



Florida Department of Transportation

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605 Suwannee Street
Tallahassee, FL 32399-0450

JIM BOXOLD
SECRETARY

January 14, 2016

Khoa Nguyen
Director, Office of Technical Services
Federal Highway Administration
3500 Financial Plaza, Suite 400
Tallahassee, Florida 32312

Re: State Specifications Office
Section **407**
Proposed Specification: **4070200 Three-Sided Precast Concrete Culvert.**

Dear Mr. Nguyen:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification.

The changes are proposed by Charles Boyd of the State Structures Design Office to incorporate specification language for stainless steel and FRP reinforcing and prestressing strand into the Standard Specifications.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to daniel.scheer@dot.state.fl.us.

If you have any questions relating to this specification change, please call me at 414-4130.

Sincerely,

Signature on file

Daniel Scheer, P.E.
State Specifications Engineer

DS/ot

Attachment

cc: Florida Transportation Builders' Assoc.
State Construction Engineer

**THREE-SIDED PRECAST CONCRETE CULVERT.
(REV 11-6-15)**

ARTICLE 407-2 is deleted and the following substituted:

407-2 Materials.

Ensure that the materials used for the construction of precast culverts have certification statements from each source, showing that they meet the applicable requirements of the following:

Portland Cement Concrete	Section 346
Reinforcing <i>Steel for Concrete</i>	Section 415
Precast Concrete Drainage Products	Section 449
Riprap	Section 530
Coarse Aggregate*	Section 901
Fine Aggregate*	Section 902
Curing Materials	Section 925
Materials for Concrete Repair	Section 930
Non-Shrink Grout	Section 934
Geotextile Fabrics	Section 985

*The gradation requirements of aggregates are not applicable when using dry-cast concrete.

ARTICLE 407-6 is deleted and the following substituted:

407-6 Other Elements of a Precast Culvert System.

Extend reinforcing from precast sections to provide adequate splice lengths or utilize a mechanical rebar splicing system (*steel reinforcing only*) listed on the Department's Approved Product List (APL) for securing reinforcing dowels for cast-in-place headwalls and wingwalls. Precast headwalls, wingwalls and culvert footings are permitted. Precast culvert footings must span a minimum of three culvert units and provide shear connections between adjacent units with keyed joints or cast-in-place closure sections. Precast footings under wingwalls are not permitted.

Submit all connection details for precast elements to the Engineer for approval. All mechanical connections must be galvanized in accordance with 962-7 or Type 316 (UNS S31600) stainless steel, except in extremely aggressive environments only Type 316L (UNS 31603) stainless steel is permitted for welded connections and Type 316 stainless steel for non-welded shapes and fasteners.

Unless otherwise addressed in the Plans, bedding material and compaction requirements for wingwalls and toe walls shall be the same as required for the footing in 407-12, except that the granular material may be placed to the inside edge of the toe wall.

All requirements of Section 400 and Section 415 apply to the fabrication of cast-in-place elements.-

SUBARTICLE 407-7.4.7 is deleted and the following substituted:

407-7.4.7 Area of Reinforcement: Provide the area of reinforcement as indicated in the Plans or approved shop drawings as a minimum. If welded wire reinforcement is utilized in lieu of mild steel reinforcement, the provisions of 415-6 shall apply. Reinforcing steel areas greater than specified in the shop drawings will be acceptable when the reinforcing spacing is equal or less than specified in the shop drawings. *Substitution of mild steel or welded wire reinforcement for ~~F~~fiber ~~R~~reinforced ~~P~~polymer (FRP) reinforcing, or vice versa, is not permitted.*

**THREE-SIDED PRECAST CONCRETE CULVERT.
(REV 11-6-15)**

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407-2 Materials.

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Reinforcing for Concrete	Section 415
Precast Concrete Drainage Products.....	Section 449
Riprap.....	Section 530
Coarse Aggregate*	Section 901
Fine Aggregate*	Section 902
Curing Materials	Section 925
Materials for Concrete Repair.....	Section 930
Non-Shrink Grout	Section 934
Geotextile Fabrics	Section 985

*The gradation requirements of aggregates are not applicable when using dry-cast concrete.

ARTICLE 407-6 is deleted and the following substituted:

407-6 Other Elements of a Precast Culvert System.

Extend reinforcing from precast sections to provide adequate splice lengths or utilize a mechanical rebar splicing system (steel reinforcing only) listed on the Department's Approved Product List (APL) for securing reinforcing dowels for cast-in-place headwalls and wingwalls. Precast headwalls, wingwalls and culvert footings are permitted. Precast culvert footings must span a minimum of three culvert units and provide shear connections between adjacent units with keyed joints or cast-in-place closure sections. Precast footings under wingwalls are not permitted.

Submit all connection details for precast elements to the Engineer for approval. All mechanical connections must be galvanized in accordance with 962-7 or Type 316 (UNS S31600) stainless steel, except in extremely aggressive environments only Type 316L (UNS 31603) stainless steel is permitted for welded connections and Type 316 stainless steel for non-welded shapes and fasteners.

Unless otherwise addressed in the Plans, bedding material and compaction requirements for wingwalls and toe walls shall be the same as required for the footing in 407-12, except that the granular material may be placed to the inside edge of the toe wall.

All requirements of Section 400 and Section 415 apply to the fabrication of cast-in-place elements.

SUBARTICLE 407-7.4.7 is deleted and the following substituted:

407-7.4.7 Area of Reinforcement: Provide the area of reinforcement as indicated in the Plans or approved shop drawings as a minimum. If welded wire reinforcement is utilized in lieu of mild steel reinforcement, the provisions of 415-6 shall apply. Reinforcing steel areas greater than specified in the shop drawings will be acceptable when the reinforcing spacing is equal or less than specified in the shop drawings. Substitution of mild steel or welded wire reinforcement for fiber reinforced polymer (FRP) reinforcing, or vice versa, is not permitted.