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December 31, 2008

05-SLO-227-0.9/7.1
05-0Q9504

Addendum No. 2

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN SAN LUIS OBISPO COUNTY IN AND NEAR ARROYO GRANDE FROM HUASNA ROAD TO PRICE CANYON ROAD.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on January 7, 2009.

This addendum is being issued to revise the Notice to Bidders and Special Provisions.

In the Special Provisions, Section 10-1.17, "MODIFIED BINER SEAL COAT," is revised as attached.

To Bid book holders:

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the Notice to Bidders section of the Notice to Bidders and Special Provisions.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the Bid book.

Submit bids in the Bid book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

This office is sending this addendum by confirmed facsimile to all book holders to ensure that each receives it. A copy of this addendum is available for the Contractors' use on the Web site:

http://www.dot.ca.gov/hq/esc/oe/weekly_ads/addendum_page.html

If you are not a Bid book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

ORIGINAL SIGNED BY

ROBERT E. TRAVIS, Chief
Office of Plans, Specifications & Estimates
Division of Engineering Services - Office Engineer

Attachments

10-1.17 MODIFIED BINDER SEAL COAT

Modified Binder Seal Coat shall consist of an application of a modified binder and screenings (medium, hot-applied) that have been precoated with paving asphalt. Modified binder shall conform to the provisions specified for Medium Type seal coat in Section 37-1, "Seal Coats," of the Standard Specifications and these special provisions.

Attention is directed to "Order of Work" and "Damage Claims" of these special provisions.

MODIFIED BINDER

At least 2 weeks before its intended use, the Contractor shall furnish the Engineer 4 one-quart cans filled with the modified binder proposed for use on the project. The Contractor shall supply the Engineer, for approval, a binder formulation and samples of all materials to be used in the modified binder, at least 2 weeks before construction is scheduled to begin. The binder formulations shall consist of the following information:

1. Supplier and PG grade of asphalt binder according to AASHTO Designation: M 320.
2. Supplier and identification (or type) of modifiers used.
3. Percentage of asphalt modifier by mass of asphalt.
4. Laboratory test results, from a laboratory holding applicable AASHTO certification, for test parameters shown in these special provisions.
5. PG grade of modified binder according to AASHTO Designation: M 320.

Modified binder shall be a homogeneous material conforming to the following requirements:

Modified Binder Specification for Hot Applied Chip Seal Applications ^a

Property	AASHTO Test Method	Grade	
		PG 76-22 PM	PG 76-22 TR ^b
Original Binder			
Flash Point, Minimum °C	T 48	230	230
Chip adhesion	ASTM D 3625	Pass	Pass
Solubility, Minimum % ^c	T 44 ^d	98.5	97.5 ^e
Viscosity at 135°C, _f Maximum, Pa·s	T 316	3.0	3.0
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum G*/sin(delta), kPa	T 315	76 1.00	76 1.00
RTFO Test, Mass Loss, Maximum, %	T 240	1.00	1.00
RTFO Test Aged Binder			
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum G*/sin(delta), kPa	T 315	76 2.20	76 2.20
Dynamic Shear, Test Temp. at 10 rad/s, °C Maximum (delta), %	T 315	Note g 80	Note g 80
Elastic Recovery ^h , Test Temp., °C Minimum recovery, %	T 301	25 65	25 65
PAV ⁱ Aging, Temperature, °C	R 28	110	110
RTFO Test and PAV Aged Binder			
Dynamic Shear, Test Temp. at 10 rad/s, °C Maximum G*sin(delta), kPa	T 315	31 5000	31 5000
Creep Stiffness, Test Temperature, °C Maximum S-value, MPa Minimum M-value	T 313	-12 300 0.300	-12 300 0.300

Notes:

- a. Do not modify binder using acid modification.
- b. Supplier is required to certify 10% minimum tire rubber modifier in binder.
- c. The Engineer waives this specification if the supplier is a Quality Supplier as defined by the Department's "Certification Program for Suppliers of Asphalt."
- d. The Department allows ASTM D 5546 instead of AASHTO T 44
- e. For hot applied chip seal applications the solubility will be a minimum of 93% and a binder profile is required for supplier who is not a Quality Supplier as defined by the Department's "Certification Program for Suppliers of Asphalt."
- f. The Engineer waives this specification if the supplier certifies the asphalt binder can be adequately pumped and mixed at temperatures meeting applicable safety standards.
- g. Test temperature is the temperature at which $G^*/\sin(\delta)$ is 2.2 kPa. A graph of $\log G^*/\sin(\delta)$ plotted against temperature may be used to determine the test temperature when $G^*/\sin(\delta)$ is 2.2 kPa. A graph of (δ) versus temperature may be used to determine δ at the temperature when $G^*/\sin(\delta)$ is 2.2 kPa. The Engineer also accepts direct measurement of (δ) at the temperature when $G^*/\sin(\delta)$ is 2.2 kPa.
- h. Tests without a force ductility clamp may be performed.
- i. "PAV" means Pressurized Aging Vessel.

A Certificate of Compliance shall be furnished to the Engineer in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications. The certificate shall be current and for the materials delivered to the project. The certificate shall certify that the material, which the certificate represents, conforms to the provisions specified in these special provisions. Test results supporting the Certificate of compliance shall be from a laboratory holding AASHTO certification for tests required.

SCREENINGS

Screenings shall consist of broken stone, crushed gravel or both. At least 90 percent by mass of the screenings shall consist of crushed particles as determined by California Test 205. California Test 205, Section D, definition of a crushed particle is revised as follows: "A particle having 2 or more fresh mechanically fractured faces shall be considered a crushed particle."

Screenings shall conform to the following grading requirements prior to pre-coating with paving asphalt.

Medium 3/8 inch max. size

Sieve Sizes	Percentage Passing
3/8"	—
1/2"	100
3/8"	85-100
No. 4	0-15
No. 9	0-5
No. 16	—
No. 30	—
No. 200	0-2

Representative samples for the Cleanness Value test will be taken immediately prior to preheating the material. Representative samples for grading requirements will be taken prior to precoating with asphalt.

Screenings shall be preheated to a temperature between 260°F and 347°F and then precoated with 0.7 to 1.0 percent asphalt by mass of dry aggregate and the contractor shall determine the amount. The pre-coating of screenings shall be performed in an asphalt concrete plant. Stockpiling of screenings after preheating and precoating with asphalt will not be permitted.

Canvas or similar covers that completely cover each load of precoated screenings shall be used during hauling to minimize temperature drop of the precoated screenings. Screenings shall be spread when the temperature of the precoated screenings is not less than 221°F.

Screenings shall conform to the following quality requirements immediately prior to preheating:

Screenings Quality Requirements

Test Parameters	California Test	Requirements
Los Angeles Rattler Loss (500 Revolutions)	211	25 Max.
Film Stripping	302	25 Max.
Cleanness Value	227	84 Min.
Durability (Dc)	229	52 Min.

EQUIPMENT

The equipment used by the Contractor for modified binder seal coat operations shall conform to the following:

- A. Self-propelled power brooms shall clean the existing pavement and remove loose screenings without dislodging screenings set in the modified asphalt binder. Gutter brooms or steel-tined brooms shall not be used.
- B. A minimum of 3 operational pneumatic-tired rollers conforming to the provisions specified in Section 39-3.03, "Spreading and Compacting Equipment," of the Standard Specifications, except that the rollers shall carry a minimum loading of 3000 lbs on each wheel and an air pressure of 100 ± 5 PSI in each tire, shall compact the seal coat.
- C. A self-propelled screenings spreader, equipped with a screenings hopper in the rear, belt conveyors to carry the screenings to the front, and a spreading shall spread the screenings.
- D. A self-propelled computerized rate controlled distributor truck shall be used for applying polymer modified asphalt binder. The distributor truck shall be equipped with a heating unit a pump or pumps that spray the polymer modified asphalt binder within ± 0.0033 gallon per square yard of the specified rate and a fully circulating spray bar that applies the binder without a streaked or otherwise irregular pattern. The distributor truck shall be equipped with a tachometer, pressure gages, volume measuring devices and thermometer and computerized rate control.
- E. Trucks for hauling screenings shall be equipped so that screenings can be discharged from the tailgate. Trucks shall be equipped with a device to lock onto the hitch at the rear of the screenings spreader. Haul trucks shall be compatible with the screenings spreader so that the dump bed will not push down on the spreader when fully raised. Haul truck dump beds shall be designed so that, while dumping into the receiving hopper, screenings shall be prevented from spilling on the roadway.

PREPARATION FOR SEAL COAT

Surfaces to receive modified binder shall be prepared in conformance with the provisions specified for preparing surfaces to receive asphaltic emulsion as specified in Section 37-1.04, "Preparation for Seal Coat," of the Standard Specifications.

APPLYING MODIFIED BINDER

Modified binder shall be applied in conformance with the provisions specified for applying asphaltic emulsion in Section 37-1.05, "Applying Asphaltic Emulsion," of the Standard Specifications.

Modified binder for modified binder seal coat shall be applied where shown on the plans at a rate-not to exceed 0.51 gallons per square yard unless approved by the Engineer. The binder shall be applied when the temperature of the binder is between 330°F and 375°F.

The Contractor shall determine the exact application rate of the modified binder and the spread rates in Section 37-1.05 shall not apply. The Contractor shall notify the Engineer of the exact spread rate used and shall be within 5 percent of the selected spread rate. The Contractor shall provide verification of application rates for every 5280 feet.

Modified binder shall not be applied when weather conditions are unsuitable or when the pavement is damp or wet. Excessive wind is considered an unsuitable weather condition. Modified binder shall be applied only when the atmospheric temperature is 65°F or above and the pavement surface temperature is 80°F or above. Modified binder shall not be applied until sufficient screenings are available to immediately cover the binder being applied.

SPREADING SCREENINGS

Screenings for modified binder seal coat shall be spread in conformance with the provisions specified for spreading screenings on asphaltic emulsion in Section 37-1.06, "Spreading Screenings," of the Standard Specifications, except the dampness requirement and the reference to the "breaking" of the emulsion shall not apply.

Screenings for modified binder seal coat shall be applied where shown on the plans at a rate-not to exceed 38.7 pounds per square yard unless approved by the Engineer.

The Contractor shall determine the exact application rate of the screenings and the spread rates in Section 37-1.06 shall not apply. The Contractor shall notify the Engineer of the exact spread rate used and shall be within 5 percent of the selected spread rate. The Contractor shall provide verification of application rates for every 5280 feet.

When placing modified binder seal coat at intersections, left turn lanes, gore points, and other irregular areas, modified binder application shall not be in excess of that which can be covered with screenings within 10 minutes.

When joining edges against areas with screenings, the joint shall be swept clean of excess screenings prior to the adjacent application of modified binder. Transverse joints of this type shall be constructed by placing roofing paper across and over the end of the previous modified binder seal coat application. Once the spraying has progressed beyond the paper, the paper shall be removed immediately.

The longitudinal joint between adjacent applications of screenings shall coincide with the line between designated traffic lanes. Longitudinal joints shall be overlapped for complete coverage. The overlap shall not exceed 4 inches.

Joint edges shall be swept clean of overlapping cover material prior to application of adjacent asphalt binder. Reasonable precautions shall be taken to avoid skips and overlaps at joints. Defects shall be corrected at the Contractor's expense.

At longitudinal joints with screenings, the edge shall be broomed back and blended to eliminate differences in elevation. The joints shall be free from ridges and depressions and shall have a uniform appearance consistent with the adjacent sealed surface. Defects shall be corrected at the Contractor's expense.

FINISHING

Modified binder seal coat shall be finished in conformance with the provisions for finishing screenings spread on asphaltic emulsion in Section 37-1.07, "Finishing," of the Standard Specifications. In addition, the following shall apply:

- A. Removal of excess screenings shall be completed before uncontrolled traffic is permitted on the modified binder seal coat
- B. Initial rolling of the modified binder seal coat shall consist of a minimum of one complete coverage with three pneumatic-tired rollers and shall begin immediately behind the screenings spreader. The distance between the rollers and the screenings spreader shall not exceed 200 feet at any time during the spreading of screenings operations.
- C. A minimum of 3 complete coverages, after the initial coverage, shall be made with pneumatic-tired rollers on the modified binder seal coat. Each coverage of the roller shall be as defined as many passes as are necessary to cover the entire width being paved. A pass shall be one movement of a roller in either direction.
- D. An initial brooming shall be performed after completion of the final rolling and prior to routing public traffic on the modified asphalt binder seal coat.
- E. A minimum of 3 complete coverages after the initial coverage, shall be made on the modified binder seal coat. A coverage is defined as many passes as are necessary to cover the entire width being paved. A pass shall be one movement of a roller in either direction. in with pneumatic tired rollers. When determined by the Contractor, the final roller coverage may be made with one steel wheel roller weighing 7.5 tons minimum and 10 tons maximum. If a steel wheel roller is used, the roller shall be operated in the static mode only.
- F. Sweeping shall be a multi-step operation following final rolling of the screenings. Loose screenings shall be removed from the roadway surface and abutting adjacent areas. Loose screenings shall be disposed of at least 150 feet from the nearest waterway.

FLUSH COAT

Flush coat shall consist of an application of a fog seal coat followed by a sand cover to the surface of modified asphalt binder seal coat. Flush coat shall conform to the provisions in Section 37-1, "Seal Coats," of the Standard Specifications and these special provisions.

Flush coat shall be applied to the modified binder seal coat, at the discretion of the Engineer, immediately after initial brooming of the modified binder seal coat and removal of excess screenings and prior to opening the lane to uncontrolled (not controlled with pilot cars) public traffic.

Fog Seal Coat

Asphaltic emulsion (fog seal coat) shall be grade CSS1 or CSS1h or CQS1 as determined by the Contractor.

Emulsion (fog seal) for modified binder seal coat shall be applied where shown on the plans at a rate not to exceed 0.059 gallon per square yard unless approved by the Engineer.

The Contractor shall determine the exact application rate of the emulsion (fog seal). The Contractor shall notify the Engineer of the exact spread rate used and shall be within 5 percent of the selected spread rate.

Attention is directed to Section 7-1.11, "Preservation Of Property," of the Standard Specifications and "Existing Highway Facilities" of these special provisions regarding protecting the highway facilities from the fog seal coat.

During flush coat operations, the surface upon which the flush coat is being applied shall be closed to public traffic. Care shall be taken to avoid tracking fog seal coat material onto existing pavement surfaces beyond the limits of construction.

Sand Cover

Sand cover shall be applied immediately following application of the fog seal coat.

Sand for sand cover shall conform to the provisions for fine aggregate grading in Section 90-3.03, "Fine Aggregate Grading," of the Standard Specifications and these special provisions. Sand shall not contain clay and shall not contain organic material.

Sand for modified binder seal coat shall be applied where shown on the plans at a rate not to exceed 0.5 lb per square foot unless approved by the Engineer.

The Contractor shall determine the exact application rate of the sand. The Contractor shall notify the Engineer of the exact spread rate used and shall be within 5 percent of the selected spread rate.

MEASUREMENT AND PAYMENT

Quantities of modified binder for modified binder seal coat will be measured in the same manner specified for asphalt in Section 92-1.04, "Measurement," of the Standard Specifications.

The contract price paid per ton for modified binder shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in furnishing and applying modified binder, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Quantities of screenings for modified binder seal coat to be paid for by the ton will be determined after preheating and precoating with paving asphalt in the same manner specified for asphalt concrete in Section 39-8.01, "Measurement," of the Standard Specifications.

The contract price paid per ton for screenings (medium, hot-applied) shall include full compensation for furnishing all labor, materials (including paving asphalt for precoating screenings), tools, equipment, and incidentals and for doing all the work involved in furnishing and applying screenings, complete in place, including preparation for seal coat and preheating and precoating screenings, furnishing, placing, maintaining, and removing C6 (Loose Gravel) and W6 (35 MPH) signs and temporary supports or barricades for the signs, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Sand cover will be measured and paid for in the same manner specified for screenings in Section 37-1.08, "Measurement," and Section 37-1.09, "Payment," of the Standard Specifications.

No adjustment in compensation will be made for any increase or decrease in the quantities of asphaltic emulsion (fog seal coat) and sand cover required, regardless of the reason for the increase or decrease. The provisions in Section 4-1.03B, "Increased or Decreased Quantities," of the Standard Specifications shall not apply to the items of asphaltic emulsion (fog seal coat) and sand cover.