

SP- 095007
(New)



**SPECIAL PROVISIONS
FOR
SLIDE REPAIR**

**Lee County
ER-C056(84)--58-56**

**Effective Date
August 21, 2012**

THE STANDARD SPECIFICATIONS, SERIES 2009, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

1. SCOPE OF WORK

All the work shall conform to the plans, and to the Standard Specifications, Series 2009, except as modified by these Special Provisions (SP). The work provided for in these SP shall consist of furnishing all labor, materials, appliances, and equipment, and performing all work and operations in connection with the construction of these bid items and all other incidental and related work as set forth in these SP and as directed by the Engineer to make a complete and finished job.

Tie-back installation, excavation, grouting, and stressing in the vicinity of drilled shafts require special care and effort compared to general earthwork excavation. The Contractor should take this into account during bidding.

2. SAMPLING AND TESTING

All sampling and testing deemed necessary by the Engineer shall be performed by a Testing Laboratory selected by the Engineer. The costs of all such tests, showing compliance with the Specifications, shall be paid by the Contracting Authority, unless specified otherwise. However, in the event that any test indicates non-compliance with the Specifications, additional testing will be paid for by the Contractor to determine acceptability of the material or methods.

3. CONCRETE DRILLED SHAFTS (PIERS)

3.1. General Notes

Technical specification for concrete drilled shaft shall conform to Section 2433 of the Standard Specifications. It is noted that drilled shafts to be constructed in this project use W18x97 steel beams ($F_y = 50$ ksi) as shaft's reinforcement. Therefore, reinforcing steel cage mentioned in Article 2433.03, H, of the Standard Specifications shall not be used in this project. However, construction procedure and requirement for installation of W18x97 steel beams in drilled shafts shall be similar to those described in Article 2433.03 of the Standard Specifications.

3.2. Measurement and Payment

The completed drilled shafts and reinforcing steel shall be paid for at the contract unit price bid per linear feet item for "Reinforcing Steel for Pier" and "Concrete Drilled Pier, 36" Dia., to the nearest 6 inches as constructed.

4. TIEBACK ANCHOR SYSTEMS

4.1. General

This work shall cover the bearing plate and angle, grouted tie-back anchors, performance testing and proof testing of anchors.

4.2. Bearing Plates and Angles

4.2.1 General Requirement

The bearing plates and angles shall be welded to the I-beam (W18x97), which is embedded in drilled shaft's concrete, in accordance with the plans and steel specification described herein.

The bearing plates and angles will be constructed after installation of the grouted tie-back anchors.

4.2.2 Corrosion Protection

All steel surfaces exposed to daylight shall be corrosion protected according to Article 2408.02, Q, 2, b, 5 of the Standard Specifications.

4.2.3 Measurement and Payment

Tieback anchor systems will be the quantity shown in the contract documents. Payment for Tieback Anchor Systems at the contract unit price for each, will be full compensation for furnishing all materials, equipment and labor and for performance of all work necessary to complete the Tieback Anchor Systems in conformance with the contract documents or as ordered by the Engineer.

4.3. Grouted Tie-back Anchors

This work shall cover the installation of grouted tie-back anchors in accordance with drawings and these specifications. Anchors shall be a minimum of 28 feet long grouted section in shale bedrock. Tie-back anchors shall be 1 1/4 inch diameter 150 ksi steel threadbar anchors with double corrosion protection, in accordance with the drawings and specifications.

4.3.1 Prestressing Steel

The prestressing steel shall be steel threadbar, grade 150 ksi, conforming to ASTM Designation A722 "Uncoated High Strength Bar for Prestressing Concrete". Anchor plates, anchor nuts shall be compatible with the steel threadbar post tensioning system. Anchoring components shall develop at least 95% of the minimum ultimate strength of the bar tendon; couplers shall develop 100% of the ultimate bar strength.

4.3.2 Pressure Grout

The cement rich grout shall conform to the performance requirements noted on the drawings.

4.3.2.1 Quality Control

Due to the specialized nature of the grouting operation, bids only from pre-qualified grouting contractors will be accepted. The contractors on this project shall have experience on at least three projects in the past 3 years in similar tie-back anchor system and shall demonstrate ability to satisfactorily install the tie-back anchor systems. Prequalification shall be determined after review of a submittal of a list of accomplished projects similar in construction, with references, to the Contracting Authority.

Test cylinders must be taken by the Contractor daily or when the mix design changes. Cylinders shall be 3 inches by 6 inches. Three cylinders shall be taken and marked with the date and time of day taken. Cylinders shall be broken at 7 and 28 days with the remaining cylinder being held. A testing laboratory certified by the Engineer shall test cylinders.

The work plan must be submitted to the Engineer for review and comments a minimum of 5 calendar days prior to commencement of work in the field. The work-plan shall contain the following:

- The proposed mix design
- Estimate of the duration of the work time in the field
- Grout pump manufacturer, model number and pressure capacities
- Refusal criteria

The subsurface investigation report and the boring logs obtained during the subsurface investigation are included in the contract documents.

4.3.2.2 Testing and Quality Control

The Contractor shall pay the cost of sampling and testing. All daily drilling, grouting and testing reports shall be submitted to the Engineer within 24 hours. A level control system will be installed and operated by the Contractor for use during grouting.

Drilling reports shall contain at least the following information: Name of driller, type of drill, method used, date, and location of hole, tip depth or elevation of injection pipe.

Grouting reports shall contain at least the following information: Name of grouting technician, grout mix, quantity injected per stage, date, rate of pumping, beginning and final pressure obtained in each stage.

4.3.2.3 Measurement and Payment

The placed Pressure Grout will be the quantity shown in the contract documents. Payment for Pressure Grout at the contract unit price for cubic yards, will be full compensation for furnishing all materials, equipment, and labor and for performance of all work necessary to place the Pressure Grout in conformance with the contract documents or as ordered by the Engineer.

4.4. Installation and Execution

4.4.1 Installation of Tie-back Anchors

Anchor holes shall be drilled within plus or minus 2% of the illustrated alignment. The contractor shall keep record of all drilling procedures and times which shall be made available to the Engineer.

The installation of the anchors shall be observed by the Engineer.

4.4.2 Stressing

All stressing equipment must be used in accordance with the specification of the manufacturer and must, at all times, be maintained in good condition.

Stressing shall not be carried out until grout per the cylinder tests has attained 3000 psi.

Accurately calibrated load cells shall be employed to measure applied load on the anchors. The pumps, jacks and all tensioning equipment will be calibrated. Stressing of tie-back anchors shall be performed as noted on the drawings. The contractor shall analyze and publish the anchor test result; the Engineer shall determine whether the anchor is acceptable.

4.4.3 Measurement and Payment

The installed Tieback Anchors will be the quantity shown in the contract documents. Payment for Tieback Anchors at the contract unit price for linear feet, will be full compensation for furnishing all materials, equipment, and labor and for performance of all work necessary to install Tieback Anchors in conformance with the contract documents or as ordered by the Engineer.