

## ORIGINATION FORM

Date: **3//29/2013**

Originator: **Rudy Powell**

Contact Information: **Juan Castellanos 850-414-4276**

Specification Title: **Excavation for Structures and Pipe**

Specification Section, Article, or Subarticle Number: **125-1, 125-4**

Why does the existing language need to be changed? **Language change is needed to remove a requirement of excavating 4 ft below stream beds whether needed or not. In addition, to eliminate old language that is outdated, or covered already in section 455.**

Summary of the changes:

**In article 125-1: remove bridge foundations from the description. In 125-4.1: remove language that is covered in 455, remove the 4 ft excavation requirement below permanent stream beds, remove language covered on 125-4.3, and add a paragraph to include foundation preparation for box culverts (moved from 125-4.4)**

**Delete 125-4.2.2 Foundation Piles**

Are these changes applicable to all Department jobs? **Yes**

If not, what are the restrictions?

Will these changes result in an increase or decrease in project costs? **No**

If yes, what is the estimated change in costs?

With who have you discussed these changes? **Structures Design, Materials**

What other offices will be impacted by these changes? **Structures Design Office**

Are changes needed to the PPM, Design Standards, SDG, CPAM or other manual? **Yes**

Is a Design Bulletin, Construction Memo, or Estimates Bulletin needed? **No**

Contact the State Specifications Office for assistance in completing this form.

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SECRETARY

### MEMORANDUM

**DATE:** April 10, 2013  
**TO:** Specification Review Distribution List  
**FROM:** Trey Tillander, State Specifications Engineer  
**SUBJECT:** Proposed Specification: **1250100 Excavation for Structures and Pipe.**

In accordance with Specification Development Procedures, we are sending you a copy of a proposed specification change.

This change was proposed by Juan Castellanos of the State Construction Office to update the language for current Department practice.

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 SP965TT or [trey.tillander@dot.state.fl.us](mailto:trey.tillander@dot.state.fl.us). Comments received after **May 8, 2013**, may not be considered. Your input is encouraged.

TT/dt  
Attachment

## EXCAVATION FOR STRUCTURES AND PIPE.

(REV 4-15-13)

ARTICLE 125-1 (Page 177) is deleted and the following substituted:

### 125-1 Description.

Excavate for ~~bridge foundations~~[c1], box culverts, pipe culverts, storm sewers and all other pipe lines, retaining walls, headwalls for pipe culverts and drains, catch basins, drop inlets, manholes, and similar structures. Construct and remove cofferdams, sheeting, bracing, etc.; pump or otherwise dewater foundations; remove and dispose of any existing structures or portions of structures not covered by other items in the Contract, including foundations, abutments, piers, wings, and all other materials, obstructions, etc., found necessary to clear the site for the proposed work; backfill, dispose of surplus material, and perform final cleaning, as may be necessary for the proper execution of the work. This Section does not include excavation for bases or pavements, curbs, curb and gutter, valley gutter, ditch pavement, or rubble gutter. Perform work in accordance with an approved Quality Control (QC) Plan meeting the requirements of 105-3.

**125-1.1 Trench Excavation Safety System and Shoring, Special (Trench Excavation):** When performing trench excavation in excess of 5 feet in depth, comply with the Occupational Safety and Health Administration's (OSHA) trench safety standards, 29 C.F.R., s. 1926.650, Subpart P, and all subsequent revisions or updates adopted by the Department of Labor and Employment Security. Ensure that trench boxes are wide enough to accommodate compaction and density testing.

Submission of bid and subsequent execution of the Contract will serve as certification that all trench excavation in excess of 5 feet in depth will be in compliance with Section 553.62, Florida Statutes.

Consider all available geotechnical information available when designing the trench excavation safety system.

Consider these and any more stringent trench safety standards as minimum Contract requirements.

ARTICLE 125-4 (Pages 178 – 179) is deleted and the following substituted:

### 125-4 Excavation.

**125-4.1 Requirements for all Excavation:** ~~Excavate foundation pits to permit the placing of the full widths and lengths of footings shown in the Plans, with full horizontal beds. Do not round or undercut corners or edges of footings~~[c2]. Perform all excavation to foundation materials, satisfactory to the Engineer, regardless of the elevation shown in the Plans. ~~Perform all excavation in stream beds to a depth at least 4 feet below the permanent bed of the stream, unless a firm footing can be established on solid rock before such depth is reached, and excavate to such additional depth as may be necessary to eliminate any danger of undermining.~~ [c3] ~~Wherever rock bottom is secured, excavate in such manner as to allow the solid rock to be exposed and prepared in horizontal beds for receiving the masonry. Remove all loose and disintegrated rock or thin strata.~~ Have [c4] the Engineer inspect and approve all foundation excavations prior to placing *any structure or masonry concrete*.

*Remove rock, boulders or other hard lumpy or unyielding material to a depth of 12 inches below the bottom of pipes and box culverts elevations. Remove muck or other soft material to a depth necessary to establish a firm foundation[c5].*

#### **125-4.2 Earth Excavation:**

**125-4.2.1 Foundation Material other than the Rock:** When masonry is to rest on an excavated surface other than rock, take special care to avoid disturbing the bottom of the excavation, and do not remove the final foundation material to grade until just before placing the masonry. In case the foundation material is soft or mucky, the Engineer may require excavation to a greater depth and to backfill to grade with approved material.

**125-4.2.2 Foundation Piles:** Where foundation piles are used, complete the excavation of each pit before driving the piles. After the driving is completed, remove all loose and displaced material, leaving a smooth, solid, and level bed to receive the masonry.

**125-4.2.3 Removal of Obstructions:** Remove boulders, logs, or any unforeseen obstacles encountered in excavating. Compensation will be in accordance with the requirements of 4-3.4.

**125-4.3 Rock Excavation:** Clean all rock and other hard foundation material, remove all loose material, and cut all rock to a firm surface. Either level, step vertically and horizontally, or serrate the rock, as may be directed by the Engineer. Clean out all seams, and fill them with concrete or mortar.

**125-4.4 Pipe Trench Excavation:** Excavate trenches for pipe culverts and storm sewers to the elevation of the bottom of the pipe and to a width sufficient to provide adequate working room. Remove soil not meeting the classification specified as suitable backfill material in 125-8.3.2.2, to a depth of 4 inches below the bottom of the pipe elevation. ~~Remove rock, boulders or other hard lumpy or unyielding material to a depth of 12 inches below the bottom of the pipe elevation. Remove muck or other soft material to a depth necessary to establish a firm~~ [c6] ~~foundation.~~ Where the soils permit, ensure that the trench sides are vertical up to at least the mid-point of the pipe.

For pipe lines placed above the natural ground line, place and compact the embankment, prior to excavation of the trench, to an elevation at least 2 feet above the top of the pipe and to a width equal to four pipe diameters, and then excavate the trench to the required grade.

For pipe trenches utilizing trench boxes, ensure that the trench box used is of sufficient width to permit thorough tamping of bedding material under and around the pipes as specified in 125-8.1.6.

Do not disturb the installed pipe and its embedment when moving trench boxes. Move the trench box carefully to avoid excavated wall displacement or damage. As the trench box is moved, fill any voids left by the trench box and continuously place and compact the backfill material adjacent to and all along the side of the trench box walls to fill any voids created by the trench box.