



South Carolina
Department of Transportation

May 13, 1999

INSTRUCTIONAL BULLETIN NO. 99-7

SUBJECT: Alternate Base Course
EFFECTIVE DATE: March, 1999 Letting
SUPERSEDES: None
RE: None

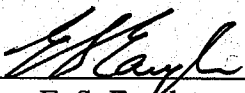
The Alternates for Graded Aggregate Base Course is now:

- Alt. 1 Macadam Base Course
- Alt. 2 Marine Limestone Base Course
- Alt. 3 Recycled Portland Cement Concrete Base Course

Macadam Base Course is the same pay item as in the past. Pay Items for Marine Limestone Base Course is 3063105 through 3063125. Pay Items for Recycled Portland Cement Concrete Base Course is 3063305 through 3063325.

Coquina Shell Base Course will continue to be used in Georgetown, Horry, and Marion counties as prescribed in Instructional Bulletin No. 98-2.

Approved: _____


E. S. Eargle
Road Design Engineer

ESE:adf

cc:

Federal Proj. Dev. Engr. Walsh
"C" Proj. Dev. Engr. Kneece



SUPPLEMENTAL SPECIFICATIONS

GRADED AGGREGATE BASE COURSE MATERIALS

When the contract specifies a graded aggregate base course, the contractor, at his/her option, may bid on one of the following alternates as amended below. The contractor must state which alternate is selected in the bid documents.

- Alternate No. 1 - Macadam Base Course,
- Alternate No. 2 - Marine Limestone Base Course,
- Alternate No. 3 - Recycled Portland Cement Concrete Base Course.

The 1986 Edition of South Carolina's Standard Specifications for Highway Construction is hereby amended as follows:

SECTION 305

MACADAM BASE COURSE

Macadam Base Course shall meet all requirements of Section 305 of the Standard Specifications, with the following exceptions:

Subsection 305.02 Coarse Aggregate.

The first sentence shall be revised to read as follows:

"Coarse Aggregate (material retained on the No. 4 sieve) shall consist of hard durable particles of crushed stone, excluding marine limestone which is covered in a separate specification."

Subsection 305.03 Fine Aggregate.

The first sentence shall be revised to read as follows:

"The Fine Aggregate (passing the No. 4 sieve) shall consist of material produced by crushing operations, excluding marine limestone."

Subsection 305.04 Composite Mixture.

The third sentence shall be revised to read as follows:

"After the materials have been mixed and laid down, but before initial compaction operations have begun, the composite mixture shall meet the following requirements:"

<u>Sieve Designation</u>	<u>Percentage by Weight Passing</u>
2"	100
1 1/2"	95 - 100
1"	70 - 100
1/2"	48 - 75
No. 4	30 - 50
No. 30	11 - 30
No. 200	0 - 12
Liquid Limit	25 Maximum
Plasticity Index	6 Maximum

APPROVED: January 13, 1999
 Division Administrator
David B. Law
 FEDERAL HIGHWAY ADMINISTRATION

Subsection 305.13 Samples and Tests.

The second sentence shall be revised to read as follows:

"The base shall be sampled promptly after it has been mixed and laid down, but before initial compaction operations have begun."

SECTION 306

STABILIZED AGGREGATE BASE COURSE

Section 306 of the Standard Specifications will be deleted.

MARINE LIMESTONE BASE COURSE

Description This work shall consist of a base course composed of graded marine limestone aggregate which shall be mixed, compacted and primed when specified, all in accordance with these specifications and in conformity with the lines, grades and typical cross section shown on the plans or as directed by the Engineer.

Marine limestone aggregate is generally found in the coastal plains of the state and is defined as any limestone aggregate not meeting the classification of dolomitic limestone. Fossiliferous limestone aggregate and recrystallized limestone aggregate are considered marine limestone aggregate.

MATERIALS

General Requirements The marine limestone base materials shall be produced from a single source or deposit which will yield a satisfactory mixture conforming to all requirements of these specifications.

Marine limestone base shall not contain clay, sand, organics or other materials in sufficient quantity as to be considered detrimental to the proper bonding, finishing or strength of the base.

Coarse Aggregate The material retained on the No. 4 sieve shall be known as coarse aggregate and shall consist of sound durable particles of marine limestone aggregate. When subjected to the Los Angeles Abrasion Test (AASHTO T-96), the coarse aggregate shall have an abrasion loss of not more than 65 percent.

Fine Aggregate The material passing the No. 4 sieve shall be known as fine aggregate and shall consist of marine limestone produced by the mining or crushing operation.

Composite Mixture After the material has been spread on the subgrade or subbase and mixed and shaped, the composite mixture shall meet the following requirements:

<u>Sieve Designation</u>	<u>Percentage by Weight Passing</u>
2"	100
1 1/2"	95 - 100
1"	70 - 100
1/2"	50 - 85
No. 4	30 - 60
No. 30	17 - 38
No. 200	6 - 20
Liquid Limit	25 Maximum
Plasticity Index	6 Maximum

The amount passing the No. 200 sieve shall be determined by AASHTO T-11.

Material for Priming The contractor, with the approval of the Engineer, may use either MC-30, RC-30, or EAP Special for priming the base course. The material used shall meet the requirements specified in Section 406.

CONSTRUCTION REQUIREMENTS

The construction requirements for Marine Limestone Base Course are the same as for Macadam Base Course in Section 305 of the Standard Specifications with the exception of Subsection 305.13, Samples and tests, and Subsection 305.14, Application of Prime Coat.

Sampling and testing of Marine Limestone Base Course shall be performed in accordance with the following:

SUPPLEMENTAL SPECIFICATIONS

Samples and Tests Each layer of marine limestone base course shall be sampled by the engineer at intervals not to exceed 1000 ft. for two lane roads. The base shall be sampled promptly after it has been mixed and laid down, but before initial compaction operations begin. The material shall be sampled by taking three portions for the full depth of the layer, one at the center of the base and one approximately 2 feet from each edge of the base.

Samples are to be submitted to the Research and Materials Lab or District Lab for testing to determine compliance with gradation and other specified requirements.

Application of prime coat shall be in accordance with the following:

Application of Prime Coat The second paragraph of Section 305.14 shall be deleted and replaced with the following: "The rate of application shall be from 0.10 to 0.15 gallons per square yard of residual asphalt."

RECYCLED PORTLAND CEMENT CONCRETE BASE COURSE

Description This work shall consist of a base course composed of graded, crushed concrete used as coarse aggregate, together with fine aggregate or binder material and water, which shall be mixed, compacted and primed when specified, all in accordance with these specifications and in conformity with the lines, grades and typical cross section shown on the plans or as directed by the Engineer. *When Recycled Portland Cement Concrete Base Course is selected by the contractor, the source shall be inspected, sampled and tested, and approved by the Engineer prior to any material being used in the work. A minimum of 4 weeks should be allowed for this sampling, testing and approval.*

MATERIALS

General Requirements The aggregate in the base course shall consist of coarse aggregate of crushed, graded recycled Portland cement concrete mixed together with sand, sand-gravel, soil or other approved materials having similar characteristics, combined as necessary to give a mixture conforming to the requirements hereinafter prescribed.

The aggregate shall be free from lumps or balls of clay or other objectionable matter and shall not contain metals, wood, brick, plastics, or other unacceptable debris.

Coarse Aggregate The material retained on the No. 4 sieve shall be known as coarse aggregate and shall consist of sound durable particles of aggregate. When subjected to the Los Angeles Abrasion Test (AASHTO T-96), the coarse aggregate shall have an abrasion loss of not more than 65 percent.

Fine Aggregate The material passing the No. 4 sieve shall be known as fine aggregate and shall consist of material from the crushing process, sand, soil, or other acceptable material, and shall be obtained from sources approved by the Engineer.

Composite Mixture The composite mixture of coarse aggregate and binder material shall meet the following gradation requirements after it has been mixed and laid down, but before initial compaction operations have begun:

<u>Sieve Designation</u>	<u>Percentage by Weight Passing</u>
2"	100
1 1/2"	95 - 100
1"	70 - 100
1/2"	48 - 75
No. 4	30 - 50
No. 30	11 - 30
No. 200	0 - 12
Liquid Limit	25 Maximum
Plasticity Index	6 Maximum

The amount passing the No. 200 sieve shall be determined by AASHTO T-11.

SUPPLEMENTAL SPECIFICATIONS

Material for Priming The contractor, with the approval of the Engineer, may use either MC-30, RC-30, or EAP Special for priming the base course. The material used shall meet the requirements specified in Section 406.

CONSTRUCTION REQUIREMENTS

The construction requirements for Recycled Portland Cement Concrete Base Course are the same as for Macadam Base Course in Section 305 of the Standard Specifications with the exception of Subsection 305.13, Samples and tests.

Sampling and testing of Recycled Portland Cement Concrete Base Course shall be performed in accordance with the following:

Samples and Tests Each layer of recycled concrete base course shall be sampled by the engineer at intervals not to exceed 1000 ft. for two lane roads. The base shall be sampled promptly after it has been mixed and laid down, but before initial compaction operations begin. The material shall be sampled by taking three portions for the full depth of the layer, one at the center of the base and one approximately 2 feet from each edge of the base.

Samples are to be submitted to the Research and Materials Lab or District Lab for testing to determine compliance with gradation and other specified requirements.

