

ORIGINATION FORM

THE INFORMATION BELOW IS TO BE PROVIDED BY THE ORIGINATOR

Modify Specification _____ 455 _____
Section/File number

New Section _____
Section number

Subject: Drilled Shafts – Excavations; Auger Cast Pile - Inspection and Records

Origination date: 11/9/06

Originator: Sastry Putchu
Office/Phone: Office of Construction/850-414-4148
Email address/ sastry.putchu@dot.state.fl.us
Userid: CN982SP

Problem statement: The intention of the original specification was for Contractor to have a role in documenting Contractor's work. But this process is causing confusion.

Information source: Process Reviews; Geotechnical and Construction engineers and Contractors

Background data: Specifications require contractor to maintain drilled shaft logs and record details of augercast pile installation. This spec is causing confusion because, drilled shaft and augercast pile installation are not under the domain of CQC. Department/CEI should be maintaining these logs. (CPAM has already has language requiring the Department/CEI to maintain these logs). Language that logs of Pilot Holes and Cores should be documented by the Department/CEI is being added.

Recommended

Usage Note: Require the Department/Consultant CEI to prepare the logs.

Expected fiscal impact, if

implemented: Because Contractor does not have to fill up the forms, this spec modification saves money to the Contractor

Implementation of these changes, if and when approved, will begin with the July 2007 letting.



Florida Department of Transportation

JEB BUSH
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

DENVER J. STUTLER, JR.
SECRETARY

MEMORANDUM

DATE: December 15, 2006

TO: Specification Review Distribution List

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

SUBJECT: Proposed Specifications Change: 4551506 Structures Foundations – Drilled Shafts – Excavation

In accordance with Specification Development Procedures, we are sending you a copy of a proposed new specification change for Structures Foundations – Drilled Shafts – Excavations.

This change was proposed by Sastry Putchu 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 share this proposal with others within your responsibility. Review comments are due within four weeks and should be sent to Mail Station 75 or to my attention via e-mail at SP965DB or duane.brautigam@dot.state.fl.us. Comments received after January 12, 2007 may not be considered. Your input is encouraged.

DFB/ft

Attachment

COMMENTS:

Submitted by:

Phone #:

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~~