



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE  
GOVERNOR

EUGENE A. CONTI, JR.  
SECRETARY

January 15, 2010

MEMORANDUM TO: DIVISION ENGINEERS, RESIDENT ENGINEERS, ROADWAY CONSTRUCTION ENGINEERS AND BRIDGE CONSTRUCTION ENGINEERS

*Walton I Jones*

FROM: Walton I. Jones  
Field Concrete Engineer

SUBJECT: Minimum Sampling for Incidental and Structural Concrete

The minimum testing frequencies for Portland cement concrete for structures and incidental construction are the following. All tests must be performed by a certified "Concrete Field Technician" using the most recent AASHTO/ASTM standards. Additional tests may be required if directed by the Engineer.

**CLASS AA, A, and B:**

AIR CONTENT - CHACE INDICATOR (AASHTO T-199): Performed on every load.

SLUMP (AASHTO T-119 / ASTM C-143): Performed on the first load, and a random load per 30 cubic yards or fraction thereof. When test specimens are made.

AIR CONTENT - PRESSURE AIR METER (AASHTO T-152 / ASTM C-231): Performed on the first load, and a random load per 30 cubic yards or fraction thereof. When test specimens are made.

TEMPERATURE (ASTM C-1064): Performed on the first load and when test specimens are made.

TEST SPECIMENS (AASHTO T-23 / ASTM C-31): One set of cylinders per each placement operation per each 100 cubic yards cumulative or fraction thereof for Class AA and A Concrete. One set of cylinders per each 100 cubic yards or fraction thereof for Class B Concrete.

**LIGHTWEIGHT:**

AIR CONTENT - CHACE INDICATOR (AASHTO T-199): Performed on every load.

SLUMP (AASHTO T-119 / ASTM C-143): Performed on the first load, and a random load per 30 cubic yards or fraction thereof. When test specimens are made.

AIR CONTENT - VOLUMETRIC (AASHTO T-196 / ASTM C-173): Performed on the first load, and a random load per 30 cubic yards or fraction thereof. When test specimens are made.

UNIT WEIGHT (AASHTO T-121 / ASTM C-138): Performed on the first load, and when test specimens are made.

TEMPERATURE (ASTM C-1064): Performed on the first load and when test specimens are made.

TEST SPECIMENS (AASHTO T-23 / ASTM C-31): One set of cylinders per each placement operation per each 100 cubic yards or fraction thereof.

**DRILL PIER:**

Air content-Chace method (air content not to exceed 7.5%), slump, temperature, and test specimens will be performed on every load.