



ALABAMA DEPARTMENT OF TRANSPORTATION

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Kay Ivey
Governor

John R. Cooper
Transportation Director

November 16, 2022

MEMORANDUM

To: Proposal Holders

From: Bryan E. Nichols
Assistant Bureau Chief *BEN*

Subject: RACRNH-RACRIM-1059(429)
Jefferson County
December 2, 2022 Letting

Enclosed are the Revised SP Index for the above referenced project. See the attached letter from Mr. Stacey Glass, P.E., State Construction Engineer dated November 15, 2022.

It is the bidder's responsibility to notify vendors, suppliers and subcontractors of this change.

This change must be incorporated into your proposal and used in the preparation of your bid. Failure to do so may cause your bid to be considered irregular and non-responsive and may result in the automatic rejection of your bid.

BEN/jss

Attachment

cc: Mr. DeJarvis Leonard, P.E.



Kay Ivey
Governor

**ALABAMA DEPARTMENT OF TRANSPORTATION
CONSTRUCTION BUREAU**

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John R. Cooper
Transportation Director

November 15, 2022

MEMORANDUM

To: Joe Lister
Office Engineer

From: Stacey N. Glass, P.E.
State Construction Engineer

A handwritten signature in black ink, appearing to be "S. Glass".

Re: Project No. RACRNH-RACRIM-1059(429)
Jefferson County
December 2, 2022 Letting

Please replace Special Provision 22-PS0123 with Special Provision 22-PS0123(2) in the proposal referenced above.

Please inform all prospective bidders of these changes.

jl

pc: File



Alabama Department of Transportation

**REVISED:
11/16/22**

Special Provisions

PROJECT NO(s). RACRNH-RACRIM-I059(429)

JEFFERSON COUNTY, ALABAMA

The Following Special Provisions are supplementary requirements and amendments to the Standard Specifications for Highway Construction. The requirements and amendments given in these Special Provisions take precedence over the requirements given in the Standard Specifications.

| S.P. Code | Special Provision Description |
|--------------|---|
| 22-FH0001(3) | 07/22 Form FHWA-1273 Required Contract Provisions Federal-Aid Construction Projects |
| 22-FH0002 | Title VI Assurance |
| 22-FH0003 | Non-Discrimination Statutes and Authorities |
| 22-FH0004 | Special Training Responsibilities of Equal Employment Opportunity Requirements |
| 22-FH0005 | Required Contract Provision for all Federal Aid Projects for Equal Employment Opportunity |
| 22-GA0003 | Early Award |
| 22-GA0007 | Value Engineering Payment |
| 22-GA0010 | Mobilization |
| 22-GA0011 | Oversize/Overweight Vehicle Permit |
| 22-GA0013 | Roadway Signs |
| 22-GA0015 | Moving and Covering Traffic Control Signs |
| 22-PS0123(2) | Asphalt Pavement (HighMod) |
| 22-PS0128 | Patching |
| 22-PS0129 | Incentive Payments, Disincentive Deductions, Liquidated Damages, and Time Extensions |
| 22-PS0192 | Electronic Submittals for Shop Drawings and Working Drawings |
| 22-WR0037(2) | Highway Construction Wage Rates for Jefferson County |

ALABAMA DEPARTMENT OF TRANSPORTATION

Project Specific Special Provision

DATE: September 22, 2022

PSSP No.: 22-PS0123(2)

SUBJECT: Asphalt Pavements, Project No. RACRNH-RACRIM-1059(429),
Jefferson County

Alabama Standard Specifications, 2022 Edition, SECTION 410, SECTION 420,
SECTION 424, and SECTION 804 shall be amended as follows:

SECTION 410 ASPHALT PAVEMENTS

410.02 Materials.

(c) Anti-Stripping Agents.

Subarticle 410.02(c) shall be replaced by the following.

All warm mix asphalt mixtures, 327E mixes, and 420 mixes shall include an anti-stripping agent. The warm mix additive supplier may certify that an anti-stripping agent is an integral part of the warm mix additive.

All hot mix asphalt mixtures except 327E and 420 shall be tested during design to determine if an anti-stripping agent is needed. During design and production, all other mixes shall have a tensile strength ratio (TSR) of at least 0.80 when tested in accordance with AASHTO T 283 as modified by ALDOT-361. If any TSR value falls below the minimum specified above, plant operations shall cease until corrective measures are taken. However, if any visual stripping occurs in the design or field production, an anti-stripping agent shall be required if deemed necessary by the Engineer. Should it become necessary for the Contractor to include an anti-strip agent in the mix due to the occurrence of visual stripping during field production of the mix after the design tests indicated that the same mix met the above listed TSR requirement, such work will be paid for as Extra Work as defined by Article 104.03. Additional payment for the anti-strip agent will not be made in cases where the same mix has been previously used in field production and visual stripping occurred.

1. Amines.

For amine-based materials, the amount of anti-stripping agent, when required, shall be 0.25 to 1.0 % by weight {mass} of the liquid asphalt binder content for liquid agents and 0.5 to 2.0 % by weight {mass} of the total aggregate for powdered agents. Liquid anti-stripping agent shall be added to the liquid asphalt binder within $\pm 10\%$ of the specified rate, either at the refinery or the Contractor's mixing plant, using approved on-line blending equipment.

2. Hydrated Lime.

For hydrated lime materials the amount of anti-stripping agent, when required, shall be 0.5 to 2.0 % by weight {mass} of the total aggregate for powdered agents. Hydrated lime materials shall meet the requirements as given in Section 805.

3. OrganoSilanes.

For organosilane based materials the amount of anti-stripping agent, when required, shall be 0.05 to 0.1 % by weight {mass} of the liquid asphalt binder content for liquid agents. Liquid anti-stripping agent shall be added to the liquid asphalt binder by approved on-line blending equipment either at the refinery or the Contractor's mixing plant within $\pm 10\%$ of the specified rate.

4. Silicone

Silicone may be used in liquid asphalt binder, not to exceed 2 ounces per 5000 gallons {3 ml per 1000 L}. Except when producing Warm Mix Asphalt, other additives shall not be added

to the liquid asphalt binder unless expressly authorized in writing by the Materials and Tests Engineer.

5. Warm Mix Asphalt Additives

Approved Warm Mix Asphalt Additives from ALDOT list II-27 May be used in liquid Asphalt Binder as an anti-stripping agent when used as directed by the Manufacturer.

The use of any unauthorized additive will be cause for rejection of the mixture.

(d) Composition of Mixtures.

4. Approval of Job Mix Formula by Materials and Tests Engineer.

The third paragraph of Item 410.02(d)4 shall be replaced by the following.

The approved job mix formula for each mixture shall be in effect for a maximum of two years from the approval date on the job mix formula or until the Materials and Tests Engineer withdraws approval by written order.

(e) Recycled Asphalt Plant Mix (RAP) and Reclaimed Asphalt Shingles (RAS).

Item 410.02(e)2. shall be replaced by the following:

2. Allowable Usage of RAP and RAS.

The Contractor shall have the option to use RAP and RAS in accordance with the requirements given in the following table unless shown otherwise on the plans:

| ALLOWABLE USE OF RAP AND RAS Maximum Allowable Percent of RAP and RAS by mass of Total Aggregate Content | | |
|---|---|--|
| Type of Mix | Maximum RAP Content # | Maximum RAP and RAS Content ** |
| 327, Plant Mix Bituminous Base | 25 % | RAS Not Allowed |
| 327-E, Permeable Asphalt Treated Base | RAP Not Allowed | RAS Not Allowed |
| 420, Open Graded Friction Course | RAP Not Allowed | RAS Not Allowed |
| 423, Stone Matrix Asphalt 424, Superpave (Maximum Aggregate Size ½", ¾", 1", 1 ½"), except as given below. | Surface Layers: 20 % with no more than 15 % containing chert *; All Other Layers: 35 % | Surface Layers: 20 % *; All Other Layers: 35 % |
| 424, Superpave (Maximum Aggregate Size 3/8"), except as given below. | Surface Layers: 20% All Other Layers: 35% | RAS Not Allowed*** |
| 424A-336, Superpave Bituminous Concrete Wearing Surface Layer, 3/8" Maximum Aggregate Size, ESAL Range A/B | RAP Not Allowed | RAP & RAS Not Allowed |

* This limitation applies even if the surface layer is to be covered by an Open Graded Friction Course (Section 420). If the aggregate is chert gravel with a bulk specific gravity that is less than 2.550, a maximum of 15 % of the RAP will be allowed. RAP containing chert gravel shall be crushed so that 100 % of the RAP passes the 1/2 inch {12.5 mm} sieve. Additional RAP that does not contain chert gravel may be added to the mixture through a separate feeder.

** RAS shall be limited to 3% by mass of the total aggregate content for surface layers and 5 % by mass of the total aggregate content for all other layers.

*** For projects where the ADT is less than 100 or the surface to be paved is non-trafficked, RAS may be allowed at the contents given for the other 424 Superpave maximum aggregate sizes.

(f) Liquid Asphalt Binder Draindown.

1. Fiber Stabilizer.

Item 410.02(f)1 shall be replaced by the following.

1. Fiber Stabilizer.

A fiber stabilizer is required for some mix types (Section 420, 423, etc). For section 420 mixes the warm mix additive Evotherm 3G may be used in lieu of fibers. A fiber stabilizer may be used on other mix types where asphalt binder cement draindown is a problem. Where RAS is included in the job mix formula, fiber stabilizer shall not be required provided the draindown requirements of 0.30% or less are met when tested at 325°F {163°C} and 350°F {176°C} in accordance with AASHTO T305.

When fiber or Evotherm 3G is used, the dosage rate shall produce a maximum liquid asphalt binder cement draindown of 0.30 % or less when tested at 325°F {163°C} and 350°F {176°C} in accordance with AASHTO T305. When fiber is used, the sampling and testing frequency for all mixes for both Contractor and Department testing during production shall be one test for each 5000 tons {metric tons} or portion thereof. The fiber shall be listed on List II-23, Fibers for use in Hot Mix Asphalt (from the Materials, Sources, and Devices with Special Acceptance Requirements (MSDSAR) manual). If pelletized fibers are used, the fiber within the pellet shall be listed on List II-23. All fibers listed on List II-23 shall meet the requirements of either Item 2, 3, or 4 of this Subarticle.

SECTION 420 POLYMER MODIFIED OPEN GRADED FRICTION COURSE

420.02 Materials.

(a) Aggregates.

Subarticle 420.02(a) shall be replaced with the following.

(a) Aggregates.

The aggregate shall be limited to 100% crushed aggregates of the following: granite, quarried quartzite, slag, sandstone or manufactured lightweight aggregate, all of which shall be from approved sources and meet the appropriate requirements of Sections 801 and 802. However, if additional dust (- 200 {- 75 μm} material) is needed, mineral filler (meeting the requirements of Section 805) or agricultural limestone may be used. If agricultural limestone is used, it shall meet the requirements of ASTM C 602, Standard Specification for Agricultural Liming Materials, for Class E agricultural limestone, so that a minimum of 80.0 % of the material will pass the No. 8 {2.35 mm} sieve and 25.0 % will pass the No. 60 {0.250 mm} sieve. In addition, a minimum of 5.0 % will pass the No. 200 {75 μm} sieve. No more than 10.0 % agricultural limestone shall be used.

The aggregate shall be combined into a total blend that will produce an acceptable job mix

within the gradation limits shown in the following table. The blend shall be made from at least two stockpiles of different gradations. At least 10% of the blend shall be taken from each stockpile.

| AGGREGATE GRADATION FOR OPEN GRADED FRICTION COURSE | |
|--|-------------------------------------|
| Sieve (Square Mesh Type) | Percent Passing By Weight {Mass} |
| 3/4 inch {19.0 mm} | 100 |
| 1/2 inch {12.5 mm} | 85 - 100 |
| 3/8 inch {9.5 mm} | 55 - 65 |
| No. 4 {4.75 mm} | 10 - 25 |
| No. 8 {2.36 mm} | 5 - 10 |
| No. 200 {75 μ m} | 2 - 4 |

As stated in Article 410.02 no RAP or RAS is Allowed

(b) Liquid Asphalt Binder.

Subarticle 420.02(b) shall be replaced with the following.

(b) Liquid Asphalt Binder.

The liquid binder shall be a polymer modified PG 76-22 meeting the requirements of Section 804. The proportion of liquid asphalt binder to total sample by weight {mass} shall be 6.0 % to 9.0 %. The exact proportion shall be fixed by the job mix formula.

Additives or modifiers shall be used to prevent stripping of liquid asphalt binder. These additives or modifiers shall be furnished and used at no additional cost to the State.

(d) Liquid Asphalt Binder Draindown.

Subarticle 420.02(d) shall be replaced with the following.

(d) Liquid Asphalt Binder Draindown.

A fiber stabilizer or Evotherm 3G meeting the requirements given in Section 410 shall be incorporated into the mix to produce a maximum liquid asphalt binder cement draindown of 0.30 % or less when tested at 325° F {163° C} and 350° F {176° C} in accordance with AASHTO T305. The fiber shall be blended into the mix in accordance with the requirements given in Section 410.

SECTION 424 SUPERPAVE BITUMINOUS CONCRETE BASE, BINDER, AND WEARING SURFACE LAYERS

424.02 Materials.

(d) Liquid Asphalt Binder.

Subarticle 424.02(d) shall be replaced by the following:

(e) Liquid Asphalt Binder.

Liquid asphalt binders shall come from an approved producer who is participating in and meeting the requirements of ALDOT-243, *Acceptance Program For Asphalt Materials*. The producer's name shall be listed in the Department's *Materials, Sources, and Devices With Special Acceptance Requirements Manual*, List I-4. The Department has established a list of qualified producers of asphalt materials. Refer to Subarticle 106.01(f) and ALDOT-355 concerning this list. Unless shown otherwise on the plans or in the proposal, liquid asphalt binder for use in all mixes shall meet the requirements of AASHTO M 320, *Standard Specification For Performance Graded Asphalt Binder*, as modified by the requirements given in the following table and Section 804.

| ALLOWABLE ASPHALT BINDER GRADES FOR SUPERPAVE | | | |
|---|---|------------------------------------|------------------------|
| ESAL Range | Traffic (ESALs) | Base, Lower, & Upper Binder Layers | Wearing Surface Layers |
| A/B | ESALs < 1.0x10 ⁶ | PG 67-22 | PG 76-22E |
| C/D | 1.0x10 ⁶ < ESALs < 1.0x10 ⁷ | PG 67-22 | PG 67-22 |
| E | 1.0x10 ⁷ < ESALs < 3.0x10 ⁷ | PG 76-22 | PG 76-22* |
| *The asphalt binder shall be PG 76-22 for leveling when the top of the leveling is within 2 inches {50 mm} of the final pavement surface. The asphalt binder may be PG 67-22 for leveling that is not within 2 inches {50 mm} of the final pavement surface and for all patching and widening. If Open Graded Friction Course (Section 420) layers are required, the final pavement surface shall be the surface of the layer below these layers. | | | |

Asphalt Binders shall meet the requirements of Section 804.

Polymer modifiers shall be blended at an approved refinery and meet the requirements of Section 811. Approved Warm Mix additives or processes are given in List II-27, "Warm Mix Asphalt Products and Processes" of the Materials, Sources, and Devices with Special Acceptance Requirements manual.

(f) Mix Properties.

1. Air Voids (Va).

Item 424.02(e)1 shall be replaced with the following:

1. Air Voids (Va).

The design air voids for all levels of traffic is 3.5 % for mixes containing RAS and 4.0 % for all other mixes, with the following exception: **Item 424A-336, Superpave Bituminous Concrete Wearing Surface Layer, 3/8" Maximum Aggregate Size, ESAL Range A/B located beneath the lower binder layer as shown in the plans shall be designed at 2.0% air voids.**

SECTION 804 ASPHALT MATERIALS

804.02 Performance Graded Asphalt Binders (PGAB).

Article 804.02 shall be replaced by the following:

804.02 Performance Graded Asphalt Binders (PGAB).

The material supplied under this Article shall be asphalt prepared by the refining of asphaltic petroleum. No air-blown or oxidized asphalt will be allowed. The refined asphalt binder shall be homogeneous, free of water and shall not foam when heated at 347 °F {175 °C}.

The PG 58-22, PG 64-22, and PG 76-22 binders shall conform to the requirements given in AASHTO M-320 as shown in Tables 1, 2 and 4 in Article 804.07. The PG 67-22 binder (not shown in AASHTO M-320)

shall conform to the requirements given in AASHTO M-320 and the requirements the requirements given in Table 3 of Article 804.07. PG 76-22E shall conform to AASHTO M 332 and Table 4A of Article 804.07.

Shipping temperature of the asphalt from the refinery shall not exceed 356 °F {180 °C} for unmodified binders. For polymer modified binders, shipping temperatures in excess of 356 °F {180 °C} may be allowed with the approval of the Materials and Tests Engineer. At the time of use, the asphalt temperature shall comply with the requirements of Item 401.03(d)2. or Subarticle 410.02(b) whichever is applicable.

804.07 Tables of Asphalt Materials.

- (d) Asphalt Materials Table Number 4, Grade PG 76-22 and Table Number 4A, Grade PG 76-22E.

Subarticle 804.07(d). shall be replaced by the following:

- (d) Asphalt Materials Table Number 4, Grade PG 76-22 and Table Number 4A, Grade PG 76-22E.

| ASPHALT MATERIALS TABLE NO. 4 | | |
|--|----------------------------|---------------------------|
| SPECIFICATIONS FOR PERFORMANCE GRADED ASPHALT BINDER | | |
| Property | Grade PG 76-22 | |
| | Specification | Test Method |
| <i>Original Binder</i> | | |
| Flash Point Temperature | Minimum 230 °C | AASHTO T 48 |
| Rotational Viscosity | Maximum 3 Pa•s @ 135 °C | AASHTO T 316 |
| Dynamic Shear, $G^*/\sin \delta$ | Minimum 1.00 kPa @ 76°C | AASHTO T 315 |
| <i>Rolling Thin Film Oven Residue (AASHTO T 240)</i> | | |
| Mass Loss (RTFO) | Maximum 1.00 % | AASHTO T 240 |
| Dynamic Shear, $G^*/\sin \delta$ | Minimum 2.20 kPa @ 76 °C | AASHTO T 315 |
| Elastic Recovery | Minimum 50 % @ 10 °C | AASHTO T 301 ¹ |
| <i>Pressure Aging Vessel Residue (AASHTO R 28)</i> | | |
| Dynamic Shear, $G^*\sin \delta$ | Maximum 5000 kPa @ 26.5 °C | AASHTO T 315 |
| Creep Stiffness, S | Maximum 300 MPa @ -12 °C | AASHTO T 313 |
| m-value | Minimum 0.300 @ -12 °C | AASHTO T 313 |
| ¹ The following exceptions shall be made to the requirements given in AASHTO T 301: The statement given in Section 4.5 that reads "Attach the clips to the pins or hooks of the force adapter and the testing machine..." shall be disregarded. The mold shall be in accordance with the requirements given in ASTM D 6084 with dimensions noted in this method. All Elastic Recovery failures will be subject to FTIR scans for acceptability. | | |

| ASPHALT MATERIALS TABLE NO. 4A | | |
|---|-------------------------------------|--------------|
| SPECIFICATIONS FOR PERFORMANCE GRADED ASPHALT BINDER | | |
| Property | Grade PG 76-22E | |
| | Specification | Test Method |
| <i>Original Binder</i> | | |
| Flash Point Temperature | Minimum 230 °C | AASHTO T 48 |
| Rotational Viscosity | Maximum 8 Pa•s @ 135 °C | AASHTO T 316 |
| Dynamic Shear, $G^*/\sin \delta$ | Minimum 1.00 kPa @ 76°C | AASHTO T 315 |
| <i>Rolling Thin Film Oven Residue (AASHTO T 240)</i> | | |
| Mass Loss (RTFO) | Maximum 1.00 % | AASHTO T 240 |
| Non-recoverable Creep Compliance, $J_{nr3.2}$ | Maximum 0.5kPa ⁻¹ @ 76°C | AASHTO T 350 |
| Non-recoverable Creep Compliance, $J_{nr diff}$ | 75% | AASHTO T 350 |
| Recovery | Minimum 90% for $J_{nr3.2}$ | AASHTO T 350 |
| <i>Pressure Aging Vessel Residue (AASHTO R 28)</i> | | |
| Dynamic Shear, $G^*\sin \delta$ | Maximum 6000 kPa @ 25 °C | AASHTO T 315 |
| Creep Stiffness, S | Maximum 300 MPa @ -12 °C | AASHTO T 313 |
| m-value | Minimum 0.300 @ -12 °C | AASHTO T 313 |

All binders used in Tables 4 and 4A shall be made by the addition of polymer to a base liquid asphalt without using air blown or oxidized asphalt. The base liquid asphalt shall be a straight run non-modified asphalt meeting the specification grades for PG 52-28, PG 58-22, PG 64-22, or PG 67-22.

All PG 76-22 shall contain a minimum of 2.5 %, by weight, polymer solids. All Elastic Recovery failures will be subject to FTIR scans for acceptability.

All PG 76-22E shall contain a minimum of 7.5 %, by weight, polymer solids.

A sample and infrared scan (Fourier Transform Infrared, FTIR) using the ALDOT 408 test method to determine the styrene and butadiene peaks along with the percentage of polymer added at the

appropriate polymer loading shall be submitted to the Materials and Tests Engineer for laboratory evaluation prior to use. All polymers shall conform to Section 811 for polymer additives.

All Polymer Modified Asphalt Binder manufacturers shall submit the information required in Article 811.01 annually or upon request by the Department.