



Florida Department of Transportation

JEB BUSH
GOVERNOR

605 Suwannee Street
Tallahassee, Florida 32399-0450


THOMAS F. BARRY, JR.
SECRETARY

June 18, 1999

THIS MEMO IS EXPIRED

MEMORANDUM NO. 18-99

TO: DISTRICT CONSTRUCTION ENGINEERS
DISTRICT STRUCTURES DESIGN ENGINEERS

FROM: Steven Plotkin, State Construction Structures Engineer 

COPIES: W. Nickas, C. Goodman, SCO Area Engineers

SUBJECT: DECK ELEVATION ADJUSTMENTS FOR BEAM CAMBER

From time to time, the camber of prestressed beams and girders is significantly less than or greater than what the plans indicate. If this variance is not compensated for by adjusting the deck elevations shown in the plans, then undesirable consequences will take place.

In the case of less than estimated camber, beam buildups become significantly larger and heavier which increases the volume and cost of deck concrete and reduces the factor of safety of the substructure and foundations. In the case of greater than estimated camber, the beam may be inserted into the bottom of the deck which reduces the effective deck thickness and capacity.

Both cases have undesirable consequences that can be avoided if the Designer of Record (DOR) is made aware of the situation and is given an opportunity to adjust the deck grades well in advance of form placement. This will not delay the Contractor and will make the construction easier since large buildups or beam insertions are more difficult for the contractor to form.

In order to determine if deck elevations should be adjusted, the camber of the beams will need to be measured well before deck form setting by the contractor in accordance with Specification 450-2.8.2. While beams are still in the prestress yard, the Project Engineer should request a copy of the periodic camber measurements that are taken by the producer. Once the beam is on the project site, measurements will be taken by the Contractor. If cambers appear to be excessively large or small, as verified by the Project Engineer, the DOR should be made aware of the situation so that adjustments to the deck elevations can be provided to the Contractor in time to avoid delay. If the Project Engineer is unsure about whether the cambers are excessive, the DOR should make the decision.

Please notify all department and consultant resident and project engineers of the need to verify compliance with Specification 450-2.8.2 and inform all designers that they may be asked to produce the necessary deck elevation adjustments on occasion. Also, this requirement should be added to the structures inspection guidelist/checklist of your District Construction QA Plan so that evaluation of cambers will not be overlooked in the future.

If further discussion of this matter is desired, please contact me at 994-4155 sc.