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, PE
State Bridge Design Engineer

DATE: June 4, 2010

SUBJECT: STAGED CONSTRUCTION OF CULVERTS

At the request of the Construction Unit, reinforced concrete box culverts that are constructed in stages shall have walls that resist unbalanced hydrostatic forces. Both interior and exterior walls shall satisfy this requirement without the benefit of the top slab or backfill.

To provide the required resistance, detail corner 'A' bars that are spliced to the 'B' bars in each face of interior culvert walls. The 'B' bars shall be sized and spaced as required by design. The corner 'A' bars shall match the 'B' bars in size and spacing. The minimum length of the vertical leg of the 'A' shall be the standard tension lap splice length for the bar size. The horizontal leg of the 'A' bars shall be supported in the same plane as the bottom mat of reinforcing steel in the culvert floor slab. The corner 'A' bars in the exterior walls will continue to be sized and spaced following the current practice.

The top slab shall be detailed without longitudinal joints. Additional corner 'A' bars at the top of the interior culvert walls are not required.

This policy is effective with the October, 2010 letting. The Design Manual and Culvert Design program Bill of Material will be updated at a later date.

GRP/WMC/kmb

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