PURPOSE: To provide uniform procedures for the certification of concrete technicians.

1. SCOPE

The MDOT QC/QA Concrete Technician Certification Program is intended to help assure appropriate minimum training and proficiency qualifications for all personnel, both agency and industry, who are involved with quality control (QC), quality assurance (QA), job mix formulas, and testing concrete and aggregates for acceptance purposes on MDOT and State Aid projects. There are three (3) classes of certification, as detailed below, and the appropriate class is required of each individual performing these duties on State Aid projects. Certifications are valid for five (5) years. Retesting is required for certification renewal.

2. PROGRAM ADMINISTRATION

The Concrete Technician Certification Program shall be administered by the Mississippi Concrete Industries Association (MCIA). An Oversight Committee is established, consisting of the MCIA Technician Education committee members, and MDOT's Assistant Chief Engineer of Operations, State Materials Engineer, and Assistant State Materials Engineer. The MDOT/MCIA Oversight Committee will meet once a year to approve any changes in the certification procedures.

3. CERTIFICATION STANDARDS

3.1. **Class I** certification covers field testing fresh concrete. The Class I certification program consists of the nationally recognized ACI Concrete Field Testing Technician Grade I program, and any holder of a current certificate with this designation is thus class 1 certified. No substitutions are accepted. The Class 1 program includes the following test procedures:

3.1.1. Sampling (AASHTO T 141)
3.1.2. Slump (AASHTO T 119)
3.1.3. Unit Weight (AASHTO T 121)
3.1.4. Air Content - Volumetric Method (AASHTO T 196)
3.1.5. Air Content - Pressure Method (AASHTO T 152)
3.1.6. Molding Cylinders (AASHTO T 23)
3.1.7. Temperature - Concrete and Air (ASTM C 1064)

3.2. **Class 2** certification is intended for QA technicians who perform certain field tests on aggregates as well as fresh concrete. The Class 2 certification program requires that the candidate have a valid Class I certification, and requires competency in the following field test procedures for aggregates:

3.2.1. Sampling (AASHTO T 2)

3.2.2 Reducing Field Samples to Testing Size (AASHTO T 248)
3.2.3. Sieve Analysis of Fine and Coarse Aggregates (AASHTO T 27) and fineness modulus
3.2.4. Total Moisture Content by Drying (AASHTO T 255) and moisture adjustment

3.3. **Class 3** certified technicians are qualified to conduct certain field or laboratory tests on aggregates or concrete, and to design and make field adjustments to concrete mixes. The class 3 certification program requires that the candidate have valid Class 1 and Class 2 certifications, and knowledge of the following procedures and specifications.

3.3.1. Specific Gravity & Absorption of Coarse Aggregates (AASHTO T 85)
3.3.2. Specific Gravity & Absorption of Fine Aggregates (AASHTO T 84)
3.3.3. Unit Weight & Voids in Aggregates (AASHTO T 19)
3.3.4. Making and Curing Concrete Test Specimens in the Lab (AASHTO T 126)
3.3.5. Compressive Strength of Cylindrical Concrete Specimens (AASHTO T 22), including use of unbonded caps
3.3.6. Capping Cylindrical Concrete Specimens (AASHTO T 231)

4. CERTIFICATION PROCESS

Prospective candidate shall submit a request for certification to the MDOT/MCIA Oversight Committee in care of the Mississippi Concrete Industries Association.

Each class of certification requires, and is contingent upon, current certification at the preceding class level. Certain concrete laboratory technician certifications granted through nationally recognized programs that test candidates in the same areas may be approved by MDOT, at the discretion of the State Materials Engineer, to substitute for Class 2 and/or Class 3 certifications. Each certification is valid for five (5) years. Renewal requires re-examination. ACI Grade 1 certification requires passing a closed-book written examination covering each of the referenced standards, and passing the performance examination (field testing) by properly demonstrating each ASTM test method. MDOT Class 2 and 3 certifications require passing an open-book written examination covering referenced AASHTO standards and concrete technology material presented in the course.

5. RE-CERTIFICATION

Concrete technician re-certification will be the same as the certification process, except that attending the classroom sessions will not be mandatory.