



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE  
GOVERNOR

EUGENE A. CONTI, JR.  
SECRETARY

MEMORANDUM TO: Project Engineers  
Project Design Engineers

FROM: G. R. Perfetti, P. E.  
State Structures Engineer

DATE: February 10, 2012

SUBJECT: PRECAST BOX CULVERTS

The current policy for use of precast concrete box culverts has been revised. For all new projects use the following guidelines.

When a cast-in-place reinforced concrete box culvert is detailed in the contract plans, the Contractor shall have the option to construct a precast box culvert in lieu of the cast-in-place culvert. This option is permitted in all Divisions, except where limited by size or maximum design fill. A precast box culvert shall not be an option if the culvert is larger than 12' x 12' or when the maximum design fill exceeds:

- 10 ft. (3m) for culverts in Divisions 1-4, 6 and the following counties in Division 8:
  - Lee, Moore, Richmond, Scotland and Hoke
- Fill heights shown in the table below for culverts in Divisions 5, 7, 9-14 and the following counties in Division 8:
  - Chatham, Montgomery and Randolph

Clear Span	Max. Fill*
≤ 7 ft. (2.13 m)	30 ft. (9.14 m)
≥ 8 ft. (2.44 m)	20 ft. (6.10 m)

\* See ASTM C1577 for possible exceptions to maximum allowable fill

When the planning report requires a precast box culvert to satisfy staging and construction time requirements, design and develop plans for a cast-in-place culvert option, and place the following note on the plans:

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***The Contractor may choose to construct a cast-in-place culvert in accordance with the included plans at no additional cost to the department. The contract requirements with respect to construction staging and time shall be satisfied regardless of whether a precast or cast-in-place culvert is constructed.***

The special provisions for Precast Reinforced Concrete Box Culverts and Optional Precast Reinforced Concrete Box Culvert have been updated, as well as the Precast Box Culvert standard drawing. The Design Manual will be revised at a later date.

GRP/BCH/GM

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