Florida Department of Transportation

CHARLIE CRIST
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

STEPHANIE KOPELOUSOS
INTERIM SECRETARY

February 15, 2007

Mrs. Leslie McCarthy, PhD, P.E.
Program Operations Engineer
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Re: Office of Design, Specifications
Section 455
Proposed Specification: 4551506 Structures Foundations – Drilled Shafts - Excavations

Dear Mrs. McCarthy:

We are submitting, for your approval, two copies of a proposed Special Provision for Structures Foundations – Drilled Shafts - Excavations.

This change was proposed by Sastry Putcha of the State Office of Construction to remove the requirement that the Contractor maintain logs and records of drilled shaft and auger cast pile installations.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via Email to SP965DB or duane.brautigam@dot.state.fl.us.

If you have any questions relating to this specification change, please call Duane F. Brautigam, State Specifications Engineer at 414-4110.

Sincerely,

Signature on File

Duane F. Brautigam, P.E.
State Specifications Engineer

DFB/ft
Attachment
cc: General Counsel
Florida Transportation Builders' Assoc.
State Construction Engineer

STRUCTURES FOUNDATIONS – DRILLED SHAFTS – EXCAVATIONS. (REV 12/11/06)

SUBARTICLE 455-15.6 (Pages 534 and 535) is deleted and the following substituted:

455-15.6 Excavations: When pilot holes and/or load tests are performed, the Engineer will use the pilot hole and/or load test results to determine the authorized tip elevations and/or the authorized installation criteria of the drilled shafts. Drilled shaft construction shall not begin until pilot hole and/or load test reports are approved by the Engineer. Shaft tip elevations based on pilot hole results and/or load tests may vary from the Tip Elevations presented in the plans. Extend drilled shaft excavations deeper by extra depth excavation when the Engineer determines the material encountered while drilling the shaft excavation is unsuitable and/or is not the same as anticipated in the design of the drilled shaft.

455-15.6.1 Pilot Hole: When pilot holes are shown in the plans core a pilot hole, prior to shaft excavation, in accordance with ASTM D 2113 Standard Practice for Diamond Core Drilling for Site Excavation and the Department's Soils & Foundations Handbook using a double or triple wall core barrel through part or all of the shaft, to a depth of 3 times the diameter of the drilled shaft below the tip elevation shown in the plans, as directed by the Engineer. The Engineer may require the Contractor to cut any core to a total depth below the bottom of the drilled shaft excavation of up to 5 times the diameter of the drilled shaft. ~~Maintain a drilling log during pilot hole operations that contains information such as the description of and top and bottom elevation of each stratum encountered, depth of penetration, drilling time in each of the various strata, material description, and remarks. Classify, measure, and describe core samples in the drilling log. Furnish two copies of the drilling log, signed by a designated representative of the Contractor to the Department.~~

455-15.6.2 Cores: Take cores when shown in the plans or directed by the Engineer to determine the character of the material directly below the shaft excavation. Provide equipment to retrieve the core from a depth of 5 times the diameter of the drilled shaft below the bottom of the drilled shaft excavation in accordance with ASTM D 2113 Standard Practice for Diamond Core Drilling for Site Excavation. Cut the cores with an approved core barrel to a minimum depth of 3 times the diameter of the drilled shaft below the bottom of the drilled shaft excavation after completing the shaft excavation, as directed by the Engineer. The Engineer may require the Contractor to cut any core to a total depth below the bottom of the drilled shaft excavation of up to 5 times the diameter of the drilled shaft. ~~Maintain a drilling log during coring operations that contains information such as the description of and top and bottom elevation of each stratum encountered, depth of penetration, drilling time in each of the various strata; classify, measure, and describe core samples in the drilling log. Furnish two copies of the drilling log, signed by a designated representative of the Contractor to the Department~~.

For cores or pilot holes, use only a double or triple wall core barrel designed:

(a) to cut a core sample from 4 to 6 inches in diameter, at least 5 feet in length, and,

(b) so that the sample of material cored can be removed from the shaft excavation and the core barrel in an undisturbed state, and

The Engineer will inspect the cores and determine the depth of required excavation. When considered necessary by the Engineer, take additional cores. Place the core samples in suitable containers, identified by shaft location, elevation from and to, and job number, and deliver to the Department within 48 hours after cutting. When called for in the plans, substitute Standard Penetration Tests (SPT) for coring. In such cases, supply these tests at no additional cost per foot to the Department above that bid for core (shaft excavation).

Provide areas for the disposal of unsuitable materials and excess materials as defined in 120-5 that are removed from shaft excavations, and dispose of them in a manner meeting all requirements pertaining to pollution.

When shown in the plans, excavate bells to form a bearing area of the size and shape shown. Bell outlines varying from those shown in the plans are permissible provided the bottom bearing area equals or exceeds that specified. If the diameter of the bell exceeds three times the shaft diameter, drill the excavation deeper as directed and form a new bell footing. Excavate bells by mechanical methods.

Furnish the additional drilled shaft concrete over the theoretical amount required to complete filling any excavations for bells and shafts which are larger than required by the plans or authorized by the Engineer, at no expense to the Department.

ARTICLE 455-48 (Page 562) is deleted and the following substituted:

455-48 Inspection and Records.

The Engineer will monitor pile installation. ~~Maintain records of each pile installed, separate from those of the Engineer, showing:~~

~~1. Pile location~~
~~2. Ground elevation~~
~~3. Pile length~~
~~4. Tip elevation~~
~~5. Pile top elevation~~
~~6. Pay length (when piles are paid for separately)~~
~~7. Overburden length (length cast above the final grade point)~~
~~8. Pile diameter~~
~~9. Quantity of grout placed per yard of pile length~~
~~10. Theoretical quantity of grout required~~
~~11. Drilling time~~
~~12. Grouting time~~
~~13. All other pertinent data relative to the pile installation~~
~~14. Grout truck time of arrival to the site and batch time~~
~~15. Flow cone (consistency) results~~

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