

ORIGINATION FORM

Specifications 410, 415,449, 548, 901, and 931

Date: 10 14-2013

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Specification Title: Section 410 Precast Concrete Box Culvert
Section 415 Reinforcing Steel
Section 449 Precast Concrete Drainage Products
Section 548 Retaining Wall System
Section 901 Coarse Aggregate
Section 931 Metal Accessory Materials for Concrete Pavement and
Concrete Structures

Specification Section, Article, or Subarticle Number:

Subarticle 548 -2.3; Article 548-7; Subarticle 931-1.2; Subarticle 901-1.2; Article 410-2; Article 415-6;
Article 449-2

Why does the existing language need to be changed?

ASTM Standards A 82, A 185, A 496 and A 497 have been replaced with modified ASTM A 1064.
The terminology Welded Wire Fabric has been replaced with Welded Wire Reinforcement.

Article 548-7 is expanded to allow shipment of precast concrete products after 72- hour curing period
and attainment of the 28-day compressive strength

Summary of the changes: The following are the summary of changes in each document.

- 1- **Subarticle 548 -2.3: Replace ASTM A 82 and A 185 with ASTM A 1064.**
- 2- **Article 548-7: The article is expanded to allow shipment of precast concrete products after 72-
hour curing period and attainment of the 28-day compressive strength**
- 3- Subarticle 931-1.2: The AASHTO M55 and M 221 have been deleted. ASTM A 1064 covers the
requirements.
- 4- Subarticle 901-1.2: The terminology Welded Wire Fabric has been replaced with Welded Wire
Reinforcement.

- 5- Article 410-2: ASTM A 82, ASTM A 496 and ASTM A 615 are deleted and replaced with ASTM A 1064.
- 6- Article 415-6: Welded Deformed Steel Welded Wire Reinforcement.
- 7- Article 449-2: ASTM A 82, ASTM A 496, A 185, A 497 and ASTM A 615 are deleted and replaced with ASTM A 1064.

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? The propose changes have been discussed with the colleagues at the following offices:

1- Steven Nolan, P.E. Structures Design Engineer
FDOT District 7 Structures Design

2- Gevin J. McDaniel, P.E.
Senior Structures Design Engineer
FDOT Structures Design Office

What other offices will be impacted by these changes? **District Materials and Construction Offices**

Are changes needed to the PPM, Design Standards, SDG, CPAM or other manual? **NO**

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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ANANTH PRASAD, P.E.
SECRETARY

MEMORANDUM

DATE: October 25, 2013
TO: Specification Review Distribution List
FROM: Daniel Scheer, P.E., State Specifications Engineer
SUBJECT: Proposed Specification: **5480203 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 Ghulam Mujtaba of the State Materials Office to update the language for current Department and industry 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 SP965DS, or daniel.scheer@dot.state.fl.us. Comments received after **November 22, 2013**, may not be considered. Your input is encouraged.

DS/ah
Attachment

RETAINING WALL SYSTEMS.

(REV (10-16-13))

SUBARTICLE 548-2.3 is deleted and the following substituted:

548-2.3 Backfill Reinforcement: For walls utilizing backfill reinforcement, use reinforcement consisting of steel wire mesh, metal strips or structural geosynthetics as required for the wall system chosen. Use backfill reinforcement of the same length from top to bottom of wall at any section. For tiered walls, use backfill reinforcement of the same length within the height of each tier at any section.

Use steel wire mesh and embedded loops shop fabricated from cold drawn steel wire ~~meeting the minimum requirements of ASTM A82,~~ and weld into the finished mesh fabric in accordance with ASTM A ~~1064~~185. Use longitudinal and transverse wires of equal and diameter within a given piece of mesh reinforcement. Use steel strips hot rolled from bars to the required shape and dimensions with physical and mechanical properties meeting ASTM A572 Grade 65 or as shown in the Contract Documents. Use shop-fabricated hot rolled steel tie straps meeting the minimum requirements of ASTM A1011/A1011 M, Grade 50, or as shown in the Contract Documents.

Ensure that steel reinforcing strips, tie strips, reinforcing mesh and connectors used in permanent walls are galvanized in accordance with ASTM A123 or ASTM A153, as applicable. For typical applications, punch or drill holes in metal items before galvanizing. Field drilled holes for bin walls are permitted. Repair field drilled holes; field cut ends and other damage to galvanized surfaces in accordance with Section 562.

Use structural geosynthetics made of polypropylene, select high density polyethylene or high-tenacity polyester fibers having cross-sections sufficient to permit significant mechanical interlock with the backfill. Use geosynthetics having a high tensile modulus in relation to the backfill. Use geosynthetics having high resistance to deformation under sustained long term design load while in service and resistant to ultraviolet degradation, to damage under normal construction practices and to all forms of biological or chemical degradation normally encountered in the material being reinforced. Do not use uncoated polyester (PET) reinforcements or reinforcements weakened or damaged by high pH environments within the flowable fill.

Store the geosynthetics in conditions above 20°F and not greater than 140°F. Prevent mud, wet cement, epoxy, and like materials from coming into contact with and affixing to the geosynthetic material. Rolled geosynthetic may be laid flat or stood on end for storage. Cover the geosynthetic and protect from sunlight prior to placement in the wall system.

Carefully inspect all reinforcement, steel and geosynthetics to ensure they are the proper size and free from defects that may impair their strength and durability.

ARTICLE 548-7 is deleted and the following substituted:

548-7 Handling Storage and Shipping.

Handle, store and ship all components in a manner that prevents chipping, cracks, fractures, excessive bending stresses, mud, dirt and debris. Support precast components in storage on firm blocking located immediately adjacent to the attachment device.

Do not ship precast concrete wall components to the project site prior to the completion of the 72 hour curing period and attainment of the required 28 day strength.

The Contractor is permitted to verify the shipping strength test, before 28 days, by testing compressive strength cylinders that are cured under the conditions similar to the product or by testing temperature match cured cylinders. The shipping strength test is the average compressive strength of two test cylinders. Do not ship products until accepted and stamped by the Quality Control (QC) Manager or the inspectors under the direct observation of the QC Manager.