

ORINATION FORM

Proposed Revisions to the Specifications

(Please provide all information - incomplete forms will be returned)

Date:

Office:

Originator:

Specification Section:

Telephone:

Article/Subarticle:

email:

Will the proposed revision require changes to:

| Publication | Yes | No | Office Staff Contacted |
|--|-----|----|------------------------|
| Standard Plans Index | | | |
| Traffic Engineering Manual | | | |
| FDOT Design Manual | | | |
| Construction Project Administration Manual | | | |
| Basis of Estimate/Pay Items | | | |
| Structures Design Guidelines | | | |
| Approved Product List | | | |
| Materials Manual | | | |

Will this revision necessitate any of the following:

Design Bulletin

Construction Bulletin

Estimates Bulletin

Materials Bulletin

Are all references to external publications current?

Yes

No

If not, what references need to be updated? (Please include changes in the redline document.)

Why does the existing language need to be changed?

Summary of the changes:

Are these changes applicable to all Department jobs?

Yes

No

If not, what are the restrictions?

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

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KEVIN J. THIBAUT
SECRETARY

MEMORANDUM

DATE: May 2, 2019
TO: Specification Review Distribution List
FROM: Dan Hurtado, P.E., State Specifications Engineer
SUBJECT: Proposed Specification: **5480206 Retaining Wall Systems.**

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

This change was proposed by Jose Armenteros of the State Materials Office (SMO) to modify the language.

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 online at

<http://www2.dot.state.fl.us/ProgramManagement/Development/IndustryReview.aspx> .

Comments received after **May 30, 2019**, may not be considered. Your input is encouraged.

DH/dt
Attachment

RETAINING WALL SYSTEMS.
(REV 4-15-19)

SUBARTICLE 548-2.6.2 is deleted and the following substituted:

548-2.6.2 Compacted Select Backfill: Meet the requirements of Sections 105 and 120 except as noted within this Section. Have the backfill material tested for every soil type for pH, resistivity, sulfate and chloride content by a Department approved independent testing laboratory prior to placement. Submit a certification, signed and sealed by a Professional Engineer registered in the State of Florida, that the results have met the requirements of this Section.

The pH, as determined by FM 5-550, shall not be lower than 5.0 and not higher than 9.0 when metallic elements or pipes are placed within the backfill. Sources of select backfill material having a pH between 4.5 and 5.0 for walls utilizing metallic reinforcement and between 3.0 and 5.0 for walls utilizing geosynthetic, may be used provided the interior face of the MSE wall panels have three inches of concrete cover over the reinforcement and the concrete used in the panels contains the following ingredients and proportions:

1. The quantity of cement replaced with Type F fly ash is 10% to 20% by weight.
2. The quantity of cement replaced with slag is 50% to 60% by weight.
3. Portland cement is 30% by weight of total cementitious material.
4. The total weight of the Type F fly ash and slag does not exceed 70% of total cementitious material.

In lieu of the mix design described above, a mix design with a ~~fasthighly reactive pozzolanic material~~ meeting the requirements of 346-2.3(6) ~~silica fume, metakaolin and ultrafine fly ash,~~ can be substituted. Examples of mix designs meeting this requirement are:

1. 8% silica fume plus 20% fly ash
2. 10% metakaolin plus 20% fly ash.

Provide proper curing for these materials to prevent surface cracking.

Do not place metallic pipe in backfill materials having a pH less than 5.0.

In addition, for permanent walls utilizing metallic soil reinforcement, use backfill that meets the following electro-chemical test criteria for determining corrosiveness:

| Criteria | Test Method |
|------------------------------------|-------------|
| Resistivity: > 3000 ohm --cm | FM 5-551 |
| Soluble sulfate content: < 200 PPM | FM 5-553 |
| Soluble chloride content < 100 PPM | FM 5-552 |

For constructing the retaining wall volume, do not use backfill material containing more than 2.0% by weight of organic material, as determined by FM 1-T267 and by averaging the test results for three randomly selected samples from each stratum or stockpile of a particular material. If an individual test value of the three samples exceeds 3%, the stratum or stockpile will not be suitable for constructing the retaining wall volume.

Ensure that the material is non-plastic as determined by AASHTO T90 and the liquid limit as determined by AASHTO T89 is less than 15.

For walls using soil reinforcement, use backfill that meets the following gradation limits determined in accordance with AASHTO T27 and FM 1-T011:

| Sieve Size | Percent Passing |
|--------------|-----------------|
| 3-1/2 inches | 100 |
| 3/4 inch | 70-100 |
| No. 4 | 30-100 |
| No. 40 | 15-100 |
| No. 100 | 0-65 |
| No. 200 | 0-12 |

For walls not using soil reinforcement, use backfill that meets the following gradation limits determined in accordance with AASHTO T27 and FM 1-T 011:

| Sieve Size | Percent Passing |
|--------------|-----------------|
| 3-1/2 inches | 100 |
| No. 200 | 0-12 |