200 ROCK BASE.

(REV 8-2-05) (FA 8-3-05) (8-05)

ARTICLE 200-6 (Pages 194-195) is deleted and the following substituted:

200-6 Compacting and Finishing Base.

200-6.1 General: A LOT is defined as a single lift of finished base not to exceed 500 feet [150 m]. Shoulders compacted separately shall be considered separate LOTs. Isolated compaction operations will be considered as separate LOTs. For multiple phase construction, a LOT shall not extend beyond the limits of the phase.

200-6.1.1 Single Course Base: After spreading, scarify the entire surface, then shape the base to produce the required grade and cross-section, free of scabs and laminations, after compaction.

200-6.1.2 Multiple Course Base: Clean the first course of foreign material, then blade and bring it to a surface cross-section approximately parallel to the finished base. Before spreading any material for the upper courses, allow the Engineer to make density tests for the lower courses to determine that the required compaction has been obtained. After spreading the material for the top course, scarify finish and shape its surface to produce the required grade and cross-section, free of scabs and laminations, after compaction.

200-6.2 Moisture Content: When the material does not have the proper moisture content to ensure the required density, wet or dry it as required. When adding water, uniformly mix it in to the full depth of the course that is being compacted. During wetting or drying operations, manipulate, as a unit, the entire width and depth of the course that is being compacted.

200-6.3 Thickness Requirements: Within the entire limits of the length and width of the finished base, meet the specified plan thickness in accordance with the requirements of 200-7.3.1.2.

200-6.4 Correction of Defects:

200-6.4.1 Contamination of Base Material: If, at any time, the subgrade material becomes mixed with the base course material, dig out and remove the mixture, and reshape and compact the subgrade. Then replace the materials removed with clean base material, and shape and compact as specified above. Perform this work at no expense to the Department.

200-6.4.2 Cracks and Checks: If cracks or checks appear in the base, either before or after priming, which, in the opinion of the Engineer, would impair the structural efficiency of the base, remove the cracks or checks by rescarifying, reshaping, adding base material where necessary, and recompacting.

200-6.5 Compaction of Widening Strips: Where base construction consists of widening strips and the trench width is not sufficient to permit use of standard base compaction equipment, compact the base using vibratory compactors, trench rollers or other special equipment which will achieve the density requirements specified herein.

When multiple course base construction is required, compact each course prior to spreading material for the overlaying course.

ARTICLE 200-7 (Pages 195-198) is deleted and the following substituted:

200-7 Acceptance Program.

200-7.1 General Requirements: Meet the requirements of 120-10.1, except use 200-7.2 instead of 120-10.2.

200-7.2 Acceptance Criteria:

200-7.2.1 Density: Within the entire limits of the width and depth of the base, obtain a minimum density in any LOT of 98% of modified Proctor maximum density as determined by AASHTO FM 1-T 180, Method D. Compact the base of any LOT of shoulder pavement to not less than 95% of the modified Proctor maximum density as determined by FM 1-T 180, Method D.

200-7.2.2 Frequency: Conduct QC sampling and testing at a minimum frequency listed in the table below. The Engineer will perform Verification sampling and tests at a minimum frequency listed in the table below.

Test Name	Quality Control	Verification
Modified Proctor Maximum Density	One per eight consecutive LOTs	One per 16 consecutive LOTs
Density	One per LOT	One per four LOTs
Roadway Surface	Ten per LOT	Three per LOT
Shoulder/widening* Surface	Five per LOT	One per LOT
Roadway Thickness	Three per LOT	Three per four LOTs
Shoulder/widening* Thickness	Three per two consecutive LOTs	Three per eight consecutive LOTs
* Note = for widening less than or equal to 5ft [1.5 m]		

200-7.3 Additional Requirements:

200-7.3.1 Quality Control Testing:

200-7.3.1.1 Modified Proctor Maximum Density Requirement: Collect enough material to split and create three separate samples and retain for the Engineer's Verification and Resolution testing until the Engineer accepts the 16 LOTs represented by the samples.

200-7.3.1.2 Depth and Surface Testing Requirements: Determine test locations including Stations and Offsets, using the Random Number generator provided by the Department. Enter test results into the Department's database. Perform thickness check on the finished base or granular subbase component of a composite base. Provide traffic control, coring/boring equipment, and an operator for the coring/boring equipment. Traffic control is to be provided in accordance with the standard maintenance of traffic requirements of the Contract.

The thickness is considered deficient, if the measured depth is over 1/2 inch [13 mm] less than the specified thickness. Correct all deficient areas of the completed base by scarifying and adding additional base material. As an exception, if authorized by the Department, such areas may be left in place without correction and with no payment.

Check the finished surface of the base course with a template cut to the required crown and with a 15 foot [4.572 m] straightedge laid parallel to the centerline of the road. Correct all irregularities greater than 1/4 inch [6 mm] to the satisfaction of the Engineer by

scarifying and removing or adding rock as required, and recompact the entire area as specified hereinbefore.

200-7.3.1.3 Surface & Thickness Reduced Testing Frequency: When no Resolution testing is required for 12 consecutive verified LOTs, or if required, the QC test data was upheld, reduce the QC surface and/or thickness checks to one half the minimum requirements as stated in 200-7.2.2 (eg. Reduce frequency from ten per LOT to ten per two LOTs) by identifying the substantiating tests and notifying the Engineer in writing prior to starting reduced frequency of testing. If the Verification test fails, and Quality Control test data is not upheld by Resolution testing the Quality Control testing will revert to the original frequency of 200-7.2.2. The results of the Independent Verification testing will not affect the frequency of the Quality Control testing.

200-7.3.2 Department Verification Tests:

200-7.3.2.1 Maximum Density: The Engineer will randomly select one of the two split samples and test in accordance with FM 1-T 180, Method D.

200-7.3.2.2 Thickness and Surface Testing Requirements: the department will verify the Base thickness at the frequency listed in 200-7.2.2. The Department will select test locations, including Stations, Offsets, and Lifts using a Random Number generator, based on a set LOTs under consideration. If the Verification test results are not deficient as defined in 200-7.3.1.2, the QC test data will be considered verified. If the Verification test results are deficient, the requirements of 200-7.4.3 will apply in affected LOTs. Provide traffic control, coring/boring equipment, and an operator for the coring/boring equipment. Traffic control is to be provided in accordance with the standard maintenance of traffic requirements of the Contract.

200-7.4 Verification Comparison Criteria and Resolution Procedures:

200-7.4.1 Modified Proctor Maximum Density: The Engineer will verify the Quality Control results of the 16 consecutive LOTs if the Verification test result compares within 4.5 PCF [72 kg/m^3] of the QC result for the corresponding LOTs. Otherwise, the Engineer will collect the Resolution split sample corresponding to the Verification sample tested. The State Materials Office or an AASHTO accredited laboratory designated by the State Materials Office will perform Resolution testing. The material will be sampled and tested in accordance with FM 1-T 180, Method D.

The Engineer will compare the Resolution Test results with the Quality Control test results. If the Resolution Test result is within 4.5 PCF [72 kg/m^3] of the corresponding Quality Control test result, the Engineer will use the Quality Control test results for material acceptance purposes for each corresponding set of eight LOTs. If the Resolution test result is not within 4.5 PCF [72 kg/m^3] of the corresponding Quality Control test, the Engineer will collect the remaining Verification split sample for testing. Verification Test results will be used for material acceptance purposes for the 16 LOTs in question**.**

200-7.4.2 Density: When a Verification or Independent Verification density test does not meet the requirements of 200-7.2.1 (Acceptance Criteria), retest the LOT at a site within a 5 feet (1.5 meter) radius of the Verification test location and observe the following:

1. If the Quality Control retest meets the Acceptance Criteria and compares favorably with the Verification or Independent Verification test, the Engineer will accept the four LOTs in question.

2. If the Quality Control retest does not meet the Acceptance Criteria and compares favorably with the Verification or Independent Verification test, rework and retest the material in that LOT. The Engineer will re-verify the four LOTs in question.

3. If the Quality Control retest and the Verification or Independent Verification test do not compare favorably, complete a new equipment-comparison analysis as defined in 120-10.1.1. Once acceptable comparison is achieved, retest the four LOTs. The Engineer will perform new verification testing. Acceptance testing will not begin on a new LOT until the Contractor has a gauge that meets the comparison requirements.

200-7.4.3 Thickness and Surface Testing Requirements: When a Verification or Independent Verification density test does not meet the requirements of 200-7.3.1.2 (Acceptance Criteria), perform a QC re-test within 5 feet [1.5 m] of the Verification test site in each affected LOT. If the QC re-test meets the requirements, the LOT will be accepted using QC test results. If the QC re-test confirms deficient thickness or surface irregularity, the Contractor will rework and re-test that LOT by scarifying and adding additional base material. The Department will re-verify the group of those LOTs. As an exception, if authorized by the Engineer, such areas may be left in place without correction and with no payment.

SUBARTICLE 200-8.1 (Page 198) is deleted and the following substituted:

200-8.1 Priming: Apply the prime coat only when the base meets the specified density requirements and when the moisture content in the top half of the base does not exceed the optimum moisture of the base material. At the time of priming, ensure that the base is firm, unyielding and in such condition that no undue distortion will occur.