Florida Department of Transportation

November 9, 2006

To: District Directors of Operations, District Directors of Production, District Design Engineers, District Construction Engineers, District Geotechnical Engineers, District Structures Design Engineers

FROM: William Nickas, P.E., State Structures Design Engineer
       Brian Blanchard, P.E., Director, Office of Construction


SUBJECT: Temporary Design Bulletin C06-10
         DCE Memorandum No. 28-06
         Mandatory Utilization of Embedded Data Collectors (EDC) in Prestressed Concrete Test Piles

REQUIREMENTS:

On all projects with bridges containing 18”, 24” or 30” prestressed concrete test piles, modify the Summary of Pay Items to include Pay Item No. 455-146 (Embedded Data Collector – each). The Embedded Data Collector (EDC) quantity will be one per prestressed concrete test pile. Include Special Provision 455-5.12 in the Specifications Package for these projects. Review the plans to assure there are not any conflicts between plan notes and the new special provision.

COMMENTARY
EDC can not be used with steel pipe piles or H-piles. In voided prestressed concrete piles, the length of the solid sections at the tip and toe of the piles shall be at least 4 pile diameters long. Design Standards Index 20630 for 30” Prestressed Concrete Piles has been revised to extend the solid section at the head and toe and will be released as an interim standard along with the interim standard for the EDC. The EDC will be cast into these solid sections, along the axis of the pile, ≥2 pile diameters from the end and ≥2 pile diameters from any cross-section change such as a pile void or vent.

BACKGROUND
Embedded Data Collector (EDC) technology is the result of a research study by the University of Florida sponsored by FDOT. FDOT has made a commitment to advance EDC technology in prestressed piling by establishing a statistically significant database of approximately 200 piles monitored concurrently with both EDC and conventional dynamic monitoring methods and then compiling a statistical comparison of the test results. In order to establish this database in a reasonable period of time, FDOT is requiring EDC
data collection concurrent with conventional test pile monitoring equipment on all bridge projects beginning January 2007 lettings.

In order to minimize the impact to each Districts’ production schedule, a special provision has been drafted and forwarded to FHWA for review, and Interim Design Standards Index 20602 will provide EDC installation details. The special provision will need to be incorporated into the projects as a mandatory specifications change in the January 2007 Workbook.

Interim Design Standards Index 20602 will be posted on the Design Standards Website which will provide construction details for the EDC. The Design Standards Modifications (DSM) dated January 1, 2007 has been edited to include a reference to this Interim Index. Since no projects using this version of the DSM have been let as of this time, the date of the DSM remains unchanged. It therefore is not necessary to revise the DSM note on the Key Sheet.

IMPLEMENTATION
This policy is effective for all projects with 18”, 24” or 30” prestressed concrete test piles let after January 1, 2007.

CONTACT
Larry Jones
Assistant State Structures Design Engineer & State Geotechnical Engineer
Florida Department of Transportation
605 Suwannee Street, MS 33
Tallahassee, FL 32399-0450
phone (850)-414-4305, fax (850)-414-4955
e-mail: Larry.Jones@DOT.STATE.FL.US

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