



August 29, 2023

RE: Invitation to Bid Howard County RFQ 2024002M "LRA TY A+" Bid

Dear Vendor,

Howard County Road & Bridge thanks you for your interest in our 2024002M LRA Material Bid. We will be taking bids from now until September 21, 2023, 10:00 A.M. Your Bid Packet is attached. If you have any questions please feel free to contact me at (432) 264-2208 or brian.klinksiek@howardcountytexas.gov

Sealed bids must include the 2 page Notice to Bidders signed and initialed as indicated. Bid must be received in the Howard County Auditor's office prior to 10:00 A.M. September 21, 2023. Mark sealed envelopes, "RFQ 2024002M".

Return to Howard County Auditor
 Jackie Olson
 300 S Main, Room 203
 P.O. Box 1949
 Big Spring, Texas 79721

Sincerely,

A handwritten signature in green ink that reads 'Brian J. Klinksiek'.

Brian J. Klinksiek P.E., D.R.

Invitation To Bid Howard County 2024002M "LRA TY A+" Bid

The Howard County Auditor will accept sealed bids until 10:00 AM on September 21, 2023. Specifications may be obtained at the Howard County Road and Bridge Department office, 3604 Old Colorado City Road, Big Spring, Texas 79720.

Item 8009-9001 LRA PAV TY-II GR-A(P+) (PAV MAT). This is a material purchase delivered to the Howard County Road & Bridge yard, 3604 Old Colorado City Rd, Big Spring, Texas (32°18'37.48"N, 101°26'19.22"W).

Bids may be mailed to the Howard County Auditor, at P.O. Box 1949, Big Spring, Texas 79721-1949 or delivered to the Auditor's Office, Room 202, Howard County Courthouse. **Mark Sealed Envelope "RFQ 2024002M"**.

Bids will be presented to the Commissioner's Court at 3:30 PM on September 25th for their consideration. The Court reserves the right to reject any or all bids.

Jackie Olson-Howard County Auditor

NOTICE TO BIDDERS RFQ 2024002M

1. Bids are to be submitted on this form. Be sure to include both pages 1-2. Each bid shall be placed in an envelope, sealed and properly identified with the bid title and delivered to the County Auditor's Office before 10:00 A.M., Thursday, September 21, 2023. Late bids will not be considered under any circumstances. Bids will be opened at that time and awarded at the Howard County Commissioner's Court regular meeting on September 25, 2023.
2. The County is exempt from Federal Excise Tax, State Tax and Local Tax. Do not include tax in bid. If it is determined that tax was included in the bid, it will not be included in the tabulation or any awards and will be deleted from subsequent invoices.
3. Bids cannot be altered or amended after opening time. Any alterations made before opening time must be signed by the bidder or his agent. No bid can be withdrawn after the opening time without approval of the Commissioners' Court based on reasonable acceptable reason.
4. The County will evaluate the bids and make awards for supplies, materials, services and equipment on the basis of the lowest and best bid, which meet the specifications.
5. The quantities in the proposal are approximate. The quantities of work and materials may be increased or decreased as considered necessary to complete the work as planned and contemplated. The County reserves the right to accept or reject all or any part of any bid and award the bid to best serve the interest of the County.
6. By signing and executing this bid, the bidder certifies and represents to the County that bidder has not offered, conferred or agreed to confer any pecuniary benefit or other thing of value for the receipt of special treatment, advantage, information, recipient's decision, opinion, recommendation, vote or any other exercise of discretion concerning this bid.
7. Bidder further certifies and represents that bidder has not violated any State, Federal, Local Law regulations or ordinance relating to bribery, improper influence, collusion, discrimination or other similar crimes and all items or services provided or delivered under and awarded shall conform hereto.
8. Awarded bid will be paid for out of current county funds.
9. **Insurance coverage limits shall conform to the attached Exhibit A.**
10. Bid unit price on quantity specified, extend and show total. In case of errors in extension, unit price shall govern.
11. Bid prices must be firm for acceptance 60 days from opening date of bid and remain firm until June 30, 2024.
12. Material bid must show the number of days required to produce material under normal conditions after receipt of an order.
13. Must meet 2014 TxDOT Special Specification for Item 330, SS T9210 Limestone Rock Asphalt Performance Plus, Type II specifications.
14. Material will be delivered to the Howard County Road & Bridge Yard (32°18'37.48"N, 101°26'19.22"W).

NOTICE TO BIDDERS RFQ 2024002M

BID SUBMITTED BY: _____

NAME & TITLE: _____ PHONE NO: _____

BID PRICE :

Item 8009-9001 LRA PAV TY-II GR-A(P+) (SHLDR MAT) (HC R&B YD)
(32°18'37.48"N, 101°26'19.22"W).

1000 TONS _____\$/TON \$ _____

Total \$ _____

Time needed from order receipt until delivery: _____

SIGNATURE: _____ NOTICE TO BIDDERS Page 2

DISCLOSURE OF CERTAIN RELATIONSHIPS

Effective January 1, 2006, Chapter 176 of the Texas Local Government Code requires that any vendor or person considering doing business with a local government entity disclose in the Questionnaire Form CIQ, the vendor or person's affiliation or business relationship that might cause a conflict of interest with a local government entity. By law, this questionnaire must be filed with the County Clerk of Howard County no later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. See Section 176.006, Local Government Code. A person commits an offense if the person violates Section 176.006, Local Government Code. An offense under this section is a Class C misdemeanor.

A copy of the law is available at:

<https://statutes.capitol.texas.gov/Docs/LG/htm/LG.176.htm>

Frequently ask questions are available at:

<https://www.county.org/TAC/media/TACMedia/Legal/Legal%20Publications%20Documents/2019-Disclosure-of-Certain-Business-Relationships.pdf>

The forms for reporting are available at:

<https://www.ethics.state.tx.us/data/forms/conflict/CIQ.pdf>

By submitting a response to this request, the vendor represents that it is in compliance with the requirements of Chapter 176 of the Texas Local Government Code.

Please turn completed forms to the Howard County Auditor's Office located at 300 Main, Room 202 Big Spring, TX or mail to P.O. Box 1949, Big Spring, TX 79721.

EXHIBIT A

- A Contractor shall, at all times during the term hereof, maintain such insurance coverage as may be required by County. All such insurance, including renewals, shall be subject to the approval of County for adequacy of protection and evidence of such coverage shall be furnished to County on Certificates of Insurance indicating such insurance to be in force and effect and providing that it will not be canceled during the performance of Work under this Agreement without thirty (30) calendar days prior written notice to County. Completed Certificates of Insurance shall be filed with County prior to the performance of services hereunder, provided however, that Contractor shall at any time upon request, file duplicate copies of the policies of such insurance with County.
- B If in the judgment of County, prevailing conditions warrant the provision by Contractor of additional liability insurance coverage or coverage which is different in kind, County reserves the right to require the provision by Contractor of an amount of coverage different from the amounts or kind previously required and shall afford written notice of such change in requirements thirty (30) days prior to the date on which the requirements shall take effect. Should the Contractor fail or refuse to satisfy the requirement of changed coverage within thirty (30) days following County's written notice, this Agreement shall be considered terminated on the date that the required change in policy coverage would otherwise take effect.

General Conditions

The following condition shall apply to all insurance policies obtained by Contractor for the purpose of complying with this Agreement:

- 1) Named Insureds: All insurance policies required herein shall be drawn in the name of Contractor, with County, its council members, board and commission members, officials, agents, guests, invitees, consultants and employees named as additional insureds, except on Workers' Compensation coverage.
- 2) Waiver of Subrogation: Contractor shall require its insurance carrier(s), with respect to all insurance policies, to waive all rights of subrogation against County, its council members, board and commission members, officials, agents, guests, invitees, consultants and employees.
- 3) Certificates of Insurance: At or before the time of execution of this Agreement,

Contractor shall furnish County's Risk Manager with certificates of insurance as evidence that all of the policies required herein are in full force and effect and provide the required coverage and limits of insurance. All certificates of insurance shall clearly state that all applicable requirements have been satisfied. The certificates shall provide that any company issuing an insurance policy shall provide to County not less than thirty (30) days advance notice in writing of cancellation, non-renewal, or material change in the policy of insurance. In addition, Contractor and insurance company shall immediately provide written notice to County's Risk Manager upon receipt of notice of cancellation of any insurance policy, or of a decision to terminate or alter any insurance policy. Certificates of insurance and notices of cancellations, terminations, or alterations shall be furnished to:

County Engineer at 3604 Old Colorado City Rd, Big Spring Texas 79720.

- 4) Contractor's Liability: The procurement of such policy of insurance shall not be construed to be a limitation upon Contractor's liability or as a full performance on its part of the indemnification provisions of this Agreement. Contractor's obligations are, notwithstanding any policy of insurance, for the full and total amount of any damage, injury, or loss caused by or attributable to its activities conducted at or upon the premises. Failure of Contractor to maintain adequate coverage shall not relieve Contractor of any contractual responsibility or obligation.
- 5) Subcontractors' Insurance: Contractor shall cause each Subcontractor and Sub-Sub-Contractor of Contractor to purchase and maintain insurance of the types and in the amounts specified below. Contractor shall require Subcontractors and Sub-Subcontractors to furnish copies of certificates of insurance to the County Engineer evidencing coverage for each Subcontractor and Sub-Subcontractor.

Types And Amounts Of Insurance Required

Contractor shall obtain and continuously maintain in effect at all times during the term hereof, at Contractor's sole expense, insurance coverage as follows with limits not less than those set forth below:

- 1) Commercial General Liability: This policy shall be occurrence-type policy and shall protect Contractor and additional insureds against all claims arising from bodily injury, sickness, disease or death of any person (other than Contractor's employees) and damage to property of County or others arising out of the act or omission of Contractor or its agents and employees. This policy shall include completed operations, products liability, contractual coverage, broad form property coverage, explosion, collapse, underground, premises/operations, and independent contractors (to remain in force for two years after final payment). Coverage limits shall not be less than:

\$1,000,000.00 General Aggregate
\$1,000,000.00 Products Completed Operations
\$1,000,000.00 Personal & Advertising Injury
\$1,000,000.00 Each Occurrence
\$ 100,000.00 Fire Damage (Any one Fire)

- 2) Business Automobile Liability: This policy shall protect Contractor and the additional insureds against all claims for injuries to members of the public and damage to property of others arising from the use of motor vehicles and shall cover operation on and off the premises of all motor vehicles licensed for highway use, whether they are owned, non-owned or hired. Coverage limits shall not be less than:

\$1,000,000.00 Combined Single Limit

- 3) Workers' Compensation and Employer's Liability: If Contractor hires any employees, Contractor shall maintain Workers' Compensation and Employer's Liability insurance, which shall protect Contractor against all claims under applicable state workers' compensation laws and employer's liability. The insured shall also be protected against claim for injury, disease or death of employees which for any reason, may not fall within the provisions of a workers' compensation law. Coverage shall not be less than:

Statutory Amount	Workers' Compensation
\$ 500,000.00	Employer's Liability, Each Accident Employer's
\$ 500,000.00	Liability, Disease - Each Employee Employer's
\$ 500,000.00	Liability, Disease - Policy Limit

DMS-9210**Limestone Rock Asphalt***Effective Date: May 2019***1. DESCRIPTION**

This specification governs the production, quality control, and quality assurance of native limestone rock asphalt (LRA) aggregate used for surface treatments, and of cold mixed material consisting of native LRA aggregate, fluxing material, water, and when specified, additives and virgin aggregates.

2. MATERIALS

2.1. LRA Aggregates for Surface Treatments. Provide LRA aggregates for surface treatments of the type, grade, and surface aggregate classification (SAC) shown on the plans or purchase order in accordance with the material requirements of Item 302, "Aggregates for Surface Treatments."

2.2. Type I LRA and Type II LRA Mixtures. Type I LRA mixture consists entirely of native LRA aggregate, flux material, water, and additives. Type II LRA mixture consists of a blend of native LRA aggregate, virgin aggregates, fluxing material, additives, and water.

Provide LRA mixtures of the type, grade, and SAC shown on the plans or purchase order and in accordance with the following requirements.

2.3. Aggregate. Furnish aggregates from sources that conform to the requirements shown in Table 1A or Table 1B and as specified in this Section, unless otherwise shown on the plans. Provide aggregate stockpiles that meet the definition in this Section for either a coarse aggregate or fine aggregate. Supply mechanically crushed gravel or stone aggregates that meet the definitions in Tex-100-E. Materials and Tests Division (MTD) will designate the plant or the quarry as the sampling location. Samples must be from materials produced for the project. The Engineer will establish the SAC and MTD will perform Los Angeles abrasion, magnesium sulfate soundness, and Micro-Deval tests. Perform all other aggregate quality tests listed in Table 1A or Table 1B and document all test results. MTD may run tests on independent or split samples to verify Contractor test results. Stockpile aggregates for each source and type separately.

2.3.1. Coarse Aggregate. Coarse aggregate stockpiles must have no more than 20% material passing the No. 10 sieve. Provide aggregates from sources listed in the Department's [Bituminous Rated Source Quality Catalog](#) (BRSQC). Provide non-listed sources only when tested by MTD and approved before use. Allow 30 calendar days for MTD to sample, test, and report results for non-listed sources.

Provide coarse aggregate with a minimum SAC as shown on the plans. SAC requirements apply only to aggregates used on the surface of travel lanes, unless otherwise shown on the plans. The SAC for sources on the Department's Aggregate Quality Monitoring Program (AQMP) is listed in the BRSQC.

When a Type II LRA mixture is specified, Class B aggregate may be blended with Class A aggregate to meet requirements for Class A materials. When blending Class A and B aggregates to meet a Class A requirement, ensure that at least 50% by weight or volume of the material retained on the No. 4 sieve comes from the Class A aggregate source. Blend virgin aggregate with native LRA aggregate in the percentages shown in Table 4. When blending, do not use Class C aggregates.

2.3.2. LRA Aggregate. Native LRA aggregate consists of limestone impregnated with naturally occurring asphalt. LRA aggregates that contain less than 1% of naturally occurring asphalt are defined as white rock. Each

aggregate source proposed for use will be sampled and tested to determine compliance with Table 1A or Table 1B requirements before the addition of fluxing material, additives, and water.

2.3.3. **Virgin Aggregate.** Provide virgin aggregates that meet the requirements of Table 1A or Table 1B. Each aggregate source proposed for use will be sampled and tested to determine compliance with Table 1A or Table 1B requirements before the addition of fluxing material, additives, and water.

2.3.4. **Fine Aggregate.** Fine aggregate stockpiles must have no more than 30% material retained on the No. 10 sieve. Supply fine aggregates that are free from organic impurities. MTD may test the fine aggregate in accordance with Tex-408-A to verify that the material is free from organic impurities. Use only fine aggregates generated by the production and handling of LRA or the virgin coarse aggregate. Use LRA fine aggregate that has a naturally impregnated bitumen content of 5.0 to 8.5% when tested in accordance with Tex-236-F.

If 10% or more of the stockpile is retained on the No. 4 sieve, test the stockpile and verify that it meets the requirements in Table 1B for Coarse Aggregate Angularity (Tex-460-A) and Flat and Elongated Particles (Tex-280-F).

Table 1A
Aggregate Quality Requirements for LRA Used in Surface Treatments (Item 302)

Property	Test Method	Native LRA Aggregate Requirement
SAC	AQMP	As shown on the plans
Deleterious material ¹ , %, Max	Tex-217-F, Part I	2.0 ¹
Decantation, %, Max	Tex-406-A	1.5
Flakiness index, Max	Tex-224-F	17 ²
Los Angeles abrasion, %, Max	Tex-410-A	40 ²
Magnesium sulfate soundness, 5 cycles, %, Max	Tex-411-A	25
Micro-Deval abrasion ³ , %, Max	Tex-461-A	Note 3
Naturally impregnated bitumen content, total combined gradation, % by weight	Tex-236-F	4.0–7.0
White rock count ⁴ , % by weight	Tex-220-F	15–35

1. Deleterious material includes iron pyrites.
2. Unless otherwise shown on the plans.
3. Not used for acceptance purposes. Used by MTD as an indicator of the need for further investigation.
4. White rock count applies to aggregate retained on the #4 sieve.

Table 1B
Aggregate Quality Requirements for LRA Used in Mixtures (Item 330)

Property	Test Method	Requirement	
		Native LRA Aggregate	Virgin Aggregate
Coarse Aggregate			
SAC	AQMP	As shown on the plans	A
Deleterious material, %, Max	Tex-217-F, Part I	1.5	1.5
Decantation, %, Max	Tex-406-A	N/A	1.5
Micro-Deval abrasion, %, Max	Tex-461-A	Note 1	Note 1
Los Angeles abrasion, %, Max	Tex-410-A	40 ²	25
Magnesium sulfate soundness, 5 cycles, %, Max	Tex-411-A	30	25
Coarse aggregate angularity, 2 crushed faces, %, Min	Tex-460-A, Part I	N/A	85 ³
Flat and elongated particles @ 5:1, %, Max	Tex-280-F	N/A	10
Combined Aggregate ⁴			
Naturally impregnated bitumen content, total combined gradation, % by weight	Tex-236-F	5.0–8.5	N/A

1. Not used for acceptance purposes. Used by MTD as an indicator of the need for further investigation.
2. Unless otherwise shown on the plans.
3. Unless otherwise shown on the plans. Only applies to crushed gravel.
4. Aggregates, without added mineral filler or additives, combined as used in the job mix formula (JMF).

- 2.4. **Fluxing Material.** Provide fluxing material, composed of flux oil (a blend of asphalt and oil) or a blend of flux oil and aromatic oil, meeting the requirements of Table 2. When required by MTD, provide a test report showing that the fluxing material meets the requirements of Table 2. Use fluxing material in the paving mixture to provide materials that remain workable in a stockpile for at least 6 mo.

Table 2
Fluxing Material Properties

Property	Material	Flux Oil		Aromatic Oil	
	AASHTO or ASTM Test Procedure	Min	Max	Min	Max
Kinematic viscosity, 140°F, cSt	T 201	60	200	–	150
Loss on heating, % by weight	D 6/6M	–	10	–	12
Water, %	D 95	–	0.2	–	0.2
Flash point, C.O.C., °F	T 48	200	–	135	–

- 2.5. **Water.** Provide water that meets the requirements of Item 204, “Sprinkling.”

- 2.6. **Additives.** When shown on the plans, use the type and rate of additive specified. Other additives may be used, when necessary, to meet the requirements of this Specification. Approved additives must be listed in the Quality Control Plan (QCP) as specified in Section 4.3 of this Specification.

Other additives, if used, may not adversely affect the LRA material's stockpile life, unless otherwise directed. If other additives are used, produce a demonstration stockpile of at least 100 tons of LRA material at the LRA production sight and allow to sit for at least 6 mo. to demonstrate that the additive has not adversely affected stockpile life, unless otherwise directed.

If lime is specified or selected for use as an antistripping agent, add only to the virgin aggregate in accordance with Item 301, “Asphalt Antistripping Agents.” If a liquid antistripping agent is used, add in accordance with Item 301. Do not add lime directly into the mixing drum of any plant where lime is removed

through the exhaust stream, unless the plant has a baghouse or dust collection system that re-introduces the lime back into the drum.

- 2.7. **Precoating.** When shown on the plans, precoat aggregate uniformly and adequately with asphalt material to the satisfaction of the Engineer. When shown on the plans, specific aggregates may be prohibited from being precoat. Do not precoat LRA aggregate that contains visual surface moisture or excessive quantities of fines. Meet the requirements of Tables 2 and 3 before precoating. Furnish precoat aggregate that spreads uniformly using approved mechanical spreading equipment.

The Engineer will reject precoat aggregate that contains more than 0.5% passing the No. 40 sieve as determined by Tex-200-F, Part I.

- 2.7.1. **Asphalt Material.** Precoat the aggregates with asphalt material that meets the requirements of Item 300, "Asphalts, Oils, and Emulsions." Precoat the LRA with flux oil meeting the requirements of Item 330, "Limestone Rock Asphalt Pavement." Unless a specific precoat material is specified on the plans, use any asphalt material that meets the requirements of Item 300.

3. EQUIPMENT

- 3.1. **Field Office and Inspection Laboratory.** Field office and inspection laboratory furnishings and equipment will be subject to approval. As directed, maintain, repair, or replace the building and equipment immediately, if either the building or equipment becomes inadequate for its intended use. Provide a field office and inspection laboratory with the following:
- controlled access with security measures controlled by MTD,
 - unrestricted internet access,
 - ceilings at least 8 ft. high,
 - square footage as approved by MTD,
 - adequate heating, ventilation, and air conditioning system,
 - adequate electrical outlets,
 - a sink with hot and cold running water,
 - windows,
 - impervious floor covering,
 - enough ventilation for testing equipment, and
 - restroom facilities that include:
 - a flush toilet,
 - a sink with hot and cold running water,
 - a sewer or septic tank with connections, and
 - adequate restroom supplies.
- 3.2. **Mixing Equipment.** Provide required or necessary equipment in accordance with Item 320, "Equipment for Asphalt Concrete Pavement." Use either weigh-batch or continuous mixing plants to produce pre-coated LRA aggregates, Type I LRA mixture, or Type II LRA mixture. The following requirements are modifications or additions to those in Item 320.
- 3.2.1. **Weigh-Batch Plants.**
- 3.2.1.1. **Screening and Proportioning.** Provide a enough number of bins and screens to adequately proportion the materials.
- 3.2.1.2. **Fluxing Material Measuring System.** Provide a fluxing material measuring device in the fluxing material line leading to the mixer to accurately determine the accumulated amount of fluxing material. Make permanent provisions for checking the accuracy of the meter output. Provide scales to hold and weigh flux for one batch.

- 3.2.1.3. **Other Liquid Additive Measuring System (Except Liquid Antistripping Agents).** Provide a liquid additive metering device leading to the mixer to accurately determine the accumulated amount of liquid additive.
- 3.2.1.4. **Mixer.** Equip the mixer with a spray bar that will distribute the fluxing material quickly and uniformly throughout the mixer.
- 3.2.2. **Continuous Mixing Plants.**
- 3.2.2.1. **Screening and Proportioning.** Provide enough number of bins and screens to adequately proportion the materials. These requirements also apply to stockpiled material proposed for direct use by a continuous mixing plant without the use of plant bins.
- 3.2.2.2. **Fluxing Material Measurement System.** Place a fluxing material measuring device in the fluxing material line leading to the mixer to accurately determine the accumulated amount of fluxing material. Make permanent provisions for checking the accuracy of the meter output.
- 3.2.2.3. **Other Liquid Additive Measuring System (Except Liquid Antistripping Agents).** Provide a liquid additive metering device leading to the mixer to accurately determine the accumulated amount of liquid additive.
- 3.2.2.4. **Mixer.** Provide a continuous type mixer large enough to produce not less than 40 tons of mixture per hr. Equip the mixer with a spray bar that will distribute the fluxing material quickly and uniformly throughout the mixer.

4. CONSTRUCTION

- 4.1. **Certification.** Provide a Level IA certified specialist by the Department-approved hot-mix asphalt certification program at the plant during production operations to conduct all sampling and testing.
- 4.2. **Reporting.** Use Department-provided software to record and calculate all test data.
- 4.2.1. **Production Testing.** MTD and the Producer will provide test results to the other party within two working days of performing all required testing. MTD and the Producer will immediately report to the other party any test result that requires production to be suspended or that fails to meet the specification requirements of Item 302 or Item 330. Use the approved communication method (e.g., email, paper copy) to submit test results to MTD. MTD may suspend production if test results are not received within two working days of performing all required testing. The Producer may, at its own risk, ship material before completing and reporting all required testing and information to MTD. Notify MTD each time this occurs and immediately provide shipment information specified in Section 4.2.2. Replace material that does not meet the requirements listed in Tables 1b, 2, 3, 4, 5, and 6, shipped at own risk.
- Use the procedures described in Tex-233-F to plot the results of all quality control and quality assurance testing. Update the control charts as soon as test results become available. Make the control charts readily accessible at the field laboratory. MTD may suspend production for failure to update control charts.
- 4.2.2. **Shipment Information.** Use Department-provided software to report shipment information to include the following:
- shipment date,
 - Control-Section-Job (CSJ) number,
 - project number,
 - requisition or purchase order and Item numbers,
 - maintenance contract numbers,
 - district,
 - county,

- highway,
- contractor,
- delivery destination,
- material type,
- material quantity, and
- railcar numbers, if shipped by rail.

The Producer will provide this information within one working day of shipment. Perform the quality control of LRA according to the production testing frequency established in this Specification. The Department will perform quality assurance. MTD may suspend production for failure to report shipment information.

- 4.3. **Quality Control Plan (QCP).** Develop a QCP and submit a written QCP to MTD for approval before the beginning of production. Follow the QCP in detail. Obtain approval from MTD for changes to the QCP made during production. MTD may suspend operations if the Contractor fails to provide or comply with the QCP.

Include the following items in the QCP for LRA surface treatment aggregate and LRA mixtures as appropriate.

- 4.3.1. **Project Personnel.** For project personnel, include:

- a list of individuals responsible for quality control with authority to take corrective action and
- contact information for each individual listed.

- 4.3.2. **Material Delivery and Storage.** For material delivery and storage, include:

- the sequence of material processing, delivery, and minimum quantities to assure continuous plant operations;
- aggregate stockpiling procedures to avoid contamination and segregation;
- frequency, type, and timing of LRA and aggregate stockpile testing to assure conformance of material requirements before mixture production;
- flux oil for use in the LRA mixture;
- aromatic oil for use in the LRA mixture; and
- additive for use in the LRA mixture.

- 4.3.3. **Production.** For production, include:

- loader operation procedures to avoid contamination in cold bins;
- the number of bins and the aggregate size to be placed in each bin for each type of LRA mixture produced;
- procedures for calibrating and controlling cold feeds;
- procedures to eliminate debris and oversized material;
- procedures for adding and verifying rates of each applicable mixture component (i.e., LRA, white rock, aggregates, flux oil, additives) to minimize the formation of flux balls;
- procedures for LRA mixture testing to assure conformance of material requirements during production;
- procedures for reporting job control test results; and
- procedures to avoid segregation in the silo.

- 4.4. **Mixture Design.**

- 4.4.1. **Mixture Properties.** Provide completed LRA mixtures meeting the requirements of Tables 3, 4, and 5 for the Type, Grade, and SAC shown on the plans or purchase order.

Table 3
Master Grading per Tex-200-F, Part I, % Cumulative Retained by Weight

Sieve Size	Type I						Type II			
	Grade						Grade			
	AA Coarse Base	A Medium Base	B Fine Base	C Coarse Surface	CC Medium Surface	D Fine Surface	BS Surface	CS Medium Surface	DS Fine Surface	FS Thin Surface
1-1/2"	0	—	—	—	—	—	—	—	—	—
1-1/4"	0–10	—	—	—	—	—	—	—	—	—
1"	—	0	—	—	—	—	—	—	—	—
7/8"	15–30	0–10	—	—	—	—	—	—	—	—
3/4"	—	—	—	—	—	—	0	—	—	—
5/8"	—	5–15	0	—	—	—	0–2	0	—	—
1/2"	—	—	0–2	0	0	—	0–10	0–2	0	—
3/8"	25–45	25–35	5–15	0–2	0–2	0	10–25	0–10	0–2	0
1/4"	—	—	—	—	—	0–5	—	—	—	—
#4	45–60	50–60	45–60	35–50	35–50	10–25	40–55	35–55	10–25	0–15
#10	60–75	65–75	60–75	65–80	50–65	50–65	60–75	60–75	50–65	35–60

Table 4
Mixture Components % by Weight

	Mixture Component						Type II		Type II	
							Grade		Grade	
	AA Coarse Base	A Medium Base	B Fine Base	C Coarse Surface	CC Medium Surface	D Fine Surface	BS Surface	CS Medium Surface	DS Fine Surface	FS Thin Surface
White rock ¹	N/A	15–35	15–35	15–35	15–35	15–35	15–35	15–35	15–35	N/A
LRA	96–98	96–98	96–98	96–98	96–98	96–98	72–80.5	72–80.5	72–80.5	36.5–63.5
Virgin aggregate	N/A	N/A	N/A	N/A	N/A	N/A	18–25	18–25	18–25	35–60
Flux Material	1.0–4.0	1.0–4.0	1.0–4.0	1.0–4.0	1.0–4.0	1.0–4.0	1.0–3.0	1.0–3.0	1.0–3.0	1.0–3.5

1. White rock values are given as a percentage of total LRA aggregate.

- 4.4.2. **Job-Mix Formula for LRA Mixtures.** Provide a job-mix formula (JMF) design report for a paving mixture that meets the requirements of Tables 3, 4, and 5. Identify in the report the combined aggregate gradation, the percentage of each material component used in the mixture, and results of all applicable tests. Obtain approval of the JMF before starting production. With approval, the JMF target values may be adjusted as needed within the percentage point tolerances of Table 6 without a laboratory redesign of the mixture. If the adjustments exceed the tolerances shown in Table 6, MTD may require a new mixture design. Adjustments must not exceed the master gradation for the type of mixture specified on the plans.

Table 5
Mixture Properties

Property	Test Method	Requirement
Hveem stability, Min	Tex-208-F	35 ¹
Laboratory-molded density, %	Tex-207-F	90.0 ± 2.0
Theoretical maximum specific gravity of bituminous mixtures	Tex-227-F	N/A
Bitumen content, % by weight	Tex-236-F	6.5–11.0
Water and light hydrocarbon volatiles, %, Max	Tex-212-F, Part II	6.0
Boil test, %	Tex-530-C	10 ²
Cantabro loss, %, Max	Tex-245-F	15.0

1. Cease operations if two consecutive tests fail. MTD may waive this requirement if other information indicates that the next material to be produced will meet the minimum value specified.
2. May be increased or waived when directed by MTD.

Table 6
Deviations from Current JMF Target Values

Material	Test Method	Tolerance
Individual % retained for #10 sieves and larger	Tex-200-F, Part I	±5.0
Individual % retained for sieves smaller than #10 and larger than #200		±3.0
% passing the #200 sieve		±2.0
Fluxing material. %	Determined from quantity used	±0.2

- 4.5. **Weather Conditions.** Produce LRA mixture for Item 330 when the air temperature is 40°F or higher, unless otherwise approved. Precoat aggregate for Item 302 when the air temperature is 50°F and rising, unless otherwise approved.
- 4.6. **Production Operations.** All plant facilities and materials used are subject to inspection or testing by MTD at any time during production or use. Provide safe access for Department personnel to perform inspection and sampling. Quality control is solely the responsibility of the Producer, and the Department will not perform quality control for the Producer.
- 4.6.1. **Stockpiling of LRA.** Provide a smooth and well-drained area, cleared of trash, weeds, and grass. Stockpile, handle, and load LRA in a manner that will minimize aggregate degradation and segregation. Avoid contamination and mixing of stockpiles. MTD may reject stockpiled materials that come in contact with the earth or other objectionable material.
- 4.7. **Production Acceptance.**
- 4.7.1. **Production Sampling.** Obtain LRA samples at the plant in accordance with Tex-222-F. The sampler will split each sample into two equal portions in accordance with Tex-200-F and label these portions as “Producer” and “MTD.” Deliver the samples to the appropriate party’s laboratory. Discard unused samples after acceptance of MTD test results.
- 4.7.2. **Production Testing.** The Producer and MTD must perform production tests in accordance with Tables 7 and 8. Perform production testing in accordance with Table 7 for LRA used for surface treatments. Perform production testing in accordance with Table 8 for LRA mixtures. The Producer has the option to verify MTD’s test results on split samples provided by the Producer or MTD.

Unless otherwise directed, MTD will suspend production and cease shipping of materials if the Producer fails to comply with the production testing frequency listed in Tables 7 and 8. Immediately take corrective action if any test result fails to meet the material requirements of Item 302 and this Specification. MTD may suspend production, cease shipping of materials, and require removal of any material transported to a railcar if test results from any two consecutive tests of the same property listed in Tables 7 and 8 fail to meet the material requirements.

Table 7
Production Testing Frequency for LRA Used for Surface Treatments (Item 302)

Description	Test Method	Minimum Producer Testing Frequency	Minimum MTD Testing Frequency ¹
Gradation Cumulative % retained	Tex-200-F, Part I	Combined aggregate sample ²	
		1 per 300 tons	1 per 3,000 tons
		Precoated aggregate	
		1 per 1,200 tons	1 per 10,000 tons
Deleterious Material	Tex-217-F, Part I	1 per month, per aggregate (per grade)	1 per month, per aggregate (per grade)
Decantation	Tex-406-A	1 per month, per aggregate (per grade)	1 per month, per aggregate (per grade)
White rock count	Tex-220-F	1 per 600 tons, per aggregate (per grade)	1 per 6,000 tons, per aggregate (per grade)
Flakiness index	Tex-224-F	1 per month, per aggregate (per grade)	1 per month, per aggregate (per grade)
Naturally impregnated bitumen content, % by wt. for combined aggregate	Tex-236-F	1 per 600 tons	1 per 5,000 tons
Micro-Deval abrasion	Tex-461-A	1 per week, per aggregate (per grade)	1 per month
Unit weight	Tex-404-A	1 per 20,000	1 per 20,000

1. MTD may reduce or waive the sampling and testing requirements based on a satisfactory test history.
2. Combined aggregate sample may contain LRA, white rock, and/or virgin aggregate depending on the grade/type.

Table 8
Production Testing Frequency for LRA Used in Mixtures (Item 330)

Description	Test Method	Minimum Producer Testing Frequency	Minimum MTD Testing Frequency ¹
Cumulative % retained (combined aggregate sample ²)	Tex-200-F, Part I	1 per 300 tons	1 per 3,000 tons
Laboratory-molded density	Tex-207-F	1 per week, per mix type ³	1 per week, per randomly selected mix type ⁴
Hveem stability	Tex-208-F	1 per week, per mix type ^{3, 5}	1 per week, per randomly selected mix type ⁴
Moisture content	Tex-212-F, Part II	1 per week, per mix type	1 per week, per selected mix type ⁴
Deleterious material	Tex-217-F, Part I	1 per month, per aggregate (per grade)	1 per month, per aggregate (per grade)
Decantation	Tex-406-A	1 per month, per aggregate ⁶ (per grade)	1 per month, per aggregate ⁶ (per grade)
White rock count	Tex-220-F	1 per day, per mix type	1 per week, per mix type
Flakiness index	Tex-224-F	1 per month, per aggregate (per grade)	1 per month, per aggregate (per grade)
Theoretical maximum specific (Rice) gravity	Tex-227-F	1 per week, per mix type ³	1 per week, per randomly selected mix type ⁴

Description	Test Method	Minimum Producer Testing Frequency	Minimum MTD Testing Frequency ¹
Naturally impregnated bitumen content, % by weight for LRA material passing the #10 sieve	Tex-236-F	1 per day	1 per week
Naturally impregnated bitumen content, % by weight for LRA combined aggregate	Tex-236-F	1 per 600 tons	1 per 5,000 tons
Micro-Deval abrasion	Tex-461-A	1 per week, per mix type ³	1 per month
Unit weight	Tex-404-A	1 per 20,000	1 per 20,000
Kinematic viscosity, 1,400°F, cSt	AASHTO T 201	1 per month	1 per month
Heat loss test	ASTM D 6/6M	1 per month	1 per month

1. MTD may reduce or waive the sampling and testing requirements based on a satisfactory test history.
2. Combined aggregate sample may contain LRA, white rock, and/or virgin aggregate depending on the mixture type.
3. Minimum production of 100 tons required before performing test.
4. Mix type randomly selected by MTD at the plant.
5. Deliver molds used to determine laboratory-molded density to MTD for Hveem Stability testing.
6. Decantation is performed on virgin aggregate only that is added to LRA mixtures.

5. ARCHIVED VERSIONS

Archived versions are available.