

**Section 01570****TRENCH SAFETY SYSTEM****1.0 GENERAL****1.01 SECTION INCLUDES**

- A. Trench safety system for the construction of trench excavations.
- B. Trench safety system for excavation of utilities, excavation of structures, and embankment which fall under provisions of federal, state, or local excavation safety laws.
- C. References to Technical Specifications:
  - 1. Section 01200 – Measurement & Payment Procedures
  - 2. Section 01350 – Submittals
- D. Referenced Standards:
  - 1. Occupational Safety and Health Administration (OSHA)
- E. Definitions:
  - 1. Trench. A narrow excavation (in relation to its depth) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet.
  - 2. Trench safety system requirements apply to larger open excavations if the erection of structures or other installations limits the space between the excavation slope and the installation to dimensions equivalent to a trench as defined.
  - 3. Trench safety systems include both Protective Systems and Shoring Systems but are not limited to sloping, sheeting, trench boxes or trench shields, slide rail systems, sheet piling, cribbing, bracing, shoring, dewatering or diversion of water to provide adequate drainage.

- a. Protective System: A method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of an adjacent structure.
  - b. Shoring System: A structure, which supports the sides of an excavation, to prevent cave-ins, maintain stable soil conditions, or to prevent movements of the ground affecting adjacent installations or improvements.
  - c. Special Shoring: A shoring system meeting Special Shoring Requirements for locations identified on the Plans.
4. Competent Person- one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

## **1.02 MEASUREMENT AND PAYMENT**

- A. Measurement for trench safety systems used on utility excavations is on a linear foot basis, measured along the centerline of the trench. Payment for trench safety systems includes payment for manholes and other line structures.
- B. Unless indicated in as a Bid Item, no separate payment will be made for shoring systems under this Section. Include cost in Bid Items for trench safety systems.
- C. If shown on the Plans and included in Section 00300 – Bid Proposal as a separate Bid Item, Measurement and Payment for Special Shoring system installation for trench excavation is on a square foot basis, measured and completed in place.
- D. Unless indicated as a Bid Item, no separate payment will be made for trench safety systems used on structural excavations under this Section. Include cost for trench safety system used on structural excavations in applicable structure installation.
- E. Unless indicated as a Bid Item, no separate payment will be made for trench safety systems used on roadway excavation or embankment under this Section. Include cost in applicable Sections.
- F. Refer to Section 01200 – Measurement & Payment Procedures.

## **1.03 SUBMITTALS**

- A. Make Submittals required by this Section under the provisions of Section 01350 – Submittals.
- B. Submit a safety plan specifically for the construction of trench excavation, excavation of utilities, excavation of structures, and embankment which fall under provisions of

federal, state, or local excavation safety laws. Design the Trench Safety Plan to be in accordance with OSHA Standards - 29CFR governing the presence and activities of individuals working in and around trench excavations, and in accordance with any Special Shoring requirements at locations shown on the Plans. Include in the plan, submittal of the contact information for the Competent Person.

- C. Have Shop Drawings for trench safety systems sealed, as required by OSHA, by a Professional Engineer, licensed by the State of Texas, retained and paid by the Contractor.

#### **1.04 REGULATORY REQUIREMENTS**

- A. Install and maintain trench safety systems in accordance with the provision of Excavations, Trenching, and Shoring, OSHA Standards—29 CFR, Part 1926, Subpart P, as amended, including Final Rule, published in the Federal Register Vol. 54, No. 209 on Tuesday, October 31, 1989. The sections that are incorporated into these Technical Specifications, by reference, include Standard 1926.650 – 652.
- B. A reproduction of the OSHA Standards – 29 CFR included in Subpart P – “Excavations” from the Federal Register Vol. 54, No. 209 is available upon request to Contractors bidding on the Work. The Owner assumes no responsibility for the accuracy of the reproduction. The Contractor is responsible for obtaining a copy of this section of the Federal Register.
- C. Include in the Trench Safety Program measures that establish compliance with the standard interpretation of the General Duty Clause, Section 5.(a)(1), of the Occupational Safety and Health Act of 1970 – 20 USC 654 which states, “Employers must shore or otherwise protect employees who walk/work at the base of an embankment from possible collapse.”
- D. Legislation that has been enacted by the State of Texas with regard to Trench Safety Systems is hereby incorporated, by reference, into these specifications. Under Texas Statutes, refer to Chapter 756 of the Health and Safety Code, SUBCHAPTER C. TRENCH SAFETY.
- E. Reference materials, if developed for this Work, will be issued by the Engineer along with the Bid Documents, including the following:
  - 1. Geotechnical information obtained for use in design of the trench safety system.
  - 2. Special Shoring Requirements.

#### **1.05 INDEMNIFICATION**

- A. Contractor shall indemnify and hold harmless the Owner, its employees, and agents, from any and all damages, costs (including, without limitation, legal fees, court costs, and the cost of investigation), judgments or claims by anyone for injury or death of

persons resulting from the collapse or failure of trenches constructed under this Contract.

- B. Contractor acknowledges and agrees that this indemnity provision provides indemnity for the Owner in case the Owner is negligent either by act or omission in providing for trench safety, including, but not limited to safety program and design reviews, inspections, failures to issue stop work orders, and the hiring of the Contractor.
- C. Review of the safety program by the Engineer will only be in regard to compliance with the Contract Documents and will not constitute approval by the Engineer nor relieve Contractor of obligations under state and federal trench safety laws.

## **2.0 PRODUCTS - Not Used**

## **3.0 EXECUTION**

### **3.01 INSTALLATION**

- A. Install and maintain trench safety systems in accordance with provisions of OSHA Standards – 29 CFR.
- B. Specially designed trench safety systems shall be installed in accordance with the Contractor's trench excavation safety program for the locations and conditions identified in the program.
- C. Install Special Shoring at the locations shown on the Plans.
- D. Obtain verification from a Competent Person, defined in this Section and as identified in the Contractor's Trench Safety Program, that trench boxes and other pre-manufactured systems are certified for the actual installation conditions.

### **3.02 INSPECTION**

- A. Conduct daily inspections by Contractor or Contractor's independently retained consultant, of the trench safety systems to ensure that the installed systems and operations meet OSHA Standards – 29 CFR and other personnel protection regulations requirements.
- B. If evidence of possible cave-ins or slides is apparent, immediately stop work in the trench and move personnel to safe locations until necessary precautions have been taken to safeguard personnel.
- C. Maintain a permanent record of daily inspections.

**3.03 FIELD QUALITY CONTROL**

- A. Verify specific applicability of the selected or specially designed trench safety systems to each field condition encountered on the Work.

**END OF SECTION**