
**SECTION 02280
TRENCH SAFETY SYSTEMS**

PART I: GENERAL

1.1 GENERAL REQUIREMENTS

- A. Trench safety system for the construction of trench excavations.
- B. Trench safety system for structural excavations which fall under provisions of State and Federal trench safety laws.

1.2 MEASUREMENT AND PAYMENT

A. UNIT PRICES:

- 1. Measurement for trench safety systems used on trench excavations is on a linear foot basis measured along the centerline of the trench, including manholes and other line structures.
- 2. No payment will be made for trench safety systems for structural excavations under this section. Include payment for trench safety system in applicable structure installation sections.
- 3. Refer to Section 01270 - Measurement and payment for unit price procedures.

B. Stipulated Price (Lump Sum):

- 1. If Contract is Stipulated Price Contract, payment for work in this Section is included in Total Stipulated Price.

1.3 DEFINITIONS

- A. A trench shall be defined as a narrow excavation (in relation to its depth) made below the surface of the ground at a minimum of five feet (5 Ft) in depth. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than fifteen feet (15 Ft).
- B. The trench safety system requirements shall apply to larger open excavations if the erection of structures or other installations limits the space between the excavation slope and these installations to dimensions equivalent of a trench as defined.
- C. Trench Safety Systems include, but are not limited to, sloping, sheeting, trench boxes or trench shields, sheet piling, cribbing, bracing, shoring, dewatering or diversion of water to provide adequate drainage.

1.4 SUBMITTALS

- A. Submittals shall conform to requirements of Section 01330 - Submittal Procedures.
- B. Submit a safety program specifically for the construction of trench excavation. Design the trench safety program to be in accordance with OSHA 29CFR standards governing the presence and activities of individuals working in and around trench excavations.

- C. Construction and shop drawings containing deviations from OSHA standards or special designs shall be sealed by a Professional Engineer licensed by the State of Texas retained and paid by the Contractor.
- D. Review of the Contractor's safety program by the Project Manager shall only be in regard to compliance with this specification and shall not constitute approval by the Project Manager nor relieve the Contractor of obligations under State and Federal trench safety laws.

1.5 REGULATORY REQUIREMENTS

- A. Install and maintain trench safety systems in accordance with the detail the Specifications set out in the provision of Excavations, Trenching, and Shoring, Federal Occupation Safety and Health Administration (OSHA) Standards, 29CFR, 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 specifications by reference include Sections 1926-650 through 1926-652.
- B. A reproduction of the OSHA standards included in "Subpart P - Excavations" from the Federal Register Vol. 54, No. 209 is available upon request to the Contractors bidding on City projects. The City 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. Legislation that has been enacted by the Texas Legislature with regard to Trench Safety Systems, is hereby incorporated, by reference, into these specifications. Refer to Texas Health and Safety Code Ann., §756.022 (Vernon 1991).
- D. Reference materials, if developed for a specific project, shall be issued with the Bid Documents, including the following:
 - 1. Section 00200 - Geotechnical Information: information obtained for use in design of the trench safety system.

1.6 INDEMNIFICATION

- A. The Contractor shall indemnify and hold harmless the City, 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. The Contractor acknowledges and agrees that this indemnity provision provides indemnity for the City in case the City 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.

1.7 REFERENCED STANDARDS

- A. CFCO – City of Friendswood Code of Ordinances.
 - 1. Ordinance 70-114 – Trench Excavation Safety Compliance.
 - 2. Ordinance 70-147 – Violation of Conditions; Revocation; Repair

- by the City.
- 3. Ordinance 70-148 – Surety Bond Required.
- B. CFTS – City of Friendswood Technical Specifications.
- C. OSHA – Occupational Safety and Health Administration.
 - 1. OSHA Standards, 29CFR, Part 1926, Subpart P.
 - 2. Federal Register Vol. 54, No. 209.
- D. Texas Health and Safety Code Ann., §756.022 (Vernon 1991).

PART II: PRODUCTS – Not Used

PART III: EXECUTION

3.1 INSTALLATION

- A. Install and maintain trench safety systems in accordance with provisions of OSHA 29CFR.
- B. Install specially designed trench safety systems in accordance with the Contractor's trench excavation safety program for the locations and conditions identified in the program.
- C. A competent person, as identified in the Contractor's Trench Safety Program, shall verify that trench boxes and other premanufactured systems are certified for the actual installation conditions.

3.2 INSPECTION

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

3.3 FIELD QUALITY CONTROL

- A. The Contractor shall verify specific applicability of the selected or specially designed trench safety systems to each field condition encountered on the project.
- B. The Project Manager, under written or oral authority of the Director or Deputy Director of Engineering shall stop work on portions of the Work where conditions, equipment or personnel put other personnel, the general public or adjacent property in danger of injury or damage. Work shall not resume until conditions have been remedied and verified by the Project Manager.

END OF SECTION

02280-3