



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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MEMORANDUM TO: Project Engineers
Project Design Engineers

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

DATE: August 28, 2014

SUBJECT: PREDICTING CAMBER FOR PRESTRESSED CONCRETE
GIRDERS, CORED SLABS AND BOX BEAMS

In recent years, the Construction Unit has noted discrepancies between the predicted and measured camber for prestressed concrete girders, cored slabs and box beams. To address this issue, a research project titled *Predicting Camber, Deflection, and Prestress Losses in Prestressed Concrete Members* was developed and funded by the Research and Development Unit. The research examined current and alternate methods for calculating the prestress losses and camber of prestressed concrete members and compared the theoretical results to field measurements. The research project report is available online at:
<http://www.ncdot.gov/doh/preconstruct/tpb/research/download/2010-05finalreport.pdf>.

Based on the results presented in the research, the Refined Method will be the method required for determining camber in prestressed concrete members. An Excel spreadsheet titled *Prestressed Concrete Girders – Refined Method for Camber.xlsx* has been developed and is available online at:
<https://connect.ncdot.gov/resources/Structures/Pages/Structure-Resources.aspx>.

Effective with the November 2014 letting, begin using the Refined Method to determine the camber of the girder alone in place on all Non-Standard Design projects with prestressed concrete girders, box beams and cored slabs. The Cored Slab Standard Design Plans and Box Beam Standard Design Plans have been updated and are available online. The Design Manual has been updated and is available online.

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