

**NAVAJO DIVISION OF TRANSPORTATION – DEPARTMENT OF ROADS
REQUEST FOR PROPOSAL
Hot Mix Asphalt (HMA-SP-III) – LITTLEWATER PROJECT**

SECTION I – OVERVIEW:

Navajo Division of Transportation (NDOT) – Department of Roads request proposals from qualified firms to provide Aggregate Base Course (ABC) preparation and pavement surfacing on the N481/N7119 project located in Littlewater, McKinley County, New Mexico. The project length is approximately 3.4 miles with an estimate for 7,000 tons of Hot Mix Asphalt (HMA-SP-III) and 1,000 tons of ABC.

DESCRIPTION OF PROJECT:

The contractor shall furnish all material, equipment, labor and related items necessary to complete the work as shown on in the project plans for HMA-SP-III. Hot Mix, Prime Coat and ABC, all work shall be complete in place. Contractor shall manufacture, deliver, place and compact all materials per New Mexico Department of Transportation Specifications, (attached) or the Standard Specifications for Construction of Roads and Bridges on Federal Highways (attached). ABC may be required for use as spot load/leveling course on existing roadway and shall be processed with moisture and density control to finish grade. All work shall be based on the project schedule and as directed by NDOT Department Manager.

SCOPE OF WORK:

1. Prepare existing base course surface to finish grades and specifications, spot load if necessary.
Note that survey data will be provided i.e. blue tops, etc. per FP-14 Section 301 Exhibit A
2. Apply Prime Coat per FP-14 Section 411- Asphalt Prime Coat Exhibit B
3. Pave Roadway Section, turn outs and other features per NMDOT specifications Section 423 Exhibit C

PROJECT REQUIREMENTS:

AGGREGATE BASE COURSE:

Prior to paving operations, ensure finish grade, consistency, compaction, etc. of ABC is in compliance with (FP-14) section 301- Untreated Aggregate Courses. Make necessary repairs in compromised areas to ensure the entire grade is within specification. This process may involve reprocessing the ABC to repair soft spots and establish grade.

PRIME COAT:

Asphalt Prime Coat shall be placed prior to paving operations per FP-14, Section 411. – Asphalt Prime Coat.

HOT MIX ASPHALT (HMA-SP-III):

HMA-SP-III shall be supplied from an approved HMA asphalt production plant. Mixing proportions, mixing temperature percent asphalt cement, etc., shall be in compliance with approved Hot Mix Design.

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The Hot Mix shall be delivered in belly dump trucks weighted on certified scales with weight ticket showing gross, net and tare weights.

Hot Mix Placement: The Contractor shall provide adequate equipment, i.e., asphalt paving machine, rollers, etc., for paving operations. Hot Mix shall be placed per thickness and width as shown on typical sections. Compaction and density shall be accomplished. The asphalt mat shall be free of cracks, segregation or other non-specified criteria and shall be smooth and durable.

All pertinent documentation shall be submitted prior to incorporation into the work i.e. Approved Hot Mix Design, Aggregate Base Course Acceptance and testing. Prime Coat Certificate of Compliance, Scale Certification and any other items related to the work.

Acceptance:

Any material or workmanship that does not meet specifications shall be removed and replaced at the contractor's expense. The Department Manager will have final authority on acceptance or rejection of the work.

PROPOSED CONTRACTOR

Contractor shall submit the following:

Documentation/evidence for processing to grade ABC, placing Prime Coat and paving of Hot Mix Asphalt (HMA-SP-III).

PROPOSAL REQUIREMENTS

NDOT requests proposal from qualified firms to provide maintenance services and selection base on the following criteria:

- 1) Specialized Construction/Program Management, administrative technical competence, as related to this RFP.
- 2) Experience in and quality services rendered relative to similar projects on the Navajo Nation, other Indian Reservations and rural communities,
- 3) Provide evidence of management capacity and scheduling, expertise, internal quality control and organization structure,
- 4) Proof of Surety Bond, and all relevant bonding/certifications
- 5) Provide three (3) references of services that your firm has completed.

The Request for Proposals (RFP) process will identify and select a qualified firm based upon evaluation criteria and cost.

All work accomplished under this contract shall be in accordance with, but not limited to the following: Navajo Nation Regulations and Requirements; Tribal Transportation Programs; Federal Highway

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Administration (FHWA) standards in 23 CFR 170 subpart G: and other applicable State Manuals, Standard Guidelines and procedures.

A complete proposal set will contain one (1) original plus six (6) and identical copies with a separate sealed proposed estimate. This shall be submitted on or before the closing date and time for receipt or proposal. Firms may submit only one (1) complete set of their proposal.

ORIGINAL Proposals must be submitted in a sealed envelope clearly marked:

“DO NOT OPEN – RFP # 18-03-1788 LE – Hot Mix Asphalt (HMA-SP-III) – Littlewater Project.” The name of the firm submitting the Proposal shall be written legibly and shown on the outside of the sealed envelope. Please include the firm’s address.

The Proposal Documents may be obtained from the Navajo Transportation Complex, #16 Old Coal Mine Road, Mentmore, NM starting at 12:00 March 26, 2018 to March 31, 2018, during regular business hours (8:00AM – 5:00PM). The Navajo DOT Complex is located north of NM State Highway 264 and 1.5 miles east of the New Mexico and Arizona State Line. **The complete Proposals set and separate Sealed Proposal Costs are due at 3:00 PM, April 02, 2018** at the Department of Roads, Navajo DOT, Navajo Transportation Complex.

“Proposals received after the time and date specified will not be considered. These will be returned to the firm un-rated and firms responding in such fashion shall be considered non-responsive. Postage must be paid in full by the proposer. NDOT will not accept partial paid mail proposal, but will return to sender”.

Contract award will be subject to availability of funds. The NDOT reserves the right to determine if a proposal meets the terms of the RFP requirements, to accept, or reject any and all proposals received, to negotiate with the firm regarding the terms of their proposals or parts thereof, and to award a contract in the best interest of the Navajo Nation.

III. EVALUATION

NDOT will evaluate and rank the proposal as outlined in the criteria and a contract shall be awarded to the firm, whose offer is most advantageous to the Navajo Nation and meets the programs requirements for the projects scope, time expectation and cost.

I. CRITERIA

A maximum total of 100 points are possible in scoring each proposal for the short-list evaluation. A brief explanation of each evaluation category is listed below. Information in one category any overlap information other categories as addressed scope of work. Offeror is encouraged to fully address each category completely, as points are assigned for responses to each separate category. The evaluation criteria to be used for the purposes for Short-listing by the Selection Committee for the proposal and the corresponding points values for each criterion are as follows:

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Rating System on Evaluation Criteria

- A. Each proposal will be evaluated and rated as follows. Descriptions of the components are provided – Proposal Content and Evaluation Criteria.

- B. The qualifications of the PROPOSER to perform the services required, as demonstrated by the following information (25 points possible).
 - 1. Proof of Financial responsibilities (5 points)
 - 2. Provide Experience Record (5 points)
 - 3. Operations and Management personnel (5 points)
 - 4. Proof of Surety Bond (5 points)
 - 5. Navajo Nation Tax Commission Certification (5 points)

- C. Construction Requirements (30 points possible)
 - 1. Construction practice i.e. photos of equipment, examples of completed work. (6 points)
 - 2. Material specification i.e. Approved mix design, ABC acceptance. (6 Points)
 - 3. Details of ABC placement, compaction and preparation, Prime Coat Application (6 pts).
 - 4. Details of paving operations (6 points)
 - 5. Acknowledgement of replacing material at contractor's expense, if rejected. (6 points)

- D. Historical performance with similar services (25 Points possible)
 - 1. Past performance with similar services (5 points)
 - 2. Methods of control and tracking (5 points)
 - 3. Ability to meet schedule (5 points)
 - 4. Benefit to the Navajo Communities (5 points)
 - 5. Provide three (3) references (5 points)

- E. Evidence that the firm meet the requirement of the Navajo Business Opportunity Act and Proposal Fee in separate sealed envelope. (20 points possible)
 - 1. Meet the requirements of NBO Act (10 points)
 - 2. *Proposal Fee in a separate sealed envelope (10 points)*

RFP Inquiries

All inquiries or request regarding the Proposal Document must be submitted in writing, by mail, fax or email to the Project Contact listed below. Written questions as to the intend or clarity of this RFP can be submitted to the Project Contact until close of business, 5:00 PM (Daylight Saving time) on March 28, 2018. Written responses to written questions and any RFP amendments will be distributed in writing and faxed or emailed to all parties who obtained a RFP documents from the NDOT office. No further inquires, in any form, will be entertained after March 28, 2018.

Project Contact:

Contact Wayne Williams, Civil Engineer, Navajo Division of Transportation, and Telephone: (505) 371-8360, Fax: (505) 371-8399, and Email: wwilliams@navajodot.org , Joe Peterman, Department Manager, Department of Roads, and Telephone: (505) 371-8392, Fax: (505) 371-8399, and Email: jpeterman@navajodot.org.

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Submission of Proposal

All Proposals must be submitted to the following address on April 02, 2018, no later than 3:00 PM local Window Rock, (Daylight Saving Time). Proposals received after this deadline will not be accepted. The date and time will be recorded on each RFP. RFP must be addressed and delivered to Joe Peterman, Roads Department Manager, Navajo Division of Transportation. NDOT is located North of NM State Highway 264 and 1.5 miles east of the New Mexico and Arizona State Line. Or, it may be mailed to P.O. Box 4620, Window Rock, Arizona, 86515. Please allow sufficient time for mail delivery to ensure receipt by the due date and time. On the outside of each Proposal must be submitted in a sealed envelope clearly marked: **“DO NOT OPEN – RFP # 18-03-1788 LE – Hot Mix Asphalt (HMA-SP-III) – Littlewater, Project”**. The name of the firm submitting the proposal shall be written legibly and shown on the outside of the sealed envelope. Please include the firm’s address.

“Proposals received after the time and date specified will not be considered. These will be returned to the firm un-rated and firms responding in such fashion shall be considered non-responsive. Postage must be paid in full by the proposer. NDOT will not accept partial paid mail proposal, but will return to sender”.

Proof of Contracting Licensing and Professional Registration

The Offeror must provide and show evidence that the key personnel assigned to the Project hold current contracting license and/or professional registration issued by a State agency.

Applicable Laws

The laws of the Navajo Nation shall govern this procurement and any agreement that may result from this procurement.

Responsive Format and Organization

This section describes the format and organization of the firm’s responses. Failure to conform to these guidelines may result in the disqualification of the RFP.

NUMBER OF RESPONSES: The Firm may submit only one (1) RFP.

NUMBER OF COPIES: The Firm shall deliver an original plus six (6) identical copies seven (7) total of their RFP, to the location specified on or before the closing date and time for receipt of proposals. ORIGINALS shall be clearly marked as such. The selection Committee will not collate, merge, or otherwise manipulate the firm’s RFP.

RFP Format

All proposals must be typewritten on standard 8 ½ x 11 papers. Foldout sheets, up to a maximum (2) of 11” x 17” sheets will be counted as two (2) pages and shall be labeled as such. Length of the RFP is limited to maximum of thirty (30) pages (printed sheet faces) of text and/or graphic material.

Pages that have photos, charts and graphs will be counted towards the maximum number of pages.

The following documents excluded from five (5) pages maximum count shall include and shall be limited:

RFP ORGANIZATION

The RFP must be organized and indexed in the following format and must contained, as minimum, all listed items in the sequence indicated.

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a. Binder #1 (Mandatory Original to include Request for Proposal Number One:

1. Front cover (Blank on back side)
2. Letter of Submittal (one page maximum)
3. Table on Contents (one page maximum)
4. Divider pages (blank except for title information)
5. Proposal Summary (optional)*
6. Professional License (s)
7. Certificate(s) of Insurance
8. Current W-9
9. Back cover (blank on one side)
- 10. Proposal Fee (Cost) must be in a separate sealed envelope**

Proposals deemed non-conforming by the Selection Committee in regard to format may be considered non-responsive and may result in disqualification of the proposal. Firms shall contact the Department of Roads Manager to clarify any questions concerning format prior to submission.

PROPOSAL GUIDELINES:

The following guidelines shall be adhered to by offerors for consideration in the selection process of firms or individuals to perform professional services for the project described. Proposals, which do not include ALL of the listed information will be considered incomplete and non-responsive and will not be considered by the selection committee.

MANDATORY SUBMITTAL REQUIREMENTS:

The firm shall submit one (1) original and six (6) identical copies of their Proposal for the evaluation selection committee members. Appearance of Request of Proposal is important and professionalism in proposal presentation should not be neglected. The Proposal standards are as follows:

- F. Submittal Letter – Proposals must be accompanied by a submittal letter. The submittal letter must:**
- a. Identify the submitting business. State the name and address of the organization’s firm or office. Indicate organizational structure (individual, partnership or public, profit or non-profit);
 - b. Identify the name and title of the person(s) authorized by the company to contractually obligate the business for the purpose of this Request for Proposal;
 - c. Identify the names, titles and telephone numbers of persons to be contacted for clarification questions regarding this RFP;
 - d. Be executed (signed) by a person authorized to contractually obligate the firm;
 - e. Acknowledge receipts of any and all amendments to this Request For RFP;
 - f. Project Listing Form – Include with the submittal letter the complete Project Listing Form. All Projects awarded to the proposing firm by the Navajo Nation that are less than 75% complete shall be included on the form. If there are any questions as to the appropriate content of the form, contact the Civil Engineer or Department of Roads Manager for clarification.

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- g. Content will be checked and verified when the Proposals are submitted. Information determined to be inaccurate by the Civil Engineer will be confirmed with the firm and corrected as necessary, prior to scoring by the Selection Committee.

Project Contact: Contact Wayne Williams, Civil Engineer, Navajo Division of Transportation, and Telephone: (505) 371-8360, Fax: (505) 371-8399, Joe Peterman, Department Manager, Department of Roads, and Telephone: (505) 371-8392, Fax: (505) 371-8399, and Email: jpeterman@navajodot.org.

End of Request of Proposal

EXHIBIT A

Section 301. — UNTREATED AGGREGATE COURSES

Description

301.01 This work consists of constructing one or more courses of aggregate on a prepared surface.

Subbase and base aggregate grading is designated according to Table 703-2. Surface course aggregate grading is designated according to Table 703-3.

Material

301.02 Conform to the following Subsections:

Subbase, base, and surface course aggregate	703.05
Water	725.01(c)

Construction Requirements

301.03 General. Prepare the surface on which the aggregate course is placed according to Section 204 or 303 as applicable.

After a representative quantity of aggregate is produced, submit proposed target values for the appropriate sieve sizes along with a representative 300-pound (150-kilogram) sample at least 14 days before incorporating the aggregate into the work.

Set target values within the gradation ranges shown in Table 703-2 or 703-3 for the required grading.

301.04 Mixing and Spreading. Determine the optimum moisture content according to AASHTO T 180, Method D. Mix the aggregate and adjust the moisture content to obtain a uniform mixture with a moisture content within 2 percent of the optimum moisture content. Spread and shape the mixture on the prepared surface in a uniform layer.

Do not place the mixture in a layer exceeding 6 inches (150 millimeters) in compacted thickness. When more than one layer is necessary, compact each layer according to Subsection 301.05 before placing the next layer. Route hauling equipment uniformly over the full width of the surface to minimize rutting or uneven compaction.

301.05 Compacting. Determine the maximum density of the mixture according to AASHTO T 180, Method D.

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Compact each layer full width. Roll from the sides to the center, parallel to the centerline of the road. Along curbs, headers, walls, and places not accessible to the roller, compact the material with approved tampers or compactors.

Compact each layer to at least 95.0 percent of maximum density. Determine the in-place density and moisture content according to AASHTO T 310 or other approved test procedures.

301.06 Surface Tolerance. If grade finishing stakes are required, finish the surface to within ± 0.05 feet (± 10 millimeters) from staked line and grade elevation.

If grade finishing stakes are not required, shape the surface to the required template and check the surface with a 10-foot (3-meter) straightedge. Defective areas are surface deviations in excess of $\frac{1}{2}$ inch (13 millimeters) in 10 feet (3 meters) between two contacts of the straightedge with the surface.

Correct defective areas by loosening the material, adding or removing material, reshaping, and compacting.

301.07 Maintenance. Maintain the aggregate course to the correct line, grade, and cross-section by blading, watering, rolling, or combination thereof until placement of the next course. Correct defects according to Subsection 301.06.

301.08 Acceptance. See Table 301-1 for sampling, testing, and acceptance requirements; including the category for quality characteristics.

Aggregate gradation and surface course plasticity index will be evaluated under Subsection 106.05. Other aggregate quality properties will be evaluated under Subsections 106.02 and 106.04.

(a) Aggregate gradation. The upper and lower specification limits are equal to the calculated mean of all test results plus or minus the allowable deviations shown in Tables 703-2 and 703-3, except as follows:

(1) If the calculated mean value for a tested sieve exceeds the maximum gradation value shown in Table 703-2 or 703-3, then the upper specification is equal to the maximum gradation value plus the allowable deviation, and the lower specification is equal to the maximum gradation value minus the allowable deviation.

(2) If the calculated mean value for a tested sieve is less than the minimum gradation value shown in Table 703-2 or 703-3, then the upper specification is equal to the minimum gradation value plus the allowable deviation and the lower specification is equal to the minimum gradation value minus the allowable deviation.

(b) Plasticity index. The upper and lower specification limits for surface courses are shown in Subsection 703.05(c)(3).

Construction of untreated aggregate courses will be evaluated under Subsections 106.02 and 106.04.

Measurement

301.09 Measure the Section 301 pay items listed in the bid schedule according to Subsection 109.02 and the following as applicable:

When measuring aggregate by the cubic yard (cubic meter), measure in place.

When measuring aggregate by the square yard (square meter), measure the length horizontally along the centerline of the roadway. Measure the width horizontally to include the top of aggregate width, including designed widenings.

Payment

301.10 The accepted quantities will be paid at the contract price per unit of measurement adjusted according to Subsection 106.05 for the Section 301 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Reference:

[ot.state.nm.us/content/dam/nmdot/Plans_Specs_Estimates/2014_Specs_For_Highway_And_Bridge_Construction.pdf](http://dot.state.nm.us/content/dam/nmdot/Plans_Specs_Estimates/2014_Specs_For_Highway_And_Bridge_Construction.pdf)

EXHIBIT B

Section 411. — ASPHALT PRIME COAT

Description

411.01 This work consists of applying a emulsified asphalt prime coat.

Prime coat asphalt grade is designated according to AASHTO M 140 or AASHTO M 208 for emulsified asphalts or Subsection 702.02(c) for penetrating emulsified asphalt.

Asphalt application is designated in Subsection 411.06. If no application method is designated, use Method 1.

Material

411.02 Conform to the following Subsections:

Blotter	703.12
Crushed aggregate	703.06
Emulsified Asphalt	702.02
Penetrating emulsified asphalt for prime coat	702.02(c)
Water	725.01(c)

Construction Requirements

411.03 Equipment. Use equipment conforming to Subsection 407.05.

411.04 Surface Preparation. Prepare the surface to be primed according to Subsection 301.06. When required, use sweeping or other approved method to remove loose dust and fine material and lightly spray the surface with water.

411.05 Weather Limitations. Apply prime coat only when the following apply:

- (a) Surface is dry or slightly damp;
- (b) Ambient air temperature is above 50 °F (10 °C) and rising;
- (c) Surface temperature in the shade is above 50 °F (10 °C) and rising; and
- (d) Weather is not foggy or rainy.

411.06 Asphalt Application. Apply emulsified asphalt according to Subsection 407.09.

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(a) Method 1 (topical). Apply undiluted emulsified asphalt formulated as a penetrating prime coat at a rate of 0.10 to 0.30 gallons per square yard (0.45 to 1.35 liters per square meter). Exact application rate will be approved by the CO.

(b) Method 2 (inverted prime). Apply undiluted emulsified asphalt at a rate of 0.20 to 0.30 gallons per square yard (0.90 to 1.35 liters per square meter). Immediately apply crushed aggregate at a uniform rate of 20 to 25 pounds per square yard (10.9 to 13.6 kilograms per square meter) using an aggregate spreader. Exact application rate will be approved by the CO.

Leave a 6-inch (150-millimeter) wide uncovered strip of asphalt to permit an overlap of asphalt material during part-width construction.

Do not allow the wheels of the aggregate spreader to come in contact with the asphalt. Immediately seat the aggregate using a roller. Operate rollers at a maximum speed of 5 miles (8 kilometers) per hour.

(c) Method 3 (processed). Scarify the surface to a depth of 2 to 3 inches (50 to 75 millimeters) before applying the asphalt as a prime coat. Apply emulsified asphalt at an undiluted rate of 0.25 gallons per square yard per inch (1.10 liters per square meter per 25 millimeters) of scarification depth. Immediately process, re-spread, and compact the material. When required, dilute a slow-setting emulsified asphalt by adding water. Other methods of incorporating asphalt into the aggregate may be used when approved by the CO.

411.07 Curing. Cure surfaces primed with emulsified asphalt for at least 24 hours before covering with the next course.

411.08 Maintenance. Maintain the primed surface by keeping it free of corrugations, potholing, and loose material until the next course is placed. Remove dirt or other deleterious material and repair damaged areas.

Spread additional blotter to cover unabsorbed asphalt. Remove excess blotter after the asphalt is absorbed.

411.09 Acceptance. Emulsified asphalt will be evaluated under Subsections 106.02 and 106.03.

Crushed aggregate and blotter will be evaluated under Subsection 106.03.

Construction of the prime coat will be evaluated under Subsections 106.02 and 106.04.

Measurement

411.10 Measure the Section 411 pay items listed in the bid schedule according to Subsection 109.02 and the following as applicable:

When measuring prime coat by the square yard (square meter), measure the length along the centerline of the roadway. Include treated widen areas when measuring the width.

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When measuring prime coat by the cubic yard (cubic meter) volume, measure in the hauling vehicle. Do not measure water added for dilution. Indicate a breakdown of total emulsion and water added on the load invoices supplied to the CO.

Payment

411.11 The accepted quantities will be paid at the contract price per unit of measurement for the Section 411 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Reference:

ot.state.nm.us/content/dam/nmdot/Plans_Specs_Estimates/2014_Specs_For_Highway_And_Bridge_Construction.pdf

EXHIBIT C

SECTION 423: HOT MIX ASPHALT — SUPERPAVE (QLA and Non-QLA)

423.1 DESCRIPTION

This Work consists of constructing one (1) or more courses of hot-mix asphalt (HMA) on a prepared base.

423.2 MATERIALS

423.2.1 General

HMA is a mixture of asphalt binder, aggregate, blending sand, mineral filler, and hydrated lime or anhydrite based material. Unless otherwise prohibited in the Contract, the Department will allow Recycled Asphalt Pavement (RAP) in HMA mixtures as long as the resulting mixture conforms to all specification requirements.

Size, uniformly grade, and combine aggregate fractions in accordance with the Contract. Test Materials in accordance with applicable AASHTO methods, as modified by the Department (if applicable) or other test procedures as directed by the Department. The State Materials Bureau will decide all questions pertaining to the interpretation of test procedures.

423.2.2 Aggregate

Ensure the aggregate gradation of the HMA mixture meets the requirements of Table 423.2.2.1:1, "HMA Aggregate Gradation Control Points." The Project Manager may require, at no additional cost to the Department, wet preparation, per AASHTO T 146, Method A, if the Project Manager determines there are Deleterious Materials present in the aggregate stockpiles before aggregate gradation testing. The Contract will specify the type of HMA the Contractor is to use. The Department will allow the Contractor to combine Materials from two (2) or more sources to produce aggregate only when each individual aggregate source meets all applicable quality requirements.

423.2.2.1 Gradation and Quality Requirements

Table 423.2.2.1:1

HMA Aggregate Gradation Control Points						
% passing per HMA type						
Sieve size	SP-II		SP-III		SP-IV	
	Min	Max	Min	Max	Min	Max
two (2) inch	—	—	—	—	—	—
1 1/2 inch 100	100	—	—	—	—	—
One (1) inch	90	100	100	—	—	—
3/4 inch	—	90	90	100	100	—
1/2 inch	—	—	—	90	90	100
3/8 inch	—	—	—	—	—	90
No. 8	19	45	23	49	28	58
No. 200	1.0	7.0	2.0	8.0	2.0	10.0

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423.2.2.1.1 Aggregate Quality

For each Material source, ensure the HMA coarse aggregate has an AI of 25 or less when calculated in accordance with Section 901, "QUALITY CONTROL/QUALITY ASSURANCE (QC/QA)." Regulate the crushing of aggregate stockpiles so that the minimum Fractured Faces content of the plus No. 4 Material complies with the requirements of Table 423.2.2.1.2:1, "Fractured Faces, Sand Equivalent, and Fine Aggregate Angularity," and evaluation by NMDOT. Method FF-1, "Fractured Face Determination for Coarse Aggregate." Ensure the plus 3/8 inch material contains no more than 20% flat, elongated particles with a dimensional ratio of 3:1 or greater as determined by ASTM D 4791 (TTCP Modified). Ensure the combined material, excluding RAP, passing the No. 40 sieve is non-plastic. Ensure that before the addition of hydrated lime or anhydrite based material, the minimum sand equivalent value and the minimum fine aggregate angularity value of the combined aggregate, excluding RAP, complies with the requirements of Table 423.2.2.1.2:1, "Fractured Faces, Sand Equivalent, and Fine Aggregate Angularity." Determine the sand equivalent value in accordance with AASHTO T 176, Alternate Method No. 1 and the fine aggregate angularity value in accordance with AASHTO T 304, Method A.

423.2.2.1.2 Fractured Faces

The Department will consider a face to be fractured when at least one-half of the projected particle area exhibits a rough, angular, or broken texture with well-defined edges.

Table 423.2.2.1.2:1

Minimum Fractured Faces, Sand Equivalent, and Fine Aggregate Angularity for Virgin Aggregates

Design Traffic, ESAL sa x 106	Fractured Faces b	Sand Equivalent (%)	Fine Aggregate Angularity
< 3.0	75.0 / —	45.0	40.0
> 3.0 – < 10.0	85.0 / 80.0	45.0	45.0
> 10.0 – < 30.0	95.0 / 90.0	45.0	45.0

ESALs are based on a 20-year design life for all scenarios.

Under "Fractured Faces", 85.0 / 80.0 denotes that 85.0% of the coarse aggregate has at least 1 Fractured Face and 80.0% has at least two (2) Fractured Faces.

Ensure RAP provided from sources outside the Project has at least 75% Fractured Faces (one (1) Fractured Face); however, Sand Equivalent and Fine Aggregate Angularity do not apply.

423.2.2.2 Production

When producing aggregates for HMA, remove natural fines by screening and stockpiling separately. Use a No. 4 screen, minimum, or a larger screen if needed to properly control the crushing and screening operation. Crush the aggregate retained on the scalping screen and separate the crushed Material into at least two (2) stockpiles of fine and coarse aggregates. Regulate crushing operations to produce Material within the specified gradation band.

423.2.2.3 Stockpiling

The following requirements apply to stockpiles:

1. Place stockpiles upon prepared sites;
2. Make stockpiles neat and regular to prevent segregation;
3. Provide enough storage space for each size of aggregate;

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4. Separate the aggregate stockpiles far enough apart to prevent mixing, or with walls or partitions;
5. Prevent contamination (store stockpiles away from vehicular and Equipment traffic);
6. Keep the storage yard neat and orderly and keep the stockpiles accessible for sampling; and
7. Keep the aggregate sizes separated until delivered to the cold feed system that feeds the drier.

423.2.2.4 Combining

When combining crushed Materials from different stockpiles, including RAP (if in the mixture); ensure the product is in accordance with the mix design gradation requirements. Use controlled feeders from each stockpile to combine crushed Material.

423.2.3 Asphalt Binder

The Contract will specify the type and grade of asphalt binder. Provide asphalt binders in accordance with Section 402, "Asphalt Materials, Hydrated Lime, and Anhydrite Based Material." Do not change the asphalt source after approval of the mix design without written approval of the State Materials Bureau.

423.2.4 Hydrated Lime or Anhydrite Based Material

Provide hydrated lime or anhydrite based material in accordance with Section 402, "Asphalt Materials, Hydrated Lime, and Anhydrite Based Material."

423.2.5 Blending Sand

Blending sand consists of the following:

1. Natural fines from the scalping process
2. Concrete sand; 3. Sandy Material; or
3. A combination of these, graded to the mix design requirements.

Determine the need for and percentage (a maximum of 20.0%) of blending sand using mix design tests on samples taken from stockpiles during crushing operations and submitted to an approved testing Laboratory.

423.2.6 Mineral Filler

Provide mineral filler in accordance with AASHTO M 17 and approved by the State Materials Bureau. The Department will not allow fly ash as mineral filler for HMA

423.2.7 Reclaimed Asphalt Pavement

Unless otherwise specified in the Contract, the Contractor may use RAP removed under the Contract consisting of salvaged, milled, pulverized, broken, or crushed asphalt pavement. The Contractor may use RAP produced from outside sources provided evidence of ownership is supplied and the following is met: After the Contractor obtains sufficient quantities of RAP aggregate samples in accordance with AASHTO T 308, the Department will accept RAP for which each fraction of coarse aggregate has a percent wear of 40.0 or less, at 500 revolutions, when tested in accordance with AASHTO T 96. Provide plus No. 4 RAP Material with a minimum of 75% Fractured Faces content (one (1) face).

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The Contractor may use a maximum of 15% RAP (by weight) in the production of HMA mixtures without changing the asphalt binder. For quantities greater than 15% to 25% RAP, either lower the asphalt binder's high and low temperature grades by one (1) grade (e.g. lower a PG 76-22 to a PG 70-28) or extract, recover, and combine the RAP's asphalt binder with a virgin asphalt binder per AASHTO M 323, Appendix A, ensuring the resultant binder meets the entire AASHTO M 320 required Project PG asphalt binder properties indicated on the approved mix design. For quantities greater than 25% to 35% RAP, extract, recover, and combine the RAP's asphalt binder with a virgin asphalt binder per AASHTO M 323, Appendix A. Ensure the resultant binder meets the entire AASHTO M 320 required Project PG asphalt binder properties indicated on the approved mix design. The Department will not allow the Contractor to use more than 35% RAP in the production of HMA mixtures. For Projects of entirely new construction, limit the RAP to 15% in the top mat or extract, recover and combine the RAP's asphalt binder with a virgin asphalt binder per AASHTO M323, Appendix A. Ensure the resultant binder meets the entire AASHTO M320 required Project PG asphalt binder properties indicated on the approved mix design.

Process RAP so that 100% passes a 1-1/2-inch sieve. For HMA mixtures containing greater than 15% RAP, maintain adequate stockpile management (i.e. sufficient quantities and shaping of the stockpiles) and fractionation (divide the RAP into a minimum of two (2) stockpiles), so they are uniform throughout the stockpiles. Address in the Quality Control Plan how RAP will be controlled, such as which screen will be used to split into two (2) stockpiles, or by what method the RAP will be controlled to keep the resultant mix within acceptable limits. Account for the weight of the binder in the RAP when batching aggregates. Provide RAP that is free of Deleterious Materials. If the Contractor decides to use RAP in the production of HMA mixtures, the Department will make no additional payment for the asphalt binder in the RAP or asphalt binder due to asphalt binder grade adjustment. As RAP is produced and prepared for inclusion in the HMA, perform Process Control testing in accordance with Section 901, "Quality Control/Quality Assurance," Table 901.7:3, Minimum Process Control Guidelines for Aggregates and Base Course.

If problems with HMA consistency or compliance with Project Specifications occur, additional efforts taken to achieve acceptable levels of consistency and compliance with Contract Specifications, at the Contractor's discretion (at no additional cost to the Department), include, but are not limited to:

- Reduce the top size of the RAP from 1-1/2" to 1";
- Fractionate the aggregates on a second screen, such as the 3/8" or 1/4" Screen so that the RAP is maintained in three (3) stockpiles, one being Rap larger than 1-1/2" to 2", Coarse RAP and the third being Fine RAP;
- Ensure that the RAP used in the HMA mix design is representative of the RAP available on the Project;
- Cover the RAP pile(s) so that ambient moisture is not absorbed; and
- Process and maintain the stockpiles so that the RAP material is equally and uniformly distributed throughout the entire stockpile(s) and is withdrawn such that uniform, non-segregated RAP is delivered to the hoppers.

423.2.8 Mix Design

Provide a mix design developed by a Department-approved testing Laboratory, reviewed and signed by a professional Engineer licensed by the New Mexico Board of Registration for Professional Engineers and Land Surveyors. A list of approved private testing laboratories is available from the State Materials Bureau. Develop the mix design at no additional cost to the Department. The Contractor may

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develop the mix design at any time prior to the Project PrePaving Conference. Submit at least five (5) independent aggregate gradation test results from each stockpile to the Project Manager.

Provide the Department with a copy of the request to the testing Laboratory to develop a mix design, along with supporting documents in accordance with AASHTO R 35, to the Project Manager and the State Asphalt Engineer. Include the proposed aggregate combination and copies of all stockpile test results. Summarize the mix design results from the Department approved testing Laboratory in a format approved by the State Materials Bureau and submit them to the Project Manager and State Asphalt Engineer for review and concurrence by the State Asphalt Engineer. Include the results and design worksheets of testing calculations in accordance with AASHTO R 35, for the mix components as well as the mixture itself and in accordance with State Materials Bureau procedures. Department concurrence of a mix design will not relieve the Contractor of full responsibility for producing an acceptable mixture. The mix design may require adjustment in accordance with Section 423.2.8.1, "Mix Design Adjustment."

Create the JMF gradation in accordance with Table 423.2.2.1:1, "HMA Aggregate Gradation Control Points." The Department will require at least one percent (1.0%) hydrated lime or anhydrite based material in all mix designs. Include the hydrated lime or anhydrite based material in the gradation for developing the mix design. The mix design shall establish a single percentage of the aggregate passing each sieve size and a single percentage of asphalt binder the Contractor is to add to the aggregate. Develop the mix design using the Section 423: Hot Mix Asphalt – Superpave (QLA & Non-QLA) Page 191 Strategic Highway Research Program (SHRP) gyratory compactor in accordance with AASHTO R 35. AASHTO TP 77 may be used in lieu of AASHTO T 84/T 85. The mix design shall be in accordance with Table 423.2.8:1, "HMA Superpave Design Requirements for Aggregates with Less Than three percent (3.0%) Absorption," or Table 423.2.8:2, "HMA Superpave Design Requirements for Aggregates with three percent (3.0%) or Greater Absorption."

Test the HMA with at least one percent (1.0%) hydrated lime or anhydrite based material in accordance with AASHTO T 283, as modified below:

- Compact all test specimens in accordance with AASHTO T 312 to an air content of seven percent (7%) +/- 0.5%;
- On the AASHTO T283 Section 11.3 scale of 0-5, with 5 exhibiting the most damage from moisture, visually estimate the amount of damage caused by moisture on the interior surfaces of each broken prism.
- Use a minimum of one percent (1%) hydrated lime or anhydrite based material and ensure the design amount results in a tensile stress ratio of at least 85%, and that no visual rating is greater than one (1), as determined by AASHTO T283 Section 11.3. Provide a mixture that meets all applicable criteria. If tests indicate the need for additives or modifiers not specified in the Contract or a change in source of binder to satisfy mix design requirements, perform the

Table 423.2.8:1

HMA Superpave Design Requirements for Aggregates with Less Than 3.0% Absorption

20-year design ESALs

N initial N design

N max

Percent Voids in the Mineral Aggregate (VMA) per nominal maximum aggregate size Voids Filled with Asphalt (VFA) Range, %

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Dust to Binder Ratio Range (SP-II)									
One (1) inch (SP-III)									
3/4 inch (SP-IV)									
1/2 inch									
<0.3	<91.5							72.0-80.0	0.6
				2.5	13.5	14.5			to
									1.4
0.3-		96.0	<98.0	-	-	-		68.0-78.0	
≥ 3.0	<89.0							08.0-75.0	

- a. In Millions
- b. Design Air Void Content of four percent (4%)
- c. For One (1) inch nominal maximum size mixtures, the specified lower limit of the VFA shall be 70% for the design traffic level <0.3 million ESALs.

Table 423.2.8:2

HMA Superpave Design Requirements for Aggregates with 3.0% or Greater Absorption

20-year design ESALs									
N initial N design (b)									
N max									
Percent Voids in the Mineral Aggregate (VMA) per nominal maximum aggregate size									
Voids Filled with Asphalt (VFA) Range, % (c)									
<u>Dust to Binder Ratio Range (SP-II) One(1) inch (SP-III) 3/4 inch (SP-IV) 1/2 inch < 98.0</u>									
<0.3	<91.5							70.0-	
								80.	
				12.0	13.0				0.6
0.3-		96.5	<98.0	-	-		14.0-	65.0	to
<3.0	<90.5			14.0	15.0		16.0	78.	1.4
								65.0-	
≥ 3.0	<89.0							78.0	

- a In Millions
- b Design Air Void Content of 3.5%
- c For one (1) inch nominal maximum size mixtures, the specified lower limit of the VFA will be 70% for the design traffic level <3.0 million ESALs.

When Department Reviewed Commercial Mix Designs are used on the Project, submit a copy of proposed commercial mix design to the State Materials Bureau with Project information to verify the proposed commercial mix design is appropriate to use and meets all the requirements for the specific Project. If the proposed commercial mix design meets all the requirements for the specific Project; the State Materials Bureau may re-issue the proposed commercial mix design for that specific Project. The State Materials Bureau may allow the Contractor to use a mix design for one (1) year from the date of review by the State Materials Bureau. The Contractor may use or re-submit the design before the

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expiration of the one (1) year time frame. Do not use a Mix Design beyond one (1) year after the State Materials Bureau's review date. Submit acceptable evidence to the State Materials Bureau verifying that the component Materials have not changed. Submit a new mix design if changing the source of Materials. Obtain concurrence from the State Materials Bureau before using the new Materials.

423.2.9 Job Mix Formula

The Job Mix Formula (JMF) must be in accordance with all aggregate gradation requirements and result in a mix that meets all specified mix design requirements. The Department will refer to the result of the Laboratory mix design developed in accordance with Section 423.2.8, "Mix Design," as JMF1. Prepare the aggregate gradation of the calibration samples for analysis per AASHTO T 308. Individually calibrate each oven used to perform AASHTO T 308 in accordance with the State Materials Bureau's, Ignition Oven Calibration Factors procedure including a set for the Referee Lab. Provide a minimum of five (5) sets of calibration samples. Do not combine the elements of the calibration samples prepared for the Referee Lab, and provide them, with the Project Number, Contractor and Project Manager clearly identified to the Project Manager who will forward them to the State Asphalt Engineer. All Quality Control, Quality Assurance and Independent Assurance ovens must be calibrated by this procedure prior to start of production of a JMF. New calibration samples may be required for new JMF's, as determined by the District Lab Supervisor or the State Asphalt Engineer. The Project Manager will suspend paving operations until calibration of the ovens has been completed. No additional time or compensation will be granted for completion of this requirement.

423.2.9.1 Job Mix Formula Adjustment.

The Contractor may request a modification to the JMF based on field testing of Material produced through the plant. It is expected that minor adjustments will be necessary and the Project Manager (with the concurrence of the Department's District Laboratory Supervisor) may approve a new JMF if the adjustment results in a new TV that is within the tolerance from the design TV. (Example: If design TV for No. 4 sieve is 30%, then a new TV may be approved in the field from 23% - 37%). Test results and calculations that verify a proposed JMF adjustment complies with the Specifications will be required prior to being reviewed by the Project Manager and concurred by the State Materials Bureau. Review and concurrence of a JMF adjustment can only be made after:

- The Quality Control Plan (including checks on specific gravity) has been submitted and concurred by the Project Manager and the District Lab Supervisor for use on the Project;
- Confirmation by the Project Manager that the Quality Control Plan is being followed;
- Concurrence of the proposed changes from Project Manager and District Lab Supervisor,
- Submittal by the Testing Laboratory responsible for the original mix design to the original mix design to the Project Manager with a copy to the State Asphalt Engineer.

If the JMF is adjusted after the Shakedown Period, terminate the previous lot when the adjusted JMF has been reviewed and concurred with by the Project Manager, Assistant District Engineer for Construction and the State Materials Bureau. Terminated lot will be added to the previous lot for evaluation by QLA. Begin a new lot for the QLA with the adjusted JMF. During the Shakedown Period, make JMF adjustments in accordance with Section 423.3.5.7, Test Strip and Shakedown Period.

423.3 CONSTRUCTION REQUIREMENTS

423.3.1 General

Provide sufficient storage space for each size of aggregate and RAP. Keep the different sizes separate until delivery to the cold feed system feeding the drier. While storing and moving the coarse

and fine aggregate, ensure that segregation, degradation, or combination of Materials of different grades does not occur. Re-screen or waste segregated or degraded Material. Provide separate storage and bin feeder for mineral filler if the Contract requires mineral filler. Stockpile aggregates and RAP that contain gravitational water and allow them to drain before mixing. After introducing the required amounts of aggregate, RAP (if used), and asphalt binder into the mixer, mix them until the aggregate particles are completely and uniformly coated with asphalt binder. If the Project Manager determines that uncoated aggregate exists, take corrective action. Ensure that the moisture content of the HMA at discharge from the mixer does not exceed 0.5%.

423.3.2 Mix Temperature Requirements

Do not allow the temperature of the HMA discharged from the mixer into the transport vehicle to be greater or less than the target mixing temperature specified in the mix design by more than ten percent (10%) F, not to exceed 350° F, unless written concurrence by the oil Supplier and design lab are provided to the Project Manager. HMA delivered to the Project with mix temperatures outside the acceptable range shall, at the sole discretion of the Project Manager, be removed and replaced at no cost to the Department.

423.3.3 Addition of Hydrated Lime or Anhydrite Based Material

Add the hydrated lime or anhydrite based material to the aggregate in an enclosed pug mill immediately after leaving the cold feed and just before introduction into the drier drum or aggregate drier. Minimize the loss of hydrated lime or anhydrite based material while adding to the aggregate. Use an enclosed conveyor belt to prevent blowing or loss of hydrated lime or anhydrite based material if necessary. During production, if necessary to counteract loss, increase the percentage of hydrated lime or anhydrite based material.

Equip the out feed of the hydrated lime or anhydrite based material silo with a vane feeder and install a flow sensor on the discharge from the vane feeder. Ensure that the sensor activates audible and visual signals at the control panel upon interruption of hydrated lime or anhydrite based material flow. Equip the hydrated lime or anhydrite based material silo with an approved means of metering the addition of hydrated lime or anhydrite based material to the mix at typical discharge rates with an accuracy of $\pm 3.0\%$, by weight. Approved means of metering hydrated lime or anhydrite based material include load cell weighing devices placed beneath each leg of the silo, or a weigh belt feeder between the silo discharge and the pug mill. Obtain Project Manager's approval for other means of metering the addition of hydrated lime or anhydrite based material before use. Do not use external strain gauges affixed to the legs of the silo. If the Contractor uses load cell weighing devices for hydrated lime or anhydrite based material metering, use a foundation system to support the silo in accordance with the silo manufacturer's recommendations. Control the hydrated lime or anhydrite based material content such that at a minimum the amount added is equal to the Target Value on the Job Mix Formula.

When mixing the aggregate and hydrated lime or anhydrite based material, maintain the moisture content of the combined aggregate at the recommended saturated surface dry moisture content, plus an additional $1.5\% \pm 0.5\%$, by weight. The Project Manager may increase the moisture content of the coarse and fine aggregates to properly coat the aggregates with hydrated lime or anhydrite based material and to eliminate dust pollution. Provide a method to measure the amount of moisture added to the hydrated lime or anhydrite based material-aggregate mix. On a daily basis, record the average amount of added moisture to verify specification compliance. Supply the recorded moisture information to the Project Manager upon request.

423.3.4 Equipment

423.3.4.1 Mixing Plants

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423.3.4.1.1 Plant Scales

Ensure that the scales are accurate to 0.5% of the maximum allowable load in accordance with the Federal Motor Carrier Safety Administration (FMCSA) publication. A licensed scale serviceman must certify the scales. Submit a copy of the certification to the Project Manager.

423.3.4.1.2 Equipment for Preparation of Asphalt Materials

Provide storage tanks for asphalt binder capable of heating and holding the asphalt at the required temperatures and measuring the temperature of the asphalt in the tank. Use approved heating methods that do not allow flames in contact with the tank. Design the circulating system for the asphalt binder to ensure proper and continuous circulation during the operating period. Allow measuring and sampling of asphalt binder from the delivery truck upon arrival.

423.3.4.1.3 Feeder for Drier

Equip the plant with an accurate feeding mechanism to deliver the aggregate into the drier and maintain uniform production and temperature.

423.3.4.1.4 Drier

Equip the plant with a system to continuously agitate the aggregate during the heating and drying process. Use a drier that can dry and heat the aggregate and prevent fuel oil or carbon from coating the aggregate. Take corrective action if the aggregate becomes coated with burner fuel.

423.3.4.1.5 Bins

Equip the plant with storage bins large enough to supply the mixer when it is operating at full capacity. Arrange the bins to ensure separate and adequate storage of the appropriate fractions of the mineral aggregates. When necessary, use separating boards. Provide separate dry storage for hydrated lime or anhydrite based material. Ensure that the gates on the bins do not leak. Equip the bins with warning devices that notify the control panel when the bins are low.

423.3.4.1.6 Asphalt Binder Control Unit

Equip the plant with the following:

1. A scale or meter to obtain the proper amount of asphalt binder in the mix, within the allowable tolerances; and
2. A meter for checking the quantity or rate of flow of asphalt binder put in the mixer.

423.3.4.1.7 Thermometers

Equip the asphalt feed line, near the charging valve at the mixer unit, with an approved recording thermometer with a range of from 100 °F to 400 °F. Equip the discharge chute of the drier with an approved recording thermometer to automatically register the temperature of the heated aggregates or mix, as necessary. Provide the Project Manager with a record of discharge temperatures at the end of each week's production and when requested by the Project Manager during the course of production.

423.3.4.1.8 Truck Scales Weigh the HMA on approved scales (provided by the Contractor) or public scales in accordance with Section 109.1, "Measurement of Quantity."

423.3.4.1.9 Requirements for Batching Plants

423.3.4.1.9.1 Weigh Box or Hopper

Provide a batching plant that can accurately weigh aggregate in a weigh box or hopper suspended on scales. Use a weigh box or hopper that can hold a full batch. Ensure that the gate of the weigh box or hopper does not allow material to leak into the mixer while being weighed. Test the scales in accordance with Section 109.1, "Measurement of Quantity."

423.3.4.1.9.3 Mixer Provide a batch mixer with a capacity of at least 2,000 lb, capable of producing a uniform mixture within specified tolerances.

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423.3.4.1.9.4 Control of Mixing Time Equip the mixer with an accurate timing device that signals the end of the mixing time.

423.3.4.1.10 Drum Mix Plants

1. Separate cold feed controls for each Material. Section 423: Hot Mix Asphalt – Superpave (QLA & Non-QLA) Page 196
2. An automatic interlocking device for cold feed, asphalt, and additive
3. A means for determining moisture content of aggregate so the dry weight of cold feed can be determined for proper setting of asphalt and additive flow. Determine the moisture content of the aggregate at least twice daily and adjust the moisture correction Equipment
4. A means for sampling individual cold feeds and provisions for sequential sampling of aggregate, RAP, asphalt binder, and additives while under full production
5. Measure the temperature of the mix at the discharge and the automatic burner controls.
6. A surge storage system having a minimum capacity of 40 ton, designed and equipped to prevent segregation. Equip the surge storage system bins with mechanical or electrical devices that provide an audible or visual warning when the bins are less than 1/4 full.
7. Equip the bin containing fine aggregate and filler, if required, with a device that prevents material hang-up during plant operation.
8. A minimum of one (1) cold feed bin for each aggregate fraction in the mix.
9. Equip the cold feed with mechanical or electrical devices that indicate when the bins are empty or when the cold feed belt is not carrying the proper amount of Material. The device shall automatically lock the cold feed belt and provide an audible or visual warning.
10. A separate cold feed for RAP Material. Introduce RAP so that it does not come into direct contact with the burner flame.
11. Equip the feeding mechanism with an individual belt feeder with a variable speed feeder drive controlled by electronically operated actuators. Couple the asphalt feed control with the total-aggregate-weight measurement device to automatically vary the asphalt feed rate to maintain the required proportion.

423.3.4.2 Haul Equipment

Haul asphalt mixtures with trucks that have tight, clean, smooth metal beds and a thin coat (a minimal amount) of a Department-approved release agent to prevent the mixture from adhering to the bed. Do not use release agents derived from petroleum derivatives, including but not limited to diesel fuel that contaminate or alter the characteristics of the mix.

Be prepared to cover and insulate hauling beds. Equip each truck with a waterproof and windproof cover of suitable material and sufficient size to protect the mix from the weather. Securely fasten covers when necessary to maintain temperature. Ensure that covers do not allow water to enter the bed, paver or mix material transfer device during mix unloading. Use insulated truck beds when necessary to maintain temperature.

423.3.4.2 Haul Equipment

Haul asphalt mixtures with trucks that have tight, clean, smooth metal beds and a thin coat (a minimal amount) of a Department-approved release agent to prevent the mixture from adhering to the bed. Do not use release agents derived from petroleum derivatives, including but not limited to diesel fuel that contaminate or alter the characteristics of the mix.

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Be prepared to cover and insulate hauling beds. Equip each truck with a waterproof and windproof cover of suitable material and sufficient size to protect the mix from the weather. Securely fasten covers when necessary to maintain temperature. Ensure that covers do not allow water to enter the bed, paver or mix material transfer device during mix unloading. Use insulated truck beds when necessary to maintain temperature.

423.3.4.3 Pavers

Use self-contained, self-propelled pavers, with activated screeds or strike-off assemblies, heated if necessary, and capable of spreading and finishing courses of HMA in accordance with the Plans.

423.3.4.4 Compaction Equipment

Provide a sufficient number, weight, and type of rollers to obtain the required compaction and specified pavement density while the HMA is in a workable condition. All rollers must be capable of reversing direction without shoving or tearing the mixture.

423.3.5 Placement Operations

For cold milled surfaces, prepare the surface in accordance with Section 414, Cold Milling. Clean the existing surfaces and apply a tack coat in accordance with Section 407, "Tack Coat".

When placing HMA on Base Course, Proof Roll the Base Course with a 27 ton roller or other approved Equipment and correct any soft areas, as directed by the Project Manager. Correct deficient areas at the Contractor's expense. Place the HMA on the approved surface, then spread, and strike off to the specified grade and elevation. Spread and compact the HMA in layers in accordance with the Plans.

For new construction and reconstruction, prepare the Subgrade or Base Course as follows:

1. Clean of loose or Deleterious Materials;
2. Free of frozen material;
3. Meet the moisture and density requirements; and
4. Place prime coat, as required in the Plans unless otherwise approved by the Project

Manager, in accordance with Section 408, Prime Coat.

Unless otherwise specified in the Plans, for construction on NMDOT Projects using State approved HMA designs utilizing greater than 25% RAP the use of a Materials Transfer Vehicle is required.

Materials Transfer Vehicle (MTV):

Use a MTV with storage and remixing capabilities on all mainline construction when placing HMA State approved designs. The MTV will independently remix and deliver mixture from the hauling Equipment to the paving Equipment. Furnish an MTV with the following capabilities:

1. An unloading system to receive mixtures from the hauling Equipment.
2. A minimum storage capacity of 13 tons with a remixing system in the MTV storage Bin.
3. A discharge conveyor to deliver the mixture to the paver hopper.
4. The MTV system cannot exceed maximum legal loading on Structures.

Pick-up machines, hopper inserts and material transfer devices are not considered MTVs.

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In the event the MTV malfunctions during paving operations, the Contractor can finish the Day without the MTV. Do not resume further mainline mix placement until the MTV is operational.

Consistently overloading the HMA mix into the paving machine is not acceptable. Coordinate the speed of the paving machine with the production of the plant and keep enough haul Equipment available to achieve continuous operation.

Use the control system on the paving machine to control the grade and the transverse slope by either of the following methods:

1. One end directly and the other indirectly through controlling the transverse slope; or
2. Each end independently, including screed attachments.

Suspend operations if the control system does not achieve the typical section in accordance with the Plans. Place, spread, and finish the courses of HMA according to the following:

1. Without segregation or tearing ;
2. True to the line, grade, and crown in accordance with the Plans; and
3. With self-propelled pavers, except as otherwise directed.

On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing Equipment impracticable, dump, spread, and level the HMA by other methods to achieve the required compacted thickness.

423.3.5.1 Weather Limitations

Do not place HMA on wet or frozen surfaces or if weather conditions prevent proper handling, finishing, and compacting. Place HMA when the Chill Factor is at least 40 °F and rising. If the air temperature is 60 °F or warmer, do not consider the Chill Factor.

423.3.5.2 Compaction

Compact the HMA thoroughly and uniformly immediately after placement. Operate rollers at speeds slow enough to minimize displacement of the HMA, including the lines and grades of the asphalt edges. Remove marks from pneumatic rollers and immediately correct any displacement. The Department will not allow the use of Equipment that crushes the aggregate excessively. Prevent the HMA from sticking to the roller wheels by keeping the wheels moistened with water; water mixed with very small quantities of detergent or other approved material. Do not use diesel fuel or other petroleum diluents. At locations inaccessible to the rollers, compact the HMA with hot hand tampers, smoothing irons, or mechanical tampers. The Contractor may use a trench roller or cleated compression strips under the roller to transmit compression to depressed areas. Remove areas that become loose, broken, mixed with dirt, segregated or defective, replace with fresh HMA, and compact to match the surrounding area, at no additional cost to the Department. Immediately correct areas that have excessive or deficient asphalt binder.

423.3.5.3 Not Used

423.3.5.4 Joints

Place the HMA as continuously as possible. Do not pass rollers over the unprotected end of a freshly laid mixture. When placing open-graded friction course over HMA, stagger longitudinal joints at least six (6) inches relative to the longitudinal joints of the underlying course.

Unless otherwise specified, taper transverse and longitudinal joints as follow

1. At least a three (3) ft taper for transverse joints, with a taper slope no steeper than 24:1
2. At least a one (1) ft taper or a notched taper, for longitudinal joints, with a taper slope no steeper than 6:1 or a notched taper with a one (1) inch vertical edge at the top of the taper connected to a slope no steeper than 6:1.
4. Clean and tack coat longitudinal joints from previous operations.

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5. Avoid placing longitudinal joints in the wheel paths, unless approved by the Project Manager. Completely bond joints.

Completely bond joints. Smooth the surface of each course at the joints. The Department will not allow deviations greater than 3/16 inch when tested with a ten (10) ft straightedge in any direction. When paving under traffic, schedule the daily surfacing operations so that tapered longitudinal joints are not exposed for longer than seven (7) Days.

423.3.5.5 Surface Tolerances

Smooth the surface of each completed course and prevent deviations larger than 1/8 inch using a ten (10) ft straightedge in any direction. Immediately correct deviations exceeding this tolerance. Provide a final HMA surfacing course that conforms to Section 401, "Pavement Smoothness Measurement".

423.3.5.6 Plan Surfacing Depths

Section 423: Hot Mix Asphalt – Superpave (QLA & Non-QLA) Page 199 Provide pavement at the depth specified in the Contract. Monitor depths by calculating continuous production yields using the formula found in the MT-1, as maintained by the State Construction Bureau. Calculate the required yield and the corresponding yields for 0.25 inch increase (upper limit) and decrease (lower limit). The Project Manager may adjust the required yield to fit field conditions. If adjusted, the new target yield will be communicated to the Contractor in writing. Control production to keep yield within the upper and lower limits. Correct deficiencies at no cost to the State. Correct deficient depths during placement. Address Plan Surfacing Depths in the Quality Control Plan.

423.3.5.7 Test Strip & Shakedown Period

Construct a maximum 1,000 ton test strip for each HMA mix design with a minimum of three (3) Contractor and three (3) agency samples to evaluate the JMF, process control, and placement operations. Construct test strip on Shoulder, low volume segments of the pavement, or area approved by the Project Manager. Correct and modify non-complying placement operations and produce necessary process control adjustments. Develop a revised JMF if necessary based on the results of the test strip. Production and placement operations prior to approval of the revised JMF and placement operations are at the Contractor's risk. For purposes of payment, the test strip will be evaluated in conformance with Section 416, Minor Paving. If accepted, the test strip will have a pay factor of 1.0. If rejected, said material shall be handled in accordance with Section 423.3.6.1.3 Adherence to Specifications and Rejection of Non-specification Material. Remove unaccepted test strip material placed within the Roadway Prism at no cost to the Department. If the Contractor disagrees with removing and replacing unacceptable material placed in test strips outside the Roadway Prism, the Assistant District Engineer for Construction, based on engineering judgment, will decide if the material can remain in place with a maximum pay factor of 50%, or shall be removed and replaced at no cost to the Department. If the test strip is rejected, construct a subsequent test strip. Do not proceed to full production until an accepted test strip is produced. After the test strip is placed, continue to evaluate the mix properties and the JMF during the placement of the first two (2) sublots in the first lot. Changes may be made to either the JMF or the mix proportions and/or properties with the concurrence of the Assistant District Engineer for Construction. For changes made prior to the completion of the first two (2) sublots, the adjustments will be applied to the entire lot for purposes of payment

The Project Manager may waive test strip requirements for the Project, if requested by the Contractor based on prior experience with the JMF.

For QLA Projects, the Shakedown Period is defined as the first two (2) sublots produced in the first lot. For Non-QLA Projects, the Shakedown Period is defined as the test strip. As the test strip is placed, evaluate the mix properties and the JMF. Changes may be made to either the JMF or the mix

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proportions and/or properties with the concurrence of the Project Manager, State Materials Bureau and the Assistant District Engineer for Construction.

423.3.6 Sampling and Testing

Sample and test the aggregate production and HMA mixture in accordance with Section 901, Quality Control /Quality Assurance (QC/QA), and the Department's "Minimum Testing Requirements." Department personnel may test locations other than the random locations generated for statistical analysis. These tests will not be used for pay factor determination, but may be used to determine Acceptance or rejection of localized material.

423.3.6.1 Contractor Quality Control

Administer a Quality Control Plan, referred to hereafter as "the Plan," to provide a product in accordance with the Contract. Ensure the Plan conforms to Section 901.2, "Contractor Quality Control." Submit the Plan a minimum of two (2) weeks prior to commencement of crushing operations and at a minimum comply with "Contractor Quality Control Plan Guidelines". No HMA operations are allowed until the Plan has been approved by the Project Manager and the District Lab Supervisor. Address changes in the Job Mix Formula in conformance with Section 423.2.9.1, Job Mix Formula Adjustments.

The Plan shall do the following:

1. Address elements that affect the quality of the asphalt concrete including, but not limited to, the following:
 - 1.1. Mix design;
 - 1.2. Sampling and Testing;
 - 1.3. Aggregate production; 1.3.1. Gradation
 - 1.3.2. Minus 200 wash,
 - 1.3.3. Plasticity index,
 - 1.3.4. Sand equivalent
 - 1.3.5. Fine aggregate angularity,
 - 1.3.6. Flat and elongated particles count, and
 - 1.3.7. Fractured Face count.
 - 1.4. RAP (if used);
 - 1.5. Quality of components;
 - 1.6. Stockpile management;
 - 1.7. Proportioning;
 - 1.7.1. Gradation,
 - 1.7.2. Minus 200 wash,
 - 1.7.3. Plasticity index,
 - 1.7.4. Sand equivalent,
 - 1.7.5. Fine aggregate angularity,
 - 1.7.6. Flat and elongated particles count, a
 - 1.7.7. Fractured Face count.
 - 1.8. Mixing, including addition of hydrated lime or anhydrite based material, and/or asphalt additive, if required;
 - 1.9. Transporting;
 - 1.10. Placing and finishing;
 - 1.11. Joints;
 - 1.12. Compaction;
 - 1.13. Smoothness;
 - 1.14. Plan Surfacing Depth

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- 1.15. Shakedown period;
- 1.16. Corrective Action Processes; and
- 1.17. Proposed lot size and subplot size in accordance with Section 423.3.6.3 QLA.

For the properties listed in 1.3 above, specifically address the requirements of Table 423.2.2.1.2:1 in the Plan. Define planned corrective action if the requirements are not met.

- 1.3.1 and 1.3.2 are for informational purposes during aggregate production.
- 1.3.3 through 1.3.7, if three (3) consecutive tests fail, address what will change in production. Failure to adjust will result in ceasing operations until a corrective action plan is approved by the Project Manager.

For the properties listed in 1.7 above, specifically address the requirements of Table 423.2.2.1.2:1 in the Plan. Define planned corrective action if the requirements are not met.

- For properties listed in 1.7.3 through 1.7.4, if any three (3) consecutive tests fail, the Contractor is to cease operations until a corrective plan is approved by the Project Manager and implemented.
- For properties listed in 1.7.5 through 1.7.7, any test failing by more than 5 percentage points, or if three (3) consecutive tests fail by an average of 0 to 5 percentage points, cease operations until a corrective plan is approved by the Project Manager and implemented.

Employ sampling and testing personnel who are either under the direct supervision of a TTCP certified technician or who are themselves currently certified to perform the required Quality Control testing. Provide the Project Manager with a listing of all testing personnel that summarizes their TTCP certifications or, if they are not TTCP certified to perform a particular test, which TTCP certified technician is supervising their testing. Keep the Project Manager notified, by providing an updated listing, of any changes.

Provide testing Equipment that meets all applicable ASTM and AASHTO requirements to accomplish required sampling and testing. Establish a Laboratory for the Project separate and distinct from the Department's Laboratory and Quality Assurance facilities. Submit verification that all Quality Control and assurance testing Equipment meets the applicable standards and has been calibrated per the requirements of AASHTO R-18. Remove any Equipment that does not meet the applicable standards or calibration requirements.

On Projects designated as QLA Projects, sample and test HMA in accordance with Section 901, "Quality Control/Quality Assurance (QC/QA)."

2.1. The Contractor is responsible for inspection performed at the crushing operations, hot mix plant and at the Contractor's field Laboratory; using the Laboratory test results and other Quality Control practices to ensure the quality of aggregate sources and other mix components. Adjust and control mix proportioning to meet the mix design. Be responsible for periodically inspecting all Equipment used in proportioning and mixing to ensure its proper operating condition and to ensure that proportioning and mixing is in conformance with the mix design and other requirements.

2.2. Be responsible for inspection, sampling, and testing performed at the paving site, ensuring that the delivered Materials meet Contract requirements and for periodically inspecting all Equipment used in transporting, placing, finishing, and compacting to ensure its proper operating condition. Ensure that placing, finishing, joint construction, compaction, and thickness, when required, are as specified.

- 3. Define and document the coordination of activities between the Contractor's management and all Contractor testing personnel including the frequency of each

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type of test, the criteria used by the Contractor's management and technicians to recognize deficiencies and reject or correct unacceptable Materials, and a description of proposed corrective actions

4. In the Plan, describe, in detail, the proposed process control sampling and testing programs. Include the method by which random sampling locations are to be determined. Develop sample locations for process control tests so that the center of the sample is at least 12 inches from a joint or edge of the pavement layer.

423.3.6.1.1 Contractor Quality Control of Aggregate

Obtain samples in accordance with Section 901.2.4 Sampling.

Take representative samples as required, either at the stockpile or after the aggregate material is combined but before the addition of hydrated lime or anhydrite based material and Mixing with asphalt binder. Test these samples for conformance with the approved Job Mix Formula and: (excluding RAP)

1. Gradation,
2. Minus 200 wash,
3. Plasticity index,
4. Sand equivalent,
5. Fine aggregate angularity,
6. Flat and elongated particles count, and
7. Fractured Face count.

The Project Manager may sample and test the aggregate at any time during production or stockpiling, or may request to split samples with the Contractor. If testing indicates corrections are necessary, make corrections in conformance with the Plan. The Department will base evaluation of RAP aggregate in accordance with Section 423.2.7, "Reclaimed Asphalt Pavement."

423.3.6.1.2 Contractor Quality Control for Compaction

Monitor the compaction process by determining the density of the HMA with a portable densometer in accordance with the Plan. Establish calibration of the portable densometer from cut pavement samples. Determine the density readings of the cut pavement samples in accordance with AASHTO T 166 (weight, volume method) and determine the density readings of the pavement with the portable densometer. Correlate these test results. Conduct Quality Control testing in accordance with Section 901, "Quality Control/Quality Assurance (QC/QA)," and provide test results to the Project Manager. Perform Quality Control density testing while the asphalt mixture is hot enough to permit further compaction. Do not roll for compaction when it becomes ineffective or damages the HMA. Do not use vibratory mode when the temperature of the mix is below 200 °F.

423.3.6.1.3 Adherence to Specifications and Rejection of Non-Specification Material

Produce Material in compliance with all specification requirements. Evaluate test results for specification compliance and treatment of Material that does not meet Specifications in accordance with Section 423 in its entirety. All Material that is rejected shall, at the sole discretion of the Department, be removed and replaced with specification Material at the Contractor's expense.

423.3.6.2 Department Quality Assurance

423.3.6.2.1 Acceptance

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The Department will evaluate Materials for Acceptance in accordance with this section. Sample and test the mixture and pavement on a statistically random basis in accordance with Table 901.7:6, "Minimum Acceptance Guidelines." The Project Manager may reject material that appears to be defective based on visual inspection.

Table 423.3.6.2.1:1
Acceptance Testing Tolerances^g

Characteristic	Specification limit, percentage points from TV
Air Voids, %	± 1.4
Pavement Density %c	± 2.5
Hydrated Lime or Anhydrite Based Material %e	Minimum of JMF Target Value
Voids in the Mineral Aggregate (VMA), % a,d	± 1.6
Asphalt Content %a,b	± 0.50

Table 423.3.6.2.1:1
Acceptance Testing Tolerances

- a. All gradation, Asphalt Content, VMA, and VFA values shall be determined using the AASHTO T 308 testing results.
- b. HMA will not be rejected based on Asphalt Content Determined by AASHTO T 308
- c. Density payment will be adjusted in accordance with Section 901.5
- d. If Gmm fluctuates more than ±0.03 on a consistent basis, it is recommended that the Specific Gravity of the aggregates be checked in order to verify VMA.
- e. If Hydrated Lime or Anhydrite Based Material is below Design TV cease hot mix production, investigate and correct.

423.3.6.2.1.1 Non-QLA

The Department will evaluate (QA) test results from Projects with Bid quantities less than 15,000 tons for specification compliance in accordance with the following procedures: If the mean of the test results for each property is within the Acceptance Tolerances as listed in Table 423.3.6.2.1:1, "Acceptance Testing Tolerances," the Material will be accepted at full Contract price except that Roadway density will be adjusted in price in accordance with Section 901.5, Quality Level Analysis. If the mean of the test results for any of the listed properties is outside of the tolerances as listed in Table 423.3.6.2.1:1, "Acceptance Testing Tolerances," then the Department will determine Acceptance of the Material in accordance with 901.1.3, "Acceptance Sampling and Testing," and Section 901.5, "Quality Level Analysis." A composite pay factor of more than 1.00 is not allowed for Projects with Bid quantities less than 15,000 tons. Remove and replace rejected Material with specification Material at no additional cost to the Department.

423.3.6.2.1.1.1 Acceptance of Pavement Density

The target density for Acceptance of HMA will be 94.5% of the theoretical maximum density as determined from AASHTO T 209. For determination of maximum specific gravity, obtain and test a minimum of two (2) samples and ensure the Department obtains and tests a minimum of one (1)

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sample for each Day that the HMA is placed. Each individual density test value obtained must be from 92.0% to 97.0% of the theoretical maximum density.

To be prepared for dispute resolution, the Contractor is to provide one (1) additional core for each core tested by the Department for Acceptance of density. The additional core is to be from the same lot as the initial core and shall be generated from the random sample plan. If the Contractor believes the Department's cut pavement samples have been damaged they may invoke Section 423.3.7 Dispute Resolution. The Referee Lab results will replace the initial core in determining pay factor. The Assistant District Engineer for Construction will make the final decision on accepting or rejecting material, based on the Referee Laboratory's result(s) by:

1. Accepting the section or subplot if the density falls between 92.0% - 97.0%;
2. Determining that a portion, based on visual determination, or all of the Material in that section or subplot shall be removed or replaced at no additional cost to the Department;
3. Determining that a portion, based on visual determination, of the Material in that section or subplot will be paid for at a 50% pay factor.

For purposes of Acceptance and pay factor determination, determine the density from cut pavement sections (cores) with 6-inch diameters extending through the full thickness of the HMA. Determine the pay factor in accordance with Section 901.5, Quality Level Analysis. Use a minimum of ten (10) cores to determine the pay factor, unless otherwise directed by the Assistant District Engineer for Construction. Determine the theoretical maximum density using an average of the maximum specific gravity values obtained by the Department and the Contractor the Day the core's Material was placed. If a composite pay factor of more than 1.00 is calculated, the composite pay factor will be a 1.00 for the purposes of payment

For Projects consisting of single lift overlays or mill and inlay with a single lift of two and a half inches or less, the Project Manager may grant an exception to the mean density target requirement of at least 94.5% of the theoretical maximum density if the Contractor can demonstrate that a minimum of 92.0% cannot be reasonably obtained because of the existing conditions of the Pavement Structure or Subgrade Materials. The Contractor demonstrates this by providing density results obtained during paving operations witnessed by a State Inspector at the location in question. If the Project Manager grants this exemption, construct a Roadway test strip and develop an HMA compaction process to get the highest possible density based on an approved roller's density gain per pass, in accordance with Section 423.3.4.4, Compaction Equipment. The Project Manager will approve the process, establish a new target value for density and establish a new Acceptance lot only for the portion of the Project addressed herein (except for the Roadway test strip) before paving begins or continues. Density shall not fall below 91%. If a lot does not meet either of the revised density requirements, the Project Manager will, with the concurrence of the Assistant District Engineer for Construction, do the following:

1. Accept and pay for the lot of HMA at 50% of the Bid Item Unit Price; or
2. Reject the in-place material and require the Contractor to remove and replace.

423.3.6.3 QLA

On Projects with Bid quantities of 15,000 tons or more, the Department will determine Acceptance of the Materials in accordance with Section 901.5, "Quality Level Analysis," using the Acceptance limits in Table 423.3.6.2.1:1, "Acceptance Testing Tolerances". Acceptance lots shall be between 15,000 tons and 30,000 tons, as determined at the pre-paving conference. Table 423.3.6.2.1:2 indicates properties that will be tracked for purposes of Quality Assurance. For all

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QLA Projects, if a composite pay factor of more than 1.00 is calculated, the composite pay factor will be a 1.00 for the purposes of payment.

423.3.6.3.1 Acceptance of Pavement Density

The target density for Acceptance of HMA will be 94.50% of the theoretical maximum density as determined from AASHTO T 209. For determination of maximum specific gravity, obtain and test a minimum of two (2) samples and ensure the Department obtains and tests a minimum of one (1) sample for each Day that the HMA is placed, in accordance with the random sampling plan. Each individual density test value obtained must be from 92.0% to 97.0% of the theoretical maximum density.

For purposes of Acceptance and pay factor determination, determine the density from cut pavement sections (cores) with 6-inch diameters extending through the full thickness of the HMA. Determine the pay factor in accordance with Section 901.5, Quality Level Analysis. Use a minimum of ten (10) cores to determine the pay factor, unless otherwise directed by the Assistant District Engineer for Construction. To be prepared for dispute resolution, the Contractor is to provide one (1) additional core for each core tested by the Department for Acceptance of density. The additional core is to be from the same lot as the initial core and shall be generated from the random sample plan. If the Contractor or Department believes the Department's cut pavement samples have been damaged they may invoke Section 423.3.7 Dispute Resolution. The Referee Lab results will replace the initial core in determining pay factor. Determine the theoretical maximum density using an average of the maximum specific gravity values obtained by the Department and the Contractor the Day the core's Material was placed. If a composite pay factor of more than 1.00 is calculated, the composite pay factor will be a 1.00 for the purposes of payment.

For Projects consisting of single lift overlays or mill and inlay with a single lift of two and a half inches or less, the Project Manager may grant an exception to the mean density target requirement of at least 94.5% of the theoretical maximum density if the Contractor can demonstrate that a minimum of 92.0% cannot be reasonably obtained because of the existing conditions of the Pavement Structure or Subgrade Materials. The Contractor demonstrates this by providing non-destructive density results obtained during paving operations witnessed by a State Inspector at the location in question. If the Project Manager grants this exemption, construct a Roadway test strip and develop an HMA compaction process to get the highest possible density based on an approved roller's density gain per pass, in accordance with Section 423.3.4.4, Compaction Equipment. The Project Manager will approve the process, establish a new target value for density and establish a new Acceptance lot only for the portion of the Project addressed herein (except for the Roadway test strip) before paving begins or continues. Lot density shall not fall below 91%. If a lot does not meet either of the revised density requirements, the Project Manager will, with the concurrence of the Assistant District Engineer for Construction do the following:

1. Accept and pay for the lot of HMA at 50% of the Bid Item Unit Price; or
2. Reject the in-place material and require the Contractor to remove and replace at no cost to the Department.

423.3.6.4 Independent Assurance Testing

The Department will perform Independent Assurance sampling and testing in accordance with Section 901.3, "Independent Assurance Testing."

423.3.7 Dispute Resolution

For any test incorporated into the pay factor, if a dispute exists the Project Manager and Contractor will investigate to determine why and make corrections if possible. If the discrepancy cannot be resolved, then either party may invoke a referee lab. The State Asphalt Engineer will

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maintain a list of labs that are willing and capable of performing referee testing. All referee labs shall be AASHTO Materials Reference Laboratory (AMRL) certified for the test(s) to be performed. Neither the Department's Project staff, nor the Contractor will know who is performing the referee testing. The State Asphalt Engineer will select a Laboratory, without disclosing the name of the lab to Department Project Personnel or Contractor personnel, from the following, not in priority order:

1. A District Laboratory not from the District in which the Project resides; or
2. A private Laboratory currently listed on the State Material's Bureau's list of approved private labs not involved in the subject Project in any manner, such as mix design submittal, preliminary testing for design, etc. Only laboratories that are in the routine business of providing testing and designs will be considered. Contractor owned laboratories will not be allowed.

When a referee lab is used, the referee lab's test results will be used in determining the pay factor. The referee lab must be invoked in writing within ten (10) Calendar Days of receiving the test results from the other party. If not invoked within ten (10) Calendar Days, the test results are deemed accepted. The results will be used to determine pay factors. The Department's prior test results or the Contractor's prior test results for the test in question will be discarded. If the composite pay factor decreases from applying the referee lab's results, the Contractor shall pay for the testing performed by the referee lab. If the composite pay factor increases from applying the referee lab's results, the Department will pay for the testing performed by the referee lab. If the composite pay factor remains unchanged, the cost shall be split with each party responsible for 50% of the total cost.

For all testing incorporated into the pay factor, each party shall generate an additional sample from the Department's Acceptance Samples and the Contractor's Quality Control Samples used in pay factor analysis. Failure to provide the referee samples prior to testing the initial sample will result in the Project Manager suspending the Project at no cost to the Department. Additional time will not be added to the Contract for Project suspension caused by failure to comply with Dispute Resolution Process. Work shall not resume until the Contractor provides the delayed sample(s) and satisfies the Project Manager, in writing, that future samples will be provided in compliance with this requirement. The extra sample(s) is (are) to be retained by the Department. The Department will retain the samples at the Project location inside a locked cargo container, provided by the Contractor at no cost to the State. The State will provide the lock for the cargo container. Once the pay factor is determined dispose of the unused samples at no cost to the Department. In no case will the unused samples be disposed of prior to the ten (10) Calendar Day period in which the Dispute Resolution process may be invoked.

For Pavement Density, the Contractor shall provide an additional core only for each core provided to the Department for Acceptance. The additional core will be stored and retained in the provided container. Should the Contractor invoke the Dispute Resolution Process for Density, the second core will be provided to the Referee Lab. The density pay factor for the material in question will be based solely on the Referee Lab result, not including Department or Contractor results.

Failure to comply with the requirements contained herein will result in the pay factor being calculated in accordance with the applicable Sections of 423, Super pave (QLA and Non QLA), and 901, Quality Control/Quality Assurance (QC/QA). No test results will be replaced by referee results.

423.4 METHOD OF MEASUREMENT If the Department measures HMA by the square yard, the Department will use the average width of the HMA in place and the length from station to station along the centerline of the Roadway when calculating quantities.

423.5 BASIS OF PAYMENT

Pay Item

Pay Unit

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HMA Complete

Ton or Square Yard

The Department will pay for accepted quantities at the Bid Item Unit Price, adjusted in accordance with Section 423.5.1, "Price Adjustments." Providing and transporting all cores, samples and storage containers shall be Incidental to the Pay Items above.

423.5.1 Price Adjustments

423.5.1.1 Projects with Bid Quantities of 15,000 Tons or Greater

The Department will pay for accepted quantities of HMA or HMA Complete at the Bid Item Unit Price, adjusted in accordance with Section 901.5, "Quality Level Analysis." The HMA will be evaluated on a lot-by-lot basis at a price determined by multiplying the Bid Item Unit Price by the weighting factor. The Department will use Table 423.5.1.1:1, "Weighting Factors," to calculate each lot's composite pay factor. The pay factor for the entire Project will be calculated by applying weighted averages, based on tonnage contained within each lot, to each lot's composite pay factor. If the composite pay factor for a lot is greater than 1.0, the pay factor will be set at 1.0.

**Table 423.5.1.1:1
Weighting Factors**

Characteristic	"f" Factor (%)
Mat Density	35
Air voids	35
Voids in the mineral aggregate (VMA)	20
Asphalt Content	10

*If the individual pay factor for asphalt content is less than 0.75, it will be set at 0.75 for the purpose of calculating payment.

423.5.1.2 Projects with Bid Quantities Less than 15,000 Tons

The Department will pay for accepted quantities of HMA or HMA Complete at the Bid Item Unit Price if the mean of the test results for each property is within the testing tolerances as listed in Table 423.3.6.2.1:1, "Acceptance Testing Tolerances." If the mean of the test results for any of the listed properties is outside of the testing tolerances as listed in Table 423.3.6.2.1:1, "Acceptance Testing Tolerances," then the Department will determine the price adjustment for the Material in accordance with the Department's Price Reduction Procedures current at the time of the Project letting. In no case will the pay factor be greater than 1.00.

423.5.1.2.1 Price Adjustment for Pavement Density (Bid Quantities Less than 15,000 Tons)

The Department will also adjust the Bid Item Unit Price for the HMA or HMA Complete Pay Item, based on the Roadway density, in accordance with Section 901, Quality Control/Quality Assurance (QC/QA), specifically Section 901.5, Quality Level Analysis, steps one (1) through nine (9). If the density pay factor for a lot is greater than 1.0, the density pay factor will be set at 1.0 for purposes of payment. The Department will apply the price adjustments to the HMA Item unit price for each lot.

Reference:

ot.state.nm.us/content/dam/nmdot/Plans_Specs_Estimates/2014_Specs_For_Highway_And_Bridge_Construction.pdf