Florida Department of Transportation

JEB BUSH
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

JOSÉ ABREU
SECRETARY

June 25, 2004

Mr. Donald Davis
Program Operations Engineer
Federal Highway Administration
545 John Knox Road
Tallahassee, Florida 32303

Re: Office of Design, Specifications
Section 200
Proposed Specification: 2000006.D01 – Rock Base

Dear Mr. Davis:

We are submitting, for your approval, two copies of a proposed Supplemental Specification for Rock Base.

This change was proposed by John Shoucair of the State Materials Office to add Modified Proctor to all references to maximum density throughout the Section and other minor changes.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via Email to SP965DB or duane.brautigam@dot.state.fl.us.

If you have any questions relating to this specification change, please call Duane F. Brautigam, State Specifications Engineer at 414-4110.

Sincerely,

Duane F. Brautigam, P.E.
State Specifications Engineer

DFB/sh
Attachment
cc: General Counsel
Florida Transportation Builders' Assoc.
State Construction Engineer

ROCK BASE.
(REV ~~5-18-04~~*6-25-04*)

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 ~~by disking~~ 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 ~~and depth~~ of the *finished* base, ~~construct the base to specified width. The average depth in any LOT must~~ meet the specified *plan thickness in accordance with the requirements of* ~~depth value. Meet the thickness requirements of 285-6~~*200-7.3.1.2*.

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 ~~p~~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 ~~p~~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 ~~4 ft~~*5ft* [~~1.2~~*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* ~~S~~*s*plit *and create* ~~each~~*three separate* sample*s* and retain for the Engineer's Verification ~~or~~*and* Resolution testing until the Engineer accepts the 16 LOTs represented by the samples.

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 ~~use the Verification results for material acceptance purposes for the eight corresponding LOTs~~*collect the Resolution split sample corresponding to the Verification sample tested*. ~~The Engineer will collect the remaining split sample corresponding to the remaining eight LOTs in question.~~ 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* ~~the remaining~~ eight LOTs. If the Resolution test result is not within 4.5 PCF [72 kg/m^3] of the corresponding Quality Control test, the ~~Resolution test results~~ *Engineer will collect the remaining Verification split sample for testing. Verification Test results* will be used for material acceptance purposes for the ~~remaining eight~~*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),* ~~P~~*p*erform 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.

ROCK BASE.
(REV 6-25-04)

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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.

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.

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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.

200-7.4 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.