SUPPLEMENTAL SPECIFICATION

APPROVED:
Division Administrator

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FEDERAL HIGHWAY ADMINISTRATION

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COQUINA SHELL BASE

1.0 DESCRIPTION

This specification covers the materials, equipment, construction, measurement, and payment for construction of a base course composed of coquina shell material on a properly prepared subgrade in conformance with the lines, grades, dimensions, and cross-sections shown on the Plans or as directed by the RCE.

2.0 MATERIALS

General: Compose the coquina shell base course from a mixture of aggregated shells, shell fragments, and varying amounts of sand and clay obtained from naturally existing deposits.

Coquina Shell Base: Use coquina shell base course material that has a California Bearing Ratio (CBR) of not less than 55 when tested in accordance with **AASHTO T 193** at 100.0% of **SC-T-140** density. Use material that has a calcium carbonate equivalent of not less than 45% when tested according to **SC-T-6**; however, the OMR may waive the calcium carbonate equivalent requirement provided the material is determined to be equally suitable for its intended use and complies with the CBR requirement. Make certain that the coquina shell base course also meets the requirements in the following table.

Coquina Shell Base Course Requirements	Min.	Max.
Passing 3 ½-inch sieve, % by weight	100	-
Passing No. 200 sieve, % by weight	5	30
Liquid Limit	-	30
Plasticity Index	-	6

Determine the amount passing the No. 200 sieve in accordance with **AASHTO T 11**.

Asphalt Materials: For prime coat, use EA-P Special meeting the requirements specified in **Section 401.2.1.3**.

3.0 EQUIPMENT

Ensure that the equipment necessary for the proper construction of the work is on site, in acceptable working condition, and approved by the RCE as to both type and condition before the start of work under this section. Provide sufficient equipment to enable prosecution of the work in accordance with the project schedule and completion of the work in the specified time.

4.0 CONSTRUCTION

Placing of Material: Place coquina shell base course on the approved subgrade and uniformly spread it in layers not exceeding 10 inches in compacted thickness. Perform the spreading operation in such a manner that the finished base will conform to the lines, grades, dimensions, and the typical cross-sections shown on the Plans or as directed by the RCE. Take care to prevent segregation of fine particles from the coarse particles during placing and spreading. Correct all areas of segregation. Ensure that objectionable material and debris are removed and are not mixed with the coquina shell base course material.

If the subgrade becomes unstable after the base course has been placed, repair the affected section by removing the base course material and the unsatisfactory subgrade material, replace the unsatisfactory material with suitable material, and re-compact and re-shape. Replace the base course to the required cross-section, grade, and required compaction.

Mixing and Shaping: After the base material has been placed and spread, mix the material while at proper moisture content and with proper equipment to provide a homogeneous mass throughout the width and depth of the base course. Shape the coquina shell base course to the specified grade and cross-section. Remove all particles of material having a dimension greater than 3½ inches during mixing and shaping operations.

Compaction: After mixing and shaping, compact the base course by suitable construction procedures. Roll each layer of material, while as near optimum moisture content as possible, until the base has been thoroughly compacted. Continue rolling operations until the base is thoroughly bonded. Perform the final rolling with pneumatic-tired rollers and continue until the entire base course is compacted to not less than 100.0% of maximum laboratory density as determined by **SC-T-140**.

Thickness Tolerance of Base Course: The thickness of the completed base course is measured at staggered intervals not exceeding 250 feet for two-lane roads. Where the base course is less than the specified thickness by more than ½ inch, correct such areas by scarifying, adding base material, and re-compacting as directed by the RCE.

Where a measured thickness is more than ½ inch greater than the specified thickness, it is considered as the specified thickness plus ½ inch. The average job thickness is the average of the depth measurements determined as specified above. If the average job thickness is less than the specified thickness by more than ¼ inch, an adjusted unit price is used for calculating payment. This adjusted unit price bears the same ratio to the contract unit price bid as the average job thickness bears to the specified thickness.

When the Contract includes more than one road, each road is considered separately.

No additional payment over the contract unit price is made for any base course where the average job thickness, determined as provided, exceeds the specified thickness.

Application of Prime Coat: When hot mix asphalt or an asphalt surface treatment is specified as the subsequent layer on a Coquina Base Course, prime the base course in accordance with **Subsection 401.3.13**. Before placing the prime coat, repair all irregularities in the base course, allow the base course to season sufficiently to permit a uniform penetration, and obtain approval of the density of the base course from the RCE.

Apply the prime coat as prescribed in pertinent sections of **Section 406** at a rate of 0.25 to 0.28 gallons per square yard.

When it is necessary to maintain traffic on a road or a section of road before the prime coat has time to sufficiently dry to prevent pickup, apply sand or some approved granular material as a cover as directed by the RCE. The cost of furnishing this material and performing this work is included in the price of the base course or other items of work and no direct payment for this operation is made.

Maintenance: Maintain the base course throughout its entire length for such length of time as necessary to provide an adequate base course conforming to the required cross-section, grade, thickness, and proper compaction. Such maintenance includes the correction of any defects or damage that may develop due to traffic, erosion, or other cause as well as any watering, machining, rolling, and other operations necessary to condition and preserve the base course. Correct any lack of uniformity in the

base course mixture, unevenness in the surface, or other irregularities by adding or replacing base materials and re-mixing, reshaping, and re-compacting as necessary and required. Ensure that the base is properly drained at all times.

5.0 MEASUREMENT

The quantity for the pay item Coquina Shell Base Course (of the uniform thickness specified) is the surface area of the base course constructed as specified, measured by the square yard (SY) of base course in-place, complete and accepted. Base course constructed outside of the area designated is not included in the measurement.

Base course of variable thickness or base course of thickness for which there is no unit bid price is converted to square yards of equivalent area of a base course of a thickness for which there is a unit bid price. The conversion is based on the base course item that has a thickness nearest to that of the base course in question.

Measurement and payment of Prime Coat is in accordance with **Subsections 401.4** and **401.5**.

6.0 PAYMENT

Payment of the accepted quantity of Coquina Shell Base Course (of the uniform thickness specified), measured in accordance with **Section 5.0**, is determined with the contract unit bid price for the pay item. The payment is full compensation for the constructing the base course as specified or directed and includes furnishing, hauling, placing, spreading, mixing, and compacting the base course materials; priming and maintaining the base course; and includes all other materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to complete the work in accordance with the Plans, the Specifications, and other terms of the Contract.

Base course that is deficient in thickness is paid at the adjusted unit price in accordance with the Thickness Tolerance of Base Course section above.

Payment for each item includes all direct and indirect costs or expenses required to complete the work.

Pay items under this section include the following:

Item No.	Pay Item	Unit
3041104	Coquina Shell Base Course (4” Uniform)	SY
3041105	Coquina Shell Base Course (5” Uniform)	SY
3041106	Coquina Shell Base Course (6” Uniform)	SY
3041108	Coquina Shell Base Course (8” Uniform)	SY
3041109	Coquina Shell Base Course (9” Uniform)	SY
3041112	Coquina Shell Base Course (12” Uniform)	SY