist in the review of the plan.

No lane closure or detour shall be effectuated without the express written permission of the Engineer and the Agency of jurisdiction. When a *Traffic Control Plan* is provided for in the Contract Documents, the plan for detours and lane closures shall be included in such *Traffic Control Plan*.

#### **Section 2-05.06 Pedestrian Access**

The Contractor shall provide pedestrian access through the work areas at all times. This access may move from one side of the street to the other as construction activities require. The Contractor shall be responsible for the safety of all pedestrians transiting the work areas at all times.

#### **Section 2-05.07 Access to Adjacent Properties**

The Contractor shall maintain access to adjacent properties at all times during construction. When construction activities require that such access be interrupted, the Contractor shall first notify all property owners and/or tenants that their access will be interrupted, the commencement and duration of the interruption, and request that the property owners and/or tenants provide the Contractor with any special access requirements such as but not limited to, those of the elderly or the disabled. The access to all adjacent properties shall be restored whenever construction activities are not in progress, at the end of each work day, and over all weekends or holidays. The access shall be restored by the closure of the excavation, removal of materials and equipment, or installation of steel plates to transition over construction activities.

The Contractor shall notify the property owner and/or tenant at least 24-hours in advance of interrupting access by personally contacting the property owner and/or tenant. Door hangers may be used to provide this notification. The

Contractor shall notify the Engineer of all instances where disruption of access will be required and of the notification of the property owners and/or tenants. The requirement for notification 24-hours in advance may be waived when the following conditions are met:

1. The duration of interruption is less than 2-hours;
2. The property owners have been notified immediately prior to commencing the interruption;
3. The Contractor assists the property owner and/or tenant to leave the property prior to commencing the interruption;
4. The Contractor accommodates any request for assistance by the property owner and/or tenant in accessing the property;
5. The property owner and/or tenant is unavailable at the time of commencing the interruption and during the interruption.

#### **Section 2-05.08 Open Trenches**

No trenches shall be left open overnight or when construction activities are not in progress. Each trench shall be backfilled to the surface or covered with steel plates if backfilling is impracticable. The Contractor shall not open more trench than can be successfully completed and backfilled in one day. Where this requirement may be impracticable, the Contractor shall request permission from the Engineer to extend the trench to its practical limit and to cover it with steel plates.

Open trenches parallel to traveled lanes shall be marked with cones, delineators, or portable folding barricades during active construction operations. There shall be a sign at each end of the trench warning of an open trench. The Contractor shall be responsible for the safety of all persons having access to an open trench including but not limited to the general public, the Contractor's personnel, and employees and agents of agencies having jurisdiction over the work areas.

#### **Section 2-05.09 Measurement and Payment**

**Section 2-05.09A Lump Sum Basis** - When traffic control is provided for in the Contract Documents to be paid for as a lump sum item, the contract lump sum price shall include full compensation for all labor, materials, equipment, and tools and for doing all work in establishing traffic control through and around the work areas. It shall include but not be limited to, the Traffic Control Plan, all construction area signs, cones, delineators, portable barricades, flashing lights, and flaggers and the notification, installation, maintenance, and equipage necessary for the control of traffic through and around the work site.

**Section 2-05.09B Work under Time and Materials Basis** - When traffic control is provided for in the Contract Documents to be paid on a time and materials basis, the Contractor shall maintain all records and receive all approvals from the Engineer for the establishment and maintenance of traffic control through and around the work areas. The Contractor shall submit records in accordance with Section 1-08.09, "Work on Time and Materials Basis" of these Standard Specification for all labor, materials, equipment, and tools and for doing all work in establishing and maintaining the traffic control system through and around the work areas. Such records shall include but not be limited to, the Traffic Control Plan, all construction area signs,

cones, delineators, portable barricades, flashing lights, and flaggers and the notification, installation, maintenance, and equipage necessary for the control of traffic through and around the work site.

**Section 2-05.09C Incidental Basis** - When a pay item for traffic control is not included in the Contract Documents, all costs for such traffic control shall be considered as incidental to other items of work and all costs associated with traffic control shall be included in the contract unit or lump sum prices for other items of work and no additional compensation will be allowed for traffic control.

## **SECTION 2-06 EROSION CONTROL**

### **Section 2-06.01 General**

At all times during the prosecution of the work on a project, the Contractor shall take all measures necessary to prevent damage to the work areas or adjacent properties due to the erosion of materials caused by the effects of weather. Such measures shall include but not be limited to, channelization, berms, dikes, catchment structures, sedimentation basins, silt fences, and seeding in accordance with these Standard Specifications, the Contract Documents, and agencies having jurisdiction over the site of the work.

### **Section 2-06.02 Erosion Control Plan**

The Contractor shall have an erosion control plan for the management of storm runoff within the work areas. Such plan for work involving the mass grading of soils shall include drawings that show the overall site of work, the routing and control of runoff through the work areas, sedimentation basins, and other pertinent details.

The Contractor shall have the erosion control plan for mass grading areas prepared by a Registered Civil Engineer.

An erosion control plan will not be required for the construction of pipelines, however the Contractor shall take such measures as are necessary to prevent the erosion of the trench line or adjacent property. Such measures shall be approved by the Engineer prior to commencing construction.

### **Section 2-06.03 Maintenance**

The Contractor shall be responsible for the inspection and maintenance of all erosion control facilities constructed as part of the project. In anticipation of any forecast storm, the Contractor shall inspect and, as appropriate, restore all erosion control facilities to ensure that optimum protection is provided. During any storm or storms that continue more than one day, the Contractor shall inspect and restore all erosion control measures on a daily basis, including weekends and holidays as necessary. The Contractor shall provide all materials, equipment and personnel necessary to accomplish erosion control.

Upon completion of all work on the project and, as appropriate, successful germination of erosion control seeding, the

Contractor shall remove all erosion control measures and structures and restore the site to its original condition, insofar as practicable.

If the Engineer determines that the implementation of erosion control measures constitutes an emergency in accordance with Section 1-05.07, "Emergency Conditions" of these Standard Specifications, the Contractor shall have responsible personnel on the site within one hour of verbal notification by the Engineer and shall immediately commence work on such erosion control measures as are required by current conditions. If the Engineer determines that forces other than the Contractor's must be mobilized due to a condition posing imminent hazard to life or property, he will authorize the mobilization of such forces as are necessary for the protection of life and property.

In determining unavoidable delays in accordance with Section 1-07.05C, "Unavoidable Delays" of these Standard Specifications, erosion control work will not be considered constructive work on the project in the calculation of the number of hours worked to make that determination.

**Section 2-06.04 Seeding**

Areas including but not limited to, cut slopes, fill slopes, building pads, and mass grading that are to be left in an exposed condition upon completion of all work shall be seeded by the hydro-mulch process with a mixture of grasses and seed conforming with the requirements of the Santa Cruz County Erosion Control Mix in the proportions listed in Table 2-02.

**TABLE 2-02  
Santa Cruz Erosion Control Mix**

Seed	Percentage by Weight
Blando Brome Grass	42.50%
Hycon Rose Clover	34.18%
Zorro Fescue	8.21%
Creeping Red Fescue	14.01%
Various	1.10%

If the Contractor wishes to use an alternative mixture, he shall submit the mixture to the Engineer for approval prior to proceeding with the seeding operation.

The seed shall be thoroughly mixed with inert fiber material, fertilizer (16-20-0) and water and applied under pressure with a nozzle. The selection of agitator, air pressure, and nozzle size shall be the responsibility of the Contractor. The total application rate for erosion control seeding shall not be less than 35 pounds per acre. Inert fiber shall be applied with the seeding at a rate of at least 2,000 pounds per acre. Fertilizer shall be applied at the rate of 350 pounds per acre.

Except as provided for in the Contract Documents, the Contractor shall be responsible for providing adequate

watering of the seed mix until such time as the site evidences adequate germination. Such evidence shall be the presence of healthy, vigorous plants over the entire site. Areas in excess of 100 square-feet evidencing poor or non-existent germination shall be reseeded where directed by the Engineer.

#### **Section 2-06.05 Measurement and Payment**

Except where provided in the Contract Documents to be paid on a unit price or lump sum price basis, erosion control measures shall be considered as incidental to other items of work and no measurement will be made thereof.

Where provided in the Contract Documents to be paid for on a unit price basis by area, the quantities of erosion control will be determined by measurement of the area to be treated for erosion control to the nearest 10 square-feet or 1 square-yard.

Where provided for in the Contract Documents to be paid for as a unit price or lump sum price item, the contract unit or lump sum price for Erosion Control shall include full compensation for providing all materials and equipment and for performing all work involved in Erosion Control including but not limited to, erosion control plans, grading, channelization, sedimentation basins, seeding, maintenance and inspection, and emergency response as provided for in these Standard Specification, the Contract Documents, and as directed by the Engineer.

### **SECTION 2-07 UTILITY MARKING SYSTEMS**

#### **Section 2-07.01 General**

Wherever provided for in the Contract Documents, the Contractor shall mark the improvements in accordance with the colors shown in Table 2-03. Buried pipelines and facilities may be marked by the use of pigmented pipe materials, epoxy coated pipe and fittings, detectable locator tape, above grade flexible marking post, painted covers or such other marking system as may be provided for in the Contract Documents.

The Contractor shall submit color chips for approval in accordance with Section 1-07.10, "Submittals" of the District Standard Specifications prior to applying or installing any markings. All paint and coating materials shall be applied in accordance with the Manufacturer's recommendations. The specific color cited herein shall be considered as the basis of comparison by which the submitted color will be evaluated.

**TABLE 2-03  
Colors for Utility Marking**

Product	Color	Equivalent Color Standard		
		Ameron	Carboline	Rust-Oleum <sup>2</sup>
Raw Water	Med. Grey	GR-2	2713	V2188
Potable Water	OSHA Safety Blue	BL-6	S150	V2124
Recycled Wastewater	OSHA Safety Purple	--	--	V2167
Backwash Water	Buff Brown	BR-3	G243	V2171
Chlorine (NaCl)	Haze Green	GN-5	2369	--
Caustic (NaOH)	Deep Yellow	YE-4	5607 <sup>1</sup>	V2147
Meta-Bisulfite (H <sub>2</sub> SO <sub>2</sub> )	OSHA Safety Black	BK-2	C900	V2176
Poly Ortho Phosphate (PO)	OSHA Safety White	WH-2	S800	V2192
Gaseous Product (Gas, Oil, Diesel, Steam, Chemical)	OSHA Safety Yellow	YE-3	S625	V2143
Electric	OSHA Safety Red	RD-2	S525	V2163
Communications (Telephone, CATV, Fiber Optic)	OSHA Safety Orange	OR-2	S401	V2155
Wastewater, Storm Drain	OSHA Safety Green	GR-6	S375	V2133
Compressed Air	Ivory	YE-2	0857 <sup>1</sup>	--

<sup>1</sup> Lead free

<sup>2</sup> Rust-Oleum Colors are for Labor Saver<sup>®</sup> Hard Hat<sup>®</sup> Industrial Coatings.

Underground utility installations shall be marked with a detectable underground utility marking tape in colors conforming with the American Public Works Association Uniform Color Code or that of the local One Call Locating Agency.

**Section 2-07.02 Measurement and Payment**

No separate measurement will be made for work relating to marking systems. Payment for installing and painting marking systems shall be considered as included in the contract unit or lump sum price for other items of work and no additional compensation will be allowed for marking.

**END OF DIVISION 2**