

## **SECTION 28**

### **SHORING**

#### 28-1 General

##### 28-1.01 Scope

This section shall include the designing, supplying, installing, and removal of all sheeting, shoring, bracing or equivalent methods herein referred to collectively as "shoring" for protecting life and limb during the progress of any portion of the work.

##### 28-1.02 Description of Work

It shall be the responsibility of the Contractor to decide on the manner of support to provide for trench and excavation safety. Excavation for any trench or pit five feet or more in depth shall not begin until the Contractor has obtained a trenching permit from CAL OSHA. This may include requirements for submittals and approval of detailed plans for eliminating the hazards of caving ground during the excavation of the trench or pit, and hazards during the time workmen must enter the trench or pit. Such detailed plan shall be submitted at least 15 days before the Contractor intends to begin excavation of the trench or pit and shall show the details of the design of shoring, bracing, sloping or other provisions to be made for eliminating hazards during such excavation. No such plan shall allow the use of shoring, sloping or a protective system less effective than that required by the Construction Safety Orders of the Division of Industrial Safety and if such plan varies from the shoring system standards established by the Construction Safety Orders, the plan shall be prepared and signed by an Engineer who is registered as a Civil or Structural Engineer in the State of California. The District Engineer may require submission of design calculations and other information on the shoring system, as he finds necessary.

Shoring, sheeting and bracing shall be removed after construction, unless otherwise directed by the District Engineer, and shall be withdrawn in a manner that will prevent caving of the sides or top of excavation.

##### 28-1.03 Submittals

Submittals supplied by the Contractor shall include a trenching permit, shoring plan with design calculations. The Contractor's attention is directed to the General Conditions of this Contract under "Submittals".

#### 28-2 Measurement and Payment

##### 28-2.01 Measurement

Measurement for shoring shall be made as the percent complete. This bid item will be considered 100% complete upon completion of the contract as a whole, regardless of the amount of shoring required.

### 28-2.02 Payment

Payment shall be based on the percent complete applied against the contract lump sum price. The lump sum contract price for shoring shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work necessary for the installation and removal of shoring, all as described in these specifications. A description of the work is included at the head of this section. Any work associated herewith and not included in this or other bid items shall be deemed as included in the contract price for shoring.

If no dollar amount is shown, the cost shall be considered as included in the bid items requiring the shoring.