

## 416-R-709 COLD IN-PLACE RECYCLING, CIR

(Adopted 12-19-19)

The Standard Specifications are revised as follows:

SECTION 416, BEGIN LINE 23, DELETE AND INSERT AS FOLLOWS:

### 416.03 Quality Control

A quality control plan, QCP, shall be submitted to the Engineer a minimum of five calendar days prior to the JITT. The QCP shall include the proposed CIR mix design, a start to finish process description to include discussion on corrective action measures, a list of proposed equipment, a list of proposed QC tests and testing frequencies, and the curing methods applied to the CIR. All QC test results *and responses to test results* shall be maintained during the duration of the contract and made available to the Engineer upon request.

The following table provides the type and minimum frequency for tests.

QC Testing	
Test	Frequency <sup>1,2</sup>
Depth of Pulverization	1 per 500 ft
Pulverized Material Gradation	1 per 0.5 day of processing
Asphalt Emulsion Content	1 per 500 ft
Water Content	1 per 500 ft
Compacted In-Place Field Density	1 per 1,000 ft
Field Moisture Content for Curing	1 per each day of production
<i>Optimum Field Density</i>	<i>1 per 2 days of production</i>
Notes:	
1. The Contractor shall perform all QC tests within the first 500 ft after startup and after any change in the mix design.	
2. Testing frequency is based upon linear feet of CIR processing.	

SECTION 416, BEGIN LINE 289, INSERT AS FOLLOWS:

A rolling pattern that produces the maximum obtainable density, or optimum field density, shall be determined during the control strip *using a roller in accordance with 409.03(d)4*. The Contractor shall provide a sequence and manner of rolling by establishing a roller pass versus density chart that shows the progress of densification from initial lay down through optimum field density using a properly calibrated nuclear gauge in accordance to AASHTO T 310. Production may continue after approval of the control strip.

SECTION 416, BEGIN LINE 335, DELETE AND INSERT AS FOLLOWS:

### 416.13 Curing

Before placing the final surfacing, the recycled surface shall remain in-place for a minimum of three days and meet one of the following conditions:

- (a) there is less than 3.0% moisture remaining in the mixture, or
- (b) the material has ~~remained in-place~~ *cured* for a minimum of 10 *consecutive* days without rainfall.

The planned method and duration of curing for CIR shall be in accordance with the QCP. The specified surface course shall be placed within two weeks of the CIR final cure, but no later than November 1.

**416.14 Milling**

The entire surface of the CIR shall be scarified in accordance with 306.04 ~~to the specified cross-slope~~ in preparation for the overlay, *except liquidated damages will not apply*. Construction engineering in accordance with 105.08(b) shall be provided.

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