

**Item No. 121
Trench Safety Systems****121.1 Description**

This item shall govern the following:

- A. Designing, furnishing, and installing a Trench Safety System for trench excavation;
- B. Dewatering the area as specified on the Drawings and/or required; and
- C. Maintenance and removal of the trench safety systems as determined by Contractor's Trench Safety Engineer and/or Contractor's Competent Person(s).

This Item also includes special clearing, excavation and backfilling for safety systems. At a minimum, this work shall conform to United States Department of Labor Rules 29 CFR, Part 1926 Occupational Safety and Health Administration (OSHA). The Competent Person(s) shall be on the project whenever workers are in an excavation trench. If special shoring requirements are needed based upon the conditions of the project, they shall be submitted to the Owner for review.

121.2 Trench Safety System Plan Submittal

Prior to, or at the Pre-Construction Conference, the Contractor shall submit to the Owner a Trench Safety System Plan sealed by a registered Professional Engineer licensed in the State of Texas. Notice To Proceed with construction will not be issued by the Owner until the Contractor has submitted a Trench Safety System Plan to the Owner.

The Trench Safety System Plan at a minimum shall conform to OSHA standards for sloping of sides, utilization of trench boxes, and/or utilization of shoring, sheeting and bracing methods. The Contractor shall be responsible for obtaining the geotechnical information necessary to complete the design of the Trench Safety System Plan. If the geotechnical information for the design of the improvements is acquired by the Owner or designated representative, it shall be provided to the Contractor for information purposes subject to the provisions of Standard Contract.

The submittal requirements of the Trench Safety System Plan must include:

- A. A Drawing or plan indicating specific designation of areas in which each type of system will be used, including the length of trench to be opened, the length of time that the trench will remain open, the means of egress, the storage of materials, allowable loads on trench walls, the methods for placing/compacting bedding/backfill within the safety of the system, any equipment restrictions and the subsequent removal of system,
- B. Drawings or manufacturer's data, as applicable, that describe the various elements of the Trench Safety System in sufficient detail that the workers can properly install the Trench Safety System,
- C. Recommendations and limitations for using systems.
- D. Sealed engineering calculations and/or equipment manufacturer's certifications, as applicable, that confirm that the system is designed to withstand the anticipated loadings

and that it can be fully installed/implemented in the designated space within the street right of way or easement provided by Owner or designated representative.

- E. A Certificate of Insurance of the Trench Safety Engineer's Professional Liability Insurance coverage meeting the requirements of the Standard Contract Documents shall be provided.
- F. Certificate of Completion of an OSHA-approved program indicating that the Contractor's Competent Person(s) has received training in "Excavation Safety".

121.3 Trench Safety System Plan Review

The review of the Trench Safety System Plan that will be conducted by the Owner or designated representative shall only relate to general conformance with OSHA standards and regulations. The Owner's failure to note exception(s) to the submittal shall not relieve the Contractor of any or all responsibility or liability for the Trench Safety System Plan. The Contractor shall remain solely and completely responsible for all trench safety systems and for the associated means, methods, procedures, and materials.

121.4 Construction Methods

The Contractor's Competent Person(s) shall be responsible for the maintenance of a copy of appropriate OSHA regulations onsite and the implementation of OSHA trenching safety regulations at the work site. Trenching shall be completed to the lines and grades indicated on the Drawings or as specified in various technical standard specification items requiring excavation and trenching and/or backfilling. The Contractor shall perform all trenching in a safe manner and shall maintain safety systems to prevent death or injury to personnel or damage to structures, utilities, or property in or near excavation.

If evidence of possible cave-ins or earthen slides is apparent or an installed trench safety system is damaged, the work in trench shall immediately cease, personnel evacuated from hazardous area and the Owner notified. Personnel shall not be allowed to re-enter the excavation until necessary repairs or replacements are completed and are inspected and approved by the Contractor's Competent Person(s). Repair and replacement of damaged safety system shall be at the Contractor's sole expense.

121.5 Changed Conditions

When changed conditions require modifications to the Trench Safety System, the Contractor shall provide to the Owner or designated representative a new design or an alternate Trench Safety System that is proposed by the Contractor's Trench Safety Engineer to address the changed conditions encountered. Copies of the new design or alternate system shall be provided to the Owner or designated representative in accordance with the requirements of Section 121.2, "Trench Safety System Plan Submittal". A copy of the most current Trench Safety System shall be maintained on site and made available to inspection and enforcement officials at all times.

Any changes to the Trench Safety System Plan that are initiated by the Contractor for operational efficiency or as a result of changed conditions, that could be reasonably anticipated, will not be cause for contract time extension or cost adjustment. When changes to the Trench Safety System Plan are necessitated by severe and uncharacteristic natural conditions or other

conditions totally out of the control of the Contractor, the Contractor may make a written request to the Owner for a Change Order to address the anticipated work. The Contractor shall notify the Owner in writing within 24 hours of the occurrence of changed conditions that the Contractor anticipates will require the submittal of a claim for additional compensation. Under "Changed Conditions" the work deemed immediately necessary by the Contractor to protect the safety of workers and public, equipment or materials may only be accomplished until the Owner or designated representative has a reasonable opportunity to investigate the Contractor's written request for a Change Order and respond in writing to the request.

121.6 Measurement

Trench Safety Systems shall be measured by linear foot through manholes and other appurtenances along the centerline of trench conforming to the Contractor's Drawings and specifications. Special shoring requirements shall be measured by the square feet of shoring used.

121.7 Payment

Payment for Trench Safety Systems, measured as prescribed above, will be made at unit bid price per linear foot of trench as measured in Section 121.6 per Contractor's Drawings and specifications. The unit bid price shall include full compensation for designing, furnishing, installing the system; for dewatering, maintenance, replacement, and removal of the Trench Safety Systems and for sloping, special clearing, and excavation necessary to safely implement the Trench Safety System Plan.

Payment will be made under the following:

Pay Item: Trench Safety Systems (all depths)	Per Linear Foot
Pay Item: Special Shoring	Per Square Foot

END