

April 27, 2005

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FROM: Donald K. Nelson   
360-705-7101

SUBJECT: Project Delivery Memo #05-01 – Flat and Elongated Aggregates

**Purpose and Direction**

**Background:** Standard Specification 9-03.8(2) for Hot Mix Asphalt limits the amount of Flat and Elongated (FE) aggregate exceeding a ratio of 5:1 to 10% or less. Samples tested at the State Materials Laboratory show a typical range from 0-1% with an occasional 2 or 3, all well below the specification requirement.

A study by NCHRP that is to be published in early 2005 (project 9-35) finds the test to be extremely variable and suggests that changes to both the ratio and percentage be made (3:1 and 40% respectively). In addition, the study indicated that the 5:1 ratio did not produce a good statistical relationship to performance of the pavement. At this time we do not have adequate data on FE aggregate at the 3:1 ratio, so we do not want to change the specification without knowing what the impact would be.

**Types of Projects Affected:** All projects that include Hot Mix Asphalt (HMA).

**Direction:** In order to develop a database on FE at the 3:1 ratio, the State Materials Laboratory has agreed to do informational testing on the mineral aggregate during the upcoming construction season. The Lab will continue to monitor nationwide research on testing that provides a more meaningful link to pavement performance. It was agreed that it is better to eliminate the requirement rather than change it to something that we do not know how it will impact the work or the industry.

**Value in Making the Change:** Eliminating the FE test requirement removes a specification that may not be an indicator of the performance of the material. It also allows the Department time to study the issue before committing to a revision.

### Action Requested

#### Project Development

Incorporate the most recent amendments to the Standard Specifications for Section 5-04 and Section 9-08, dated April 4, 2005, into all projects scheduled for advertisement after April 4, 2005.

#### State Materials Laboratory

Perform informational testing for flat and elongated particles on HMA mineral aggregate and compile data of the percentage exceeding a 3:1 ratio during the 2005 construction season.

#### Construction

For current contracts, HMA may be accepted without testing the mineral aggregate for compliance with the FE specification.

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dlm

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