Control	**6467-80-001**
Project	**MMC - 646780001**
Highway	**FM0343**
County	**NACOGDOCHES**

ADDENDUM ACKNOWLEDGMENT

Each bidder is required to acknowledge receipt of an addendum issued for a specific project. This page is provided for the purpose of acknowledging an addendum.

FAILURE TO ACKNOWLEDGE RECEIPT OF AN ADDENDUM WILL RESULT IN THE BID NOT BEING READ.

In order to properly acknowledge an addendum place a mark in the box next to the respective addendum.

ADDENDUM NO. 1 ☐

ADDENDUM NO. 2 ☐

ADDENDUM NO. 3 ☐

ADDENDUM NO. 4 ☐

ADDENDUM NO. 5 ☐

In addition, the bidder by affixing their signature to the signature page of the proposal is acknowledging that they have taken the addendum(s) into consideration when preparing their bid and that the information contained in the addendum will be included in the contract, if awarded by the Commission or other designees.

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Control	**6467-80-001**
Project	**MMC - 646780001**
Highway	**FM0343**
County	**NACOGDOCHES**

PROPOSAL TO THE TEXAS TRANSPORTATION COMMISSION

2014 SPECIFICATIONS

WORK CONSISTING OF HOT MIX/SP, TY C & D/NACOGDOCHES

NACOGDOCHES COUNTY, TEXAS

The quantities in the proposal are approximate. The quantities of work and materials may be increased or decreased as considered necessary to complete the work as planned and contemplated.

This project is to be completed in 180 calendar days and will be accepted when fully completed and finished to the satisfaction of the Executive Director or designee.

Provide a proposal guaranty in the form of a Cashier's Check, Teller's Check (including an Official Check) or Bank Money Order on a State or National Bank or Savings and Loan Association, or State or Federally chartered Credit Union made payable to the Texas Transportation Commission in the following amount:

FIVE THOUSAND (Dollars) **($5,000)**

A bid bond may be used as the required proposal guaranty. The bond form may be detached from the proposal for completion. The proposal may not be disassembled to remove the bond form. The bond must be in accordance with Item 10 of the specifications.

Any addenda issued amending this proposal and/or the plans that have been acknowledged by the bidder, become part of this proposal.

By signing the proposal the bidder certifies:

1. the only persons or parties interested in this proposal are those named and the bidder has not directly or indirectly participated in collusion, entered into an agreement or otherwise taken any action in restraint of free competitive bidding in connection with the above captioned project.
2. the signatory represents and warrants that they are an authorized signatory for the organization for which the bid is submitted and they have full and complete authority to submit this bid on behalf of their firm.
3. that the certifications and representations contained in the proposal are true and accurate and the bidder intends the proposal to be taken as a genuine government record.

- **Signed: ****

(1) _____ (2) _____ (3) _____

Print Name:

(1) _____ (2) _____ (3) _____

Title:

(1) _____ (2) _____ (3) _____

Company:

(1) _____ (2) _____ (3) _____

- Signatures to comply with Item 10 of the specifications.

**Note: Complete (1) for single venture, through (2) for joint venture and through (3) for triple venture.

*** When the calendar days field contains an asterisk (*) refer to the Special Provisions and General Notes.**

NOTICE TO CONTRACTORS

FOR THIS PROJECT THE AUDITED FINANCIAL PREQUALIFICATION REQUIREMENT IS WAIVED. ANY CONTRACTOR INTENDING TO BID ON THIS WORK MUST SUBMIT A COMPLETED "MATERIALS SUPPLIER'S QUESTIONNAIRE", WITH ANY ADDITIONAL INFORMATION REQUESTED IN THAT FORM, AT LEAST TEN DAYS PRIOR TO THE LETTING DATE.

CONTRACTORS THAT ARE CURRENTLY PREQUALIFIED BASED ON AN AUDITED FINANCIAL STATEMENT DO NOT NEED TO SUBMIT A "MATERIALS SUPPLIER'S QUESTIONNAIRE" SINCE THE NECESSARY INFORMATION IS CONTAINED IN THE AUDITED PREQUALIFICATION DOCUMENTS.

UNIT PRICES MUST BE SUBMITTED IN ACCORDANCE WITH ITEM 10 OF THE STANDARD SPECIFICATIONS OR SPECIAL PROVISION TO ITEM 10 FOR EACH ITEM LISTED IN THIS PROPOSAL.

TEXAS DEPARTMENT OF TRANSPORTATION

BID BOND

KNOW ALL PERSONS BY THESE PRESENTS,

That we, (Contractor Name) _____

_____

Hereinafter called the Principal, and (Surety Name) _____

_____

a corporation or firm duly authorized to transact surety business in the State of Texas, hereinafter called the Surety, are held and firmly bound unto the Texas Department of Transportation, hereinafter called the Obligee, in the sum of not less than two percent (2%) of the department's engineer's estimate, rounded to the nearest one thousand dollars, not to exceed one hundred thousand dollars ($100,000) as a proposal guaranty (amount displayed on the cover of the proposal), the payment of which sum will and truly be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the principal has submitted a bid for the following project identified as:

Control	**6467-80-001**
Project	**MMC - 646780001**
Highway	**FM0343**
County	**NACOGDOCHES**

NOW, THEREFORE, if the Obligee shall award the Contract to the Principal and the Principal shall enter into the Contract in writing with the Obligee in accordance with the terms of such bid, then this bond shall be null and void. If in the event of failure of the Principal to execute such Contract in accordance with the terms of such bid, this bond shall become the property of the Obligee, without recourse of the Principal and/or Surety, not as a penalty but as liquidated damages.

Signed this _____ Day of _____ 20_____

By: _____

(Contractor/Principal Name)

_____

(Signature and Title of Authorized Signatory for Contractor/Principal)

*By: _____

(Surety Name)

_____

(Signature of Attorney-in-Fact)

*Attach Power of attorney (Surety) for Attorney-in-Fact

Impressed Surety Seal Only

This form may be removed from the proposal.

CUT HERE

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BIDDER'S CHECK RETURN

IMPORTANT

The space provided for the return address must be completed to facilitate the return of your bidder's check. Care must be taken to provide a legible, accurate, and complete return address, including zip code. A copy of this sheet should be used for each different return address.

NOTE

Successful bidders will receive their guaranty checks with the executed contract.

RETURN BIDDERS CHECK TO (PLEASE PRINT):

Control	**6467-80-001**
Project	**MMC - 646780001**
Highway	**FM0343**
County	**NACOGDOCHES**

IMPORTANT

PLEASE RETURN THIS SHEET IN ITS ENTIRETY

Please acknowledge receipt of this check(s) at your earliest convenience by signing below in longhand, in ink, and returning this acknowledgement in the enclosed self addressed envelope.

Check Received By: _____ Date:_____

Title: _____

For (Contractor's Name): _____

Project _____ County_____

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NOTICE TO THE BIDDER

In the space provided below, please enter your total bid amount for this project. Only this figure will be read publicly by the Department at the public bid opening.

It is understood and agreed by the bidder in signing this proposal that the total bid amount entered below is not binding on either the bidder or the Department. It is further agreed that **the official total bid amount for this proposal will be determined by multiplying the unit bid prices for each pay item by the respective estimated quantities shown in this proposal and then totaling all of the extended amounts.**

$_____

Total Bid Amount

Control 0001-03-030
Project STP 2000(938)HES
Highway SH 20
County EL PASO

ALT	ITEM	DESC	SP	Bid Item Description	Unit	Quantity	Bid Price	Amount	Seq
	104	509		REMOV CONC (SDWLK)	SY	266.400	$10.000	$2,664.00	1

EXAMPLE

Total Bid Amount _____$2,664.00_____

Signed _____
Title _____
Date _____

Additional Signature for Joint Venture:

Signed _____
Title _____
Date _____

EXAMPLE OF BID PRICES SUBMITTED BY COMPUTER PRINTOUT

EXAMPLES

BID PRICES SUBMITTED BY HAND WRITTEN FORMAT

ALT	ITEM-CODE			UNIT BID PRICE ONLY WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC NO	S.P. NO.				
	190	026		RED OAK 1 1/2 - 1 3/4 GAL BB	EA	9.000	1
				EXAMPLE: One hundred fifty DLRS and No CENTS			

Unit price for each plant in place

	249	014		FLEX BASE(DEL)(DENSCOT)(TY A GR4 CL2)	TON	56,787.00	14
				EXAMPLE: Seven DLRS and Fifty three CENTS			

Unit price for each ton of Flexible Base

	430	001	001	CL A CONC FOR EXT STR (CULV)	CY	45.000	27
				EXAMPLE: Three hundred five DLRS and No CENTS			

Unit price for each cubic yard of Concrete

	610	007	001	RDWY ILL ASSEM(TY ST 50T-8-8)(.4 KW)S	EA	13.000	7
				EXAMPLE: Fourteen hundred sixteen DLRS and Thirty seven CENTS			

Unit price of each Roadway Illumination Assembly

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PROJECT MMC - 646780001
COUNTY NACOGDOCHES

Proposal Sheet
TxDOT
FORM 234-B I-61-5M

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	8006	6016		SP TY C PG 76-22 (PICKUP) DOLLARS and CENTS	TON	1,000.000	1
	8011	6001		D-GR HMA(SQ) TY D PG 64-22 (PICKUP) DOLLARS and CENTS	TON	500.000	2
	8011	6016		D-GR HMA(SQ)TY C PG 64-22 (PICKUP) DOLLARS and CENTS	TON	500.000	3

CERTIFICATION OF INTEREST IN OTHER BID PROPOSALS FOR THIS WORK

By signing this proposal, the bidding firm and the signer certify that the following information, as indicated by checking “Yes” or “No” below, is true, accurate, and complete.

A. Quotation(s) have been issued in this firm's name to other firm(s) interested in this work for consideration for performing a portion of this work.

_____ YES

_____ NO

B. If this proposal is the low bid, the bidder agrees to provide the following information prior to award of the contract.

1. Identify firms which bid as a prime contractor and from which the bidder received quotations for work on this project.
2. Identify all the firms which bid as a prime contractor to which the bidder gave quotations for work on this project.

GENERAL NOTES:

PROJECT DESCRIPTION: Provide Superpave Mixtures TY C and Dense-Graded Hot-Mix Asphalt Types C & D (Materials Only) at the plant for pickup to use on state-maintained roadways within the Nacogdoches County Maintenance Section.

Jeremy King Jeremy.King@txdot.gov
Jenna Hopper Jenna.Lenderman@txdot.gov

Questions may be submitted via the Letting Pre-Bid Q&A web page. This webpage can be accessed from the Notice to Contractors dashboard located at the following Address:

https://tableau.txdot.gov/views/ProjectInformationDashboard/NoticetoContractors

All contractor questions will be reviewed by the Engineer. All questions and any corresponding responses that are generated will be posted through the same Letting Pre-Bid Q&A web page.

TXDOT PROJECT SUPERVISORS: All work on this contract will be scheduled and directed by the Maintenance Section Supervisor listed below. Payment will be made monthly for work completed and accepted according to specifications. All payment requests should be directed to the following Maintenance Section Supervisor listed below.

COUNTY	SUPERVISOR	ADDRESS	CONTACT #
Nacogdoches	Clint Norton	918 Industrial Blvd. Nacogdoches, TX 75961	(936) 585-7041

CONTRACT PROSECUTION: Each contract awarded by the Department stands on its own and, as such, is separate from other contracts. A Contractor awarded multiple contracts must be capable and sufficiently staffed to concurrently process any or all contracts at the same time.

Prior to beginning operations, the Department will arrange a preconstruction conference between representatives of the Department and the Contractor. In this meeting, the representatives from all parties will discuss the contract, proposed procedures, and the plans for performing the work while providing for safe passage of traffic at all times. Specifications, unusual conditions, and other pertinent items regarding the work will also be discussed.

SECTION 10.2 - INSTRUCTIONS TO BIDDERS:

View plans on-line or download from the web at:

https://www.txdot.gov/business/letting-bids/plans-online.html

Order plans from any of the plan reproduction companies shown on the web at:

http://www.dot.state.tx.us/business/contractors_consultants/repro_companies.htm

Bid items on this contract are listed to establish a unit price for each item. Certain items listed in the proposal may not be used if it is determined by the Engineer that the work will not be required. Actual work performed as directed will be paid utilizing these prices with no further compensation made regardless of the final quantities.

SECTION 10.4 - SCOPE OF WORK:

The contract may be extended twice if in the judgment of the Engineer, the contractor has satisfactorily fulfilled the terms and conditions of the contract. The extension must be agreed upon in writing by both parties to the contract and may be extended for an additional period of time not to exceed the original contract time period. The extended contract may be for additional quantities up to the original bid quantities plus any quantities added by an approved change order. The extensions shall meet the terms and conditions of the original contract or any mutually agreed modifications to the said terms and conditions by one or more cumulative change orders. The Engineer will set a deadline for completing the agreements. This deadline will be based in the time needed to re-let and award a new contract if no extension is agreed upon.

SECTION 10.8 - PROSECUTION AND PROGRESS:

Contract Time - The number of calendar days for this project shall be 180 days or until contract funds are expended.

Calendar days will be charged in accordance with Article 10.8.2., "Contract Term".

For "pick-up" or “delivery” operations, have materials ready within the time frame listed on the work order, unless otherwise approved by the Engineer. Notify the Maintenance Section Supervisor when encountering any unforeseen delays.

Contractors will receive work orders for any needed quantities. These work orders will outline the quantities either being picked up at the plant or delivered to a designated work location. Each time work is requested on this contract, a work order will be completed.

All material delivery tickets must include the Work Order number and be signed, dated, and list the arrival/departure times by the Department representative upon arrival at final delivery location.

Failure to complete a work order will incur damages in accordance with Article 10.8.6. Actual damages incurred will be deducted from the work order payment and calculations will be provided upon request.

Providing material that does not meet the requirements of the specification does not constitute delivery and the Contractor may be required to remove all failed materials from the site. Applicable damages may continue to accrue until the Contractor delivers materials in full compliance to the designated site.

SECTION 10.9 – MEASUREMENT AND PAYMENT:

Contractor is responsible for obtaining annual overweight tolerance permit if hauling material which exceeds the legal road weight.

Trucks may be held for up to 2 hr at the jobsite at no additional expense to the Department. Written documentation of arrival will be used when calculating demurrage charges and included on an invoice submitted to the managing office. The Department will specify the arrival time and delivery frequency on the work order provided to the Contractor. If the Contractor arrives prior to the specified delivery time, the 2 hr hold will not begin until the arrival time specified on the work order.

Contractor will provide demurrage rate per truck, per 15-min increment, at the Coordination call prior to beginning work on the Contract.

Demurrage charges will be invoiced in 15-min increments, rounded down to the nearest whole increment. Contractor will be required to provide documentation for the demurrage per truck.

ITEM 500: MOBILIZATION

Mobilization does not apply to this materials contract.

ITEM 8006: SUPERPAVE MIXURES (MATERIALS ONLY)

No Department-owned RAP is available.

Use aggregate that meets the SAC requirements of Class A. TX-203 will be ran on the complete mix and a requires minimum of 45%.

Use of a substitute PG binder one grade below the PG binder specified will be allowed as long as the material meets the originally specified binders Hamburg requirements. The above criteria must continue to be met during production, and additional tests will be performed at a frequency determined by the engineer. Binder substitution is limited to a reduction in one high temperature grade. The limitation does not apply to low temperature grade. Binder substitution is allowed when aged recycled binder is used.

Add hydrated lime to all HMA mixtures at a minimum rate of 1.0% by weight of the total aggregate, except for those mixtures containing RAP and/or RAS. Mixtures that contain RAP and/or RAS shall be designed at a minimum rate of 0.5 % of lime by weight and the test results will be evaluated by the engineer to determine if lime or a liquid anti-strip additive will be used. The hydrated lime shall meet the requirements of DMS-6350, "Lime and Lime Slurry". The hydrated lime shall be added in accordance with the construction method in Item 301, "Asphalt Antistripping Agents". This lime will be subsidiary to this item.

Trial batches may be required whenever the design has not been produced in the previous 12 months. Trial batches will be subsidiary to the bid item.

On Table 1, under 3077.2.1.3, the Sand equivalent, %, Min is void and not replaced. The minimum percent for the sand equivalent shall be 45 for the combined aggregate.

ITEM 8011: DENSE-GRADED HOT-MIX ASPHALT (SMALL QUANTITY) (MATERALS ONLY)

No RAS will be allowed. For TY D Hotmix, use aggregate that meets the SAC requirement of Class B. For TY C Hotmix, use aggregate that meets the SAC requirement of Class A. Use a Texas Gyratory Compactor (TGC) or a Superpave Gyratory Compactor (SGC) to design the mixture.

Add hydrated lime to all HMA mixtures at a minimum rate of 1.0% by weight of the total aggregate, except for those mixtures containing RAP. Mixtures that contain RAP and/or RAS shall be designed at a rate of minimum 0.5% of lime by weight and the test results will be evaluated by the engineer to determine if lime or a liquid anti-strip additive will be used. The hydrated lime shall meet the requirements of DMS-6350, “Lime and Lime Slurry”. The hydrated lime shall be added in accordance with the construction method in Item 301, “Asphalt Antistripping Agents, unless otherwise approved. This lime will be subsidiary to this item.

The Plant is the designated aggregate sampling location, unless otherwise approved by the Engineer.

This contract is for small quantities only. A work order will be issued to the contractor with a minimum of a 48 hours’ notice. The contractor shall be able to provide agreed upon amounts as needed.

For Pick Up Operations**:**

- Contractor will have material ready for pick-up on the mutually agreed upon day and time.

- Contractor pick-up site will be no further than fifty (50) miles from the County Maintenance Yard.

CONTROL : 6467-80-001
PROJECT : MMC - 646780001
HIGHWAY : FM0343
COUNTY : NACOGDOCHES

TEXAS DEPARTMENT OF TRANSPORTATION

GOVERNING SPECIFICATIONS AND SPECIAL PROVISIONS

ALL SPECIFICATIONS AND SPECIAL PROVISIONS APPLICABLE TO THIS PROJECT ARE IDENTIFIED AS FOLLOWS:

STANDARD SPECIFICATIONS: ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION NOVEMBER 1, 2014. STANDARD SPECIFICATIONS ARE INCORPORATED INTO THE CONTRACT BY REFERENCE.

ITEM 10 MAINTENANCE AND TRAFFIC MATERIALS CONTRACTS

SPECIAL PROVISIONS: SPECIAL PROVISIONS WILL GOVERN AND TAKE PRECEDENCE OVER THE SPECIFICATIONS ENUMERATED HEREON WHEREVER IN CONFLICT THEREWITH.

SPECIAL PROVISION "NONDISCRIMINATION" (000---002)
SPECIAL PROVISION "CERTIFICATE OF INTERESTED PARTIES (FORM 1295)" (000--1019)
SPECIAL PROVISION TO ITEM 10 (010---001)

SPECIAL SPECIFICATIONS:

ITEM 8006 SUPERPAVE MIXTURES (MATERIALS ONLY)
ITEM 8011 DENSE-GRADED HOT-MIX ASPHALT (SMALL QUANTITY) (MATERIALS ONLY)

GENERAL: THE ABOVE-LISTED SPECIFICATION ITEMS ARE THOSE UNDER WHICH PAYMENT IS TO BE MADE. THESE, TOGETHER WITH SUCH OTHER PERTINENT ITEMS, IF ANY, AS MAY BE REFERRED TO IN THE ABOVE-LISTED SPECIFICATION ITEMS, AND INCLUDING THE SPECIAL PROVISIONS LISTED ABOVE, CONSTITUTE THE COMPLETE SPECIFICATIONS FOR THIS PROJECT.

CHILD SUPPORT STATEMENT

Under Section 231.006, Family Code, the vendor or applicant certifies that the individual or business entity named in this contract, bid, or application is not ineligible to receive the specified grant, loan, or payment and acknowledges that this contract may be terminated and payment may be withheld if this certification is inaccurate.

CONFLICT OF INTEREST CERTIFICATION

Pursuant to Texas Government Code Section 2261.252(b), the Department is prohibited from entering into contracts in which Department officers and employees have a financial interest.

By signing the Contract, the Contractor certifies that it is not prohibited from entering into a Contract with the Department as a result of a financial interest as defined under Texas Government Code Section 2261.252(b), and that it will exercise reasonable care and diligence to prevent any actions or conditions that could result in a conflict of interest with the Department.

The Contractor also certifies that none of the following individuals, nor any of their family members within the second degree of affinity or consanguinity, owns 1% or more interest or has a financial interest as defined under Texas Government Code Section 2261.252(b) in the Contractor:

- Any member of the Texas Transportation Commission; and
- The Department's Executive Director, General Counsel, Chief of Procurement and Field Support Operations, Director of Procurement, and Director of Contract Services.

Violation of this certification may result in action by the Department.

E-VERIFY CERTIFICATION

Pursuant to Texas Transportation Code §223.051, all TxDOT contracts for construction, maintenance, or improvement of a highway must include a provision requiring Contractors and subcontractors to use the U.S. Department of Homeland Security's E-Verify system to determine employment eligibility. By signing the contract, the Contractor certifies that prior to the award of the Contract:

- the Contractor has registered with and will, to the extent permitted by law, utilize the United States Department of Homeland Security's E-Verify system during the term of the Contract to determine the eligibility of all persons hired to perform duties within Texas during the term of the agreement; and
- the Contractor will require that all subcontractors also register with and, to the extent permitted by law, utilize the United States Department of Homeland Security's E-Verify system during the term of the subcontract to determine the eligibility of all persons hired to perform duties within Texas during the term of the agreement.

Violation of this requirement constitutes a material breach of the Contract, subjects a subcontractor to removal from the Contract, and subjects the Contractor or subcontractors to possible sanctions in accordance with Title 43, Texas Administrative Code, Chapter 10, Subchapter F, "Sanctions and Suspension for Ethical Violations by Entities Doing Business with the Department."

Certification Regarding Disclosure of Public Information

Pursuant to Subchapter J, Chapter 552, Texas Government Code, contractors executing a contract with a governmental body that results in the expenditure of at least $1 million in public funds must:

1) preserve all contracting information* as provided by the records retention requirements applicable to Texas Department of Transportation (TxDOT) for the duration of the contract,
2) on request of TxDOT, promptly provide any contracting information related to the contract that is in the custody or possession of the entity, and
3) on completion of the contract, either:
    A. provide, at no cost to TxDOT, all contracting information related to the contract that is in the custody or possession of the entity, or
    B. preserve the contracting information related to the contract as provided by the records retention requirements applicable to TxDOT

The requirements of Subchapter J, Chapter 552, Government Code, may apply to this contract, and the contractor or vendor agrees that the contract can be terminated if the contractor or vendor knowingly or intentionally fails to comply with a requirement of that subchapter.

By entering into Contract, the Contractor agrees to:

- provide, or make available, to TxDOT and any authorized governmental investigating or auditing agency all records, including electronic and payment records related to the contract, for the same period provided by the records retention schedule applicable to TxDOT, and
- ensure that all subcontracts include a clause requiring the same.

* As defined in Government Code §552.003, "Contracting information" means the following information maintained by a governmental body or sent between a governmental body and a vendor, contractor, potential vendor, or potential contractor:

1) information in a voucher or contract relating to the receipt or expenditure of public funds by a governmental body;
2) solicitation or bid documents relating to a contract with a governmental body;
3) communications sent between a governmental body and a vendor, contractor, potential vendor, or potential contractor during the solicitation, evaluation, or negotiation of a contract;
4) documents, including bid tabulations, showing the criteria by which a governmental body evaluates each vendor, contractor, potential vendor, or potential contractor responding to a solicitation and, if applicable, an explanation of why the vendor or contractor was selected; and
5) communications and other information sent between a governmental body and a vendor or contractor related to the performance of a final contract with the governmental body or work performed on behalf of the governmental body.

CERTIFICATION TO NOT BOYCOTT ISRAEL

Pursuant to Texas Government Code §2271.002, the Department must include a provision requiring a written verification affirming that the Contractor does not boycott Israel, as defined in Government Code §808.001, and will not boycott Israel during the term of the contract. This provision applies to a contract that:

1) is with a Contractor that is not a sole proprietorship,
2) is with a Contractor with 10 or more full-time employees, and
3) has a value of $100,000 or more.

By signing the contract, the Contractor certifies that it does not boycott Israel and will not boycott Israel during the term of this contract. “Boycott” means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes.

Violation of this certification may result in action by the Department.

CERTIFICATION TO NOT BOYCOTT ENERGY COMPANIES

Pursuant to Texas Government Code §2274.002, the Department must include a provision requiring a written verification affirming that the Contractor does not boycott energy companies, as defined in Government Code §809.001, and will not boycott energy companies during the term of the contract. This provision applies to a contract that:

1) is with a Contractor that is not a sole proprietorship,
2) is with a Contractor with 10 or more full-time employees, and
3) has a value of $100,000 or more.

By signing the contract, the Contractor certifies that it does not boycott energy companies and will not boycott energy companies during the term of this contract. “Boycott” means taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations with a company because the company: (1) engages in the exploration, production, utilization, transportation, sale, or manufacturing of fossil fuel-based energy and does not commit or pledge to meet environmental standards beyond applicable federal and state law; or (2) does business with a company described by (1).

Violation of this certification may result in action by the Department.

CERTIFICATION TO NOT DISCRIMINATE AGAINST FIREARM ENTITIES OR FIREARM TRADE ASSOCIATIONS

Pursuant to Texas Government Code §2274.002, the Department must include a provision requiring a written verification affirming that the Contractor:

1) does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association, as defined in Government Code §2274.001, and
2) will not discriminate against a firearm entity or firearm trade association during the term of the contract.

This provision applies to a contract that:

1) is with a Contractor that is not a sole proprietorship,
2) is with a Contractor with 10 or more full-time employees, and
3) has a value of $100,000 or more.

By signing the contract, the Contractor certifies that it does not discriminate against a firearm entity or firearm trade association as described and will not do so during the term of this contract. "Discriminate against a firearm entity or firearm trade association" means, with respect to the entity or association, to: (1) refuse to engage in the trade of any goods or services with the entity or association based solely on its status as a firearm entity or firearm trade association; (2) refrain from continuing an existing business relationship with the entity or association based solely on its status as a firearm entity or firearm trade association; or (3) terminate an existing business relationship with the entity or association based solely on its status as a firearm entity or firearm trade association. "Discriminate against a firearm entity or firearm trade association" does not include: (1) the established policies of a merchant, retail seller, or platform that restrict or prohibit the listing or selling of ammunition, firearms, or firearm accessories; (2) a company's refusal to engage in the trade of any goods or services, decision to refrain from continuing an existing business relationship, or decision to terminate an existing business relationship to comply with federal, state, or local law, policy, or regulations or a directive by a regulatory agency, or for any traditional business reason that is specific to the customer or potential customer and not based solely on an entity 's or association's status as a firearm entity or firearm trade association.

Violation of this certification may result in action by the Department.

Special Provision to Item 000
Nondiscrimination

1. DESCRIPTION

All recipients of federal financial assistance are required to comply with various nondiscrimination laws including Title VI of the Civil Rights Act of 1964, as amended, (Title VI). Title VI forbids discrimination against anyone in the United States on the grounds of race, color, or national origin by any agency receiving federal funds.

Texas Department of Transportation, as a recipient of Federal financial assistance, and under Title VI and related statutes, ensures that no person shall on the grounds of race, religion (where the primary objective of the financial assistance is to provide employment per 42 U.S.C. § 2000d-3), color, national origin, sex, age or disability be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any Department programs or activities.

2. DEFINITION OF TERMS

Where the term “contractor” appears in the following six nondiscrimination clauses, the term “contractor” is understood to include all parties to contracts or agreements with the Texas Department of Transportation.

3. NONDISCRIMINATION PROVISIONS

During the performance of this contract, the contractor agrees as follows:

3.1. **Compliance with Regulations**. The Contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (hereinafter, “DOT”) Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

3.2. **Nondiscrimination**. The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

3.3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

3.4. **Information and Reports:** The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Texas Department of Transportation to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information the contractor shall so certify to the Recipient, or the Texas Department of Transportation as appropriate, and shall set forth what efforts it has made to obtain the information.

3.5. **Sanctions for Noncompliance**. In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the Recipient shall impose such contract sanctions as it or the Texas Department of Transportation may determine to be appropriate, including, but not limited to:

- withholding of payments to the contractor under the contract until the contractor complies, and/or
- cancellation, termination or suspension of the contract, in whole or in part.

3.6. **Incorporation of Provisions**. The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the Recipient or the Texas Department of Transportation may direct as a means of enforcing such provisions including sanctions for non-compliance: Provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the Recipient to enter into such litigation to protect the interests of the Recipient, and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

Special Provision 000
Certificate of Interested Parties (Form 1295)

Submit a notarized Form 1295, "Certificate of Interested Parties," in the following instances:

- at Contract execution for Contracts awarded by the Commission;
- at Contract execution for Contracts awarded by the District Engineer or Chief Engineer with an award amount of $1,000,000 or more; at any time an existing Contract awarded by the District Engineer or Chief Engineer increases in value to $1,000,000 or more due to changes in the Contract; at any time there is an increase of $1,000,000 or more to an existing Contract (change orders, extensions, and renewals); or
- at any time there is a change to the information in Form 1295, when the form was filed for an existing Contract.

Form 1295 and instructions on completing and filing the form are available on the Texas Ethics Commission website.

Special Provision to Item 10
Maintenance and Traffic Materials Contracts

ITEM 10 APPLIES TO MAINTENANCE MATERIALS (MMC) AND TRAFFIC MATERIALS CONTRACTS (TMC) WITH NO FEDERAL FUNDS BEING USED. ITEMS 1–9 DO NOT APPLY TO MMC AND TMC CONTRACTS.

1. ABBREVIATIONS AND DEFINITIONS

1.1. **Applicability.** Wherever the following terms are used in these specifications or other Contract documents, the intent and meaning will be interpreted as shown below.

1.2. **Abbreviations.**

AASHTO	American Association of State Highway and Transportation Officials
AMRL	AASHTO Materials Reference Laboratory
ANSI	American National Standards Institute
ASNT	American Society for Nondestructive Testing
ASTM	American Society for Testing and Materials
CFR	Code of Federal Regulations
DMS	Departmental Material Specification
EPA	United States Environmental Protection Agency
FHWA	Federal Highway Administration, U.S. Department of Transportation
MPL	Material Producer List
NEMA	National Electrical Manufacturers Association
NEPA	National Environmental Policy Act
NRM	Nonhazardous Recyclable Material
NTPEP	National Transportation Product Evaluation Program
OSHA	Occupational Safety & Health Administration, U.S. Department of Labor
PS&E	Plans, Specifications, and Estimates
QA	Quality Assurance
QC	Quality Control
SBE	Small Business Enterprise
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
USC	United States Code

1.3. **Definitions.**

1.3.1. **Actual Cost**. Contractor's actual cost to provide material, including labor, equipment, and project overhead necessary for the work.

1.3.2. **Addendum**. Change in proposal forms developed between advertising and bid submittal deadline.

1.3.3. **Advertisement**. The public announcement required by law inviting bids for work to be performed or materials to be furnished.

1.3.4. **Affiliates**. Two or more Bidders are affiliated if they share common officers, directors, or stockholders; a family member of an officer, director, or stockholder of one Bidder serves in a similar capacity in another of the Bidders; an individual who has an interest in, or controls a part of, one Bidder either directly or indirectly also has an interest in, or controls a part of, another of the Bidders; the Bidders are so closely connected or associated that one of the Bidders, either directly or indirectly, controls or has the power to control another Bidder; one Bidder controls or has the power to control another Bidder; or the Bidders are closely allied

through an established course of dealings including, but not limited to the lending of financial assistance. Refer to 43 TAC §9.12(g), "Affiliated Entities."

1.3.5. **Anticipated Profit**. Profit for work not performed.

1.3.6. **Apparent Low Bidder**. The Bidder determined to have the numerically lowest total bid as a result of the tabulation of bids by the Department.

1.3.7. **Award**. The Commission's acceptance of a Contractor's bid for a proposed Contract that authorizes the Department to enter into a Contract.

1.3.8. **Bid**. The offer from the Bidder for performing the work described in the proposal.

1.3.9. **Bid Bond**. The security executed by the Contractor and the Surety furnished to the Department to guarantee payment of liquidated damages if the Contractor fails to enter into an awarded Contract.

1.3.10. **Bid Error**. A mathematical mistake made by a Bidder in the unit price entered into the proposal.

1.3.11. **Bidder**. An individual, partnership, limited liability company, corporation, or joint venture submitting a bid for a proposed Contract.

1.3.12. **Bidders Questionnaire**. A prequalification form that reflects detailed equipment and experience data but waives audited financial data.

1.3.13. **Callout Work**. A type of Contract that requires a Contractor's response on an as-needed basis through issuance of a work order.

1.3.14. **Certificate of Insurance**. A form approved by the Department covering insurance requirements stated in the Contract.

1.3.15. **Change Order**. Written order to the Contractor detailing changes to the specified work, item quantities, or any other modification to the Contract.

1.3.16. **Commission**. The Texas Transportation Commission or authorized representative.

1.3.17. **Confidential Questionnaire.** A prequalification form that reflects detailed financial and experience data.

1.3.18. **Contract**. The agreement between the Department and the Contractor establishing the obligations of the parties for furnishing of materials and performance of the work prescribed in the Contract documents.

1.3.19. **Contract Documents**. Elements of the Contract including, but not limited to the plans, specifications incorporated by reference, special provisions, special specifications, bid bond, change orders, and supplemental agreements.

1.3.20. **Contract Term.** The number of calendar days until the contract terminates or the date the contract terminates, unless extended by mutual agreement.

1.3.21. **Contractor**. The individual, partnership, limited liability company, corporation, or joint venture and all principals and representatives with which the Contract is made by the Department. For MMC and TMC contracts and these specifications, the contracted material supplier is considered a Contractor.

1.3.22. **Debar (Debarment)**. Action taken by the Department or federal government pursuant to regulation that prohibits a person or company from entering into a Contract, or supplier of materials or equipment used in a highway improvement Contract as defined in Transportation Code, Chapter 223, Subchapter A.

1.3.23. **Department**. The Texas Department of Transportation (TxDOT).

1.3.24. **Departmental Materials Specifications**. Reference specifications for various materials published by the Materials and Tests Division.

1.3.25. **Electronic Vault**. The Department's bidding system where electronic bids are stored before bid opening.

1.3.26. **Escalation Ladder.** A process to determine issue resolution during the course of the Contract.

1.3.27. **Engineer**. The Chief Engineer of the Department or the authorized representative of the Chief Engineer.

1.3.28. **Expedited Work Order.** A work order requiring material to be delivered within 48 hr.

1.3.29. **Family Member**. A family member of an individual is the individual's parent, parent's spouse, step-parent, step-parent's spouse, sibling, sibling's spouse, spouse, child, child's spouse, spouse's child, spouse's child's spouse, grandchild, grandparent, uncle, uncle's spouse, aunt, aunt's spouse, first cousin, or first cousin's spouse. Refer to 43 TAC § 9.12(g), "Affiliated Entities."

1.3.30. **Hazardous Materials or Waste**. Hazardous materials or waste include but are not limited to explosives, compressed gas, flammable liquids, flammable solids, combustible liquids, oxidizers, poisons, radioactive materials, corrosives, etiologic agents, and other material classified as hazardous by 40 CFR 261, or applicable state and federal regulations.

1.3.31. **Independent Assurance Tests**. Tests used to evaluate the sampling and testing techniques and equipment used in the acceptance program. The tests are performed by the Department and are not used for acceptance purposes.

1.3.32. **Inspector**. The person assigned by the Engineer to inspect for compliance with the Contract and the materials used.

1.3.33. **In Writing.** Communication memorialized to include written or electronic documentation via email or letter only.

1.3.34. **Joint Venture**. Any combination of individuals, partnerships, limited liability companies, or corporations submitting a single bid proposal.

1.3.35. **Letting**. The receipt, opening, tabulation, and determination of the apparent low Bidder.

1.3.36. **Letting Official**. The Executive Director or any Department employee empowered by the Executive Director to officially receive bids and close the receipt of bids at a letting.

1.3.37. **Licensed Professional Engineer**. A person who has been duly licensed by the Texas Board of Professional Engineers to engage in the practice of engineering in the State of Texas; also referred to as a Professional Engineer.

1.3.38. **Maintenance Materials Contract**. A type of Contract for the purchase of roadway materials.

1.3.39. **Material Producer List**. Department maintained list of approved products.

1.3.40. **Materially Unbalanced Bid**. A bid that generates a reasonable doubt that award to the Bidder submitting a mathematically unbalanced bid will result in the lowest ultimate cost to the State.

1.3.41. **Materials Contract**. A Contract entered under Transportation Code, Chapter 223, Subchapter A, for roadway materials, traffic control devices, or safety devices. These contracts are designated as "MMC" and "TMC" for Maintenance Materials or Traffic Materials contracts respectively.

1.3.42. **Materials Supplier's Questionnaire.** A prequalification form that reflects basic information, such as company contact, signature authority, and other requirements, but waives financial, equipment, and experience data.

1.3.43. **Mathematically Unbalanced Bid**. A bid containing bid prices that do not reflect reasonable actual costs plus a reasonable proportionate share of the Bidder's anticipated profit, overhead costs, and other indirect costs.

1.3.44. **National Holidays**. January 1, the last Monday in May, July 4, the first Monday in September, the fourth Thursday in November, December 24, and December 25.

1.3.45. **Nonhazardous Recyclable Material**. A material recovered or diverted from the nonhazardous waste stream for the purposes of reuse or recycling in the manufacture of products that may otherwise be produced using raw or virgin materials.

1.3.46. **Nonresident Bidder**. A Bidder whose principal place of business is not in Texas. This includes a Bidder whose ultimate parent company or majority owner does not have its principal place of business in Texas.

1.3.47. **Nonresponsive Proposal**. A proposal that does not meet the criteria for acceptance contained in the proposal form.

1.3.48. **Notification**. Either written or oral instruction to the Contractor. Voice mail is oral notification.

1.3.49. **Plans**. The drawings approved by the Engineer, including true reproductions of the drawings that may show the location, character, dimensions, and details of the work and are a part of the Contract. Documents may include drawings or digital files.

1.3.50. **Power of Attorney for Bid Bonds**. An instrument under corporate seal appointing an attorney in fact to act on behalf of a Surety in signing bonds.

1.3.51. **Prequalification**. The process for determining a Contractor's eligibility to bid work.

1.3.52. **Prequalification Statement**. The forms on which required information is furnished concerning the Contractor's ability to perform and finance the work.

1.3.53. **Producer Price Index (PPI)**. As defined by the US Bureau of Labor Statistics, program measures the average change over time in the selling prices received by domestic producers for their output. The prices included in the PPI are from the first commercial transaction for many products and some services.

1.3.54. **Proposal**. The offer from the Bidder submitted on the prescribed form, including addenda issued, giving unit bid prices for performing the work described in the plans and Specifications.

1.3.55. **Proposal Form**. The form printed and sent to the Bidder by the Department or printed by the Bidder from the Department's bidding system.

1.3.56. **Proposal Guaranty**. The security furnished by the Bidder as a guarantee that the Bidder will enter into a Contract if awarded the work.

1.3.57. **Quality Assurance**. Sampling, testing, inspection, and other activities conducted by the Engineer to determine payment and make acceptance decisions.

1.3.58. **Quality Control**. Sampling, testing, and other process control activities conducted by the Contractor to monitor production and placement operations.

1.3.59. **Referee Tests**. Tests requested to resolve differences between Contractor and Engineer test results. The referee laboratory is the Materials and Tests Division.

1.3.60. **Regular Item**. A bid item contained in a proposal.

1.3.61. **Responsive Bid**. A proposal that meets all requirements of the proposal form for acceptance.

1.3.62. **Roadside**. The areas between the outside edges of the shoulders and the right of way boundaries.

1.3.63. **Special Provisions**. Additions or revisions to these standard specifications or special specifications.

1.3.64. **Special Specifications**. Supplemental specifications applicable to the Contract not covered by these standard specifications.

1.3.65. **Specifications**. Directives or requirements issued or made pertaining to the method and manner of performing the work or to quantities and qualities of materials to be furnished under the Contract. References to DMSs, ASTM or AASHTO specifications, or Department bulletins and manuals, imply the latest standard or tentative standard in effect on the date of the proposal. The Engineer will consider incorporation of subsequent changes to these documents in accordance with Article 10.4, "Scope of Work."

1.3.66. **State**. The State of Texas.

1.3.67. **State Holiday**. A holiday authorized by the State Legislature excluding optional state holidays and not listed in Section 10.1.3.44., "National Holidays." A list of state holidays can be found on the Department's website.

1.3.68. **Subsidiary**. Materials, labor, or other elements that because of their nature or quantity have not been identified as a separate item and are included within the items on which they necessarily depend.

1.3.69. **Supplier's Agent**. The representative of the Contractor who is available at all times and able to receive instructions from the Engineer or authorized Department representatives and to act for the Contractor.

1.3.70. **Suspension**. Action taken by the Department or federal government pursuant to regulation that prohibits a person or company from entering into a Contract, or supplier of materials or equipment used in a highway improvement Contract as defined in Transportation Code, Chapter 223, Subchapter A.

1.3.71. **Traffic Materials Contract**. A type of Contract for the purchase of traffic control and safety devices.

1.3.72. **Verification Tests**. Tests used to verify accuracy of QC and QA and mixture design testing.

1.3.73. **Wholly-Owned Subsidiary**. A legal entity owned entirely by the Contractor.

1.3.74. **Work**. The furnishing of all approved materials necessary for the successful completion of the Contract.

1.3.75. **Work Authorization**. A letter issued to the Contractor by the Department to notify when calendar day charges are beginning on the Contract. This letter of notification could be tied with the issuance of the first work order.

1.3.76. **Work Order**. Written notice to the Contractor to provide a specified quantity of materials in accordance with the Contract. The work order may contain other specific instructions for the Contractor. A work order is part of the Contract.

1.3.77. **Work Order Time.** Time (days) specified in the Contract for the completion of all deliveries specified in a work order. The time begins with the date of the work order.

1.3.78. **Written Notice**. Written notice is considered to have been duly given if delivered in person to the individual or member to whom it is intended or if sent by regular, registered, or certified mail and delivered to the last known business address; sent by facsimile to the last known phone number; or sent by e-mail to the last known address. The date of the letter will serve as the beginning day of notice. Unclaimed mail or failure to provide current contact information will not be considered a failure to provide written notice.

2. INSTRUCTIONS TO BIDDERS

2.1. **Introduction.** Instructions to the Contractor in these Specifications are generally written in active voice, imperative mood. The subject of imperative sentences is understood to be "the Contractor." The Department's responsibilities are generally written in passive voice, indicative mood. Phrases such as "as approved," "unless otherwise approved," "upon approval," "as directed," "as verified," "as ordered," and "as determined" refer to actions of the Engineer unless otherwise stated, and it is understood that the directions, orders, or instructions to which they relate are within the limitations of and authorized by the Contract.

2.2. **Eligibility of Bidders.** Obtain a prequalification form from the Department's website. A Bidder may choose to be prequalified by submitting either a Confidential Questionnaire (CQ), a Bidder's Questionnaire (BQ), or a Materials Supplier's Questionnaire (MQ). Submit the appropriate questionnaire at least 10 calendar days before the last day of the bid opening for the District or statewide letting. Comply with all technical prequalification requirements in the proposal. Once prequalified, a Bidders eligibility is valid for a period of 1 yr. Bidding capacity and available bidding capacity does not apply to MMC and TMC contracts.

Reference 43 TAC §§ 9.11, "Definitions," and 9.12, "Qualification of Bidders."

2.2.1. **Confidential Questionnaire (CQ)**. Submit a CQ and an audited financial statement for approval. Once prequalified, a Bidder's eligibility is valid for a period of 1 yr. from the balance sheet statement date.

2.2.2. **Bidder's Questionnaire (BQ)**. Bidders prequalified with a BQ are only eligible to bid on projects identified as being waived from the requirements of Section 10.2.2.1., "Confidential Questionnaire (CQ)." Materials Contract proposals are designated with a "MW" on the Proposal Request Form. Submit a BQ for approval. Once prequalified, a Bidder's eligibility is valid for a period of 1 yr. from the date the BQ was received by the Department.

2.2.3. **Materials Supplier's Questionnaire (MQ)**. A prequalification form, prescribed by the Department, that gathers information, such as company contact, signature authority, and other requirements, to allow a person to bid on a materials contract, i.e., for maintenance materials, traffic control devices, or safety devices. Bidders that submit only an MQ are eligible to bid only on a materials contract. Moreover, bidding capacity does not apply for a materials contract. An uncompleted materials contract does not affect the bidding capacity or available bidding capacity of a Bidder who submits a CQ or a BQ.

2.3. **Issuing Proposal Forms.** The Department will issue a proposal form to a prequalified Bidder as prescribed in Section 10.2.2. "Eligibility of Bidders." Request a proposal form electronically from the Department's website. A proposal form printed directly from the Department's website is for informational purposes only and will not be accepted as an official proposal form. In the case of a joint venture, all joint venture participants must be prequalified.

The Department will not issue a proposal form if one or more of the following apply:

- the Bidder is suspended or debarred by the Commission or the Department,
- the Bidder has not fulfilled the requirements for prequalification,
- the Bidder is prohibited from rebidding a specific proposal form due to a bid error on the original proposal form,
- the Bidder failed to enter into a Contract on the original award,
- the Bidder was defaulted or terminated on the original Contract, unless the Department terminated in the best interest of the State or the public,
- the Bidder or a subsidiary or affiliate of the Bidder has received compensation from the Department to participate in the preparation of the plans or specifications on which the bid or Contract is based,
- the Bidder is ineligible to bid on any proposed Contract in accordance with Article 10.7.8., "Responsibility for Damage Claims,"
- the Bidder is prohibited from participating in the contract because of a decision of the Deputy Executive Director under 43 TAC § 9.24 "Performance Review Committee and Actions",

- the Bidder failed to attend a mandatory pre-bid conference, or
- the Bidder or affiliate of the Bidder that was originally determined as the apparent low Bidder on a project, but was deemed nonresponsive for failure to register or participate in the Department of Homeland Security (DHS) E-Verify system as specified in Section 10.2.14., "Department of Homeland Security (DHS) E-Verify System," is prohibited from rebidding that specific project.

Reference 43 TAC §§ 9.12, "Qualification of Bidders," and 9.13, "Notice of Letting and Issuance of Bid Forms."

2.4. **Interpreting Estimated Quantities.** The quantities listed in the proposal form are approximate and will be used for the comparison of bids. Payments will be made for the work performed in conformance with the Contract.

2.5. **Examining Documents and Work Locations.** Examine the proposal form, plans, specifications, and specified work locations before submitting a bid for the work. Submitting a bid will be considered evidence that the Bidder has performed this examination.

Oral explanations, instructions, or consideration for Contractor-proposed changes in the proposal form given during the bidding process are not binding. Only requirements included in the proposal form, associated specifications, plans, and Department-issued addenda are binding. Request explanations of documents in adequate time to allow the Department to reply before the bid opening.

Immediately notify the Department of any error, omission, or ambiguity discovered in any part of the proposal form and Contract documents. The Department will issue addenda when appropriate.

2.6. **Preparing the Bid.** Prepare the bid on the proposal form furnished by the Department. Informational proposal forms printed from the Department's website will not be accepted.

Specify a unit price in dollars and cents for each regular item.

The Department will not accept an incomplete bid. A bid that has one or more of the deficiencies listed below is considered incomplete:

- certifications were not acknowledged,
- a regular item left blank,
- the proposal form submitted had the incorrect number of items,
- the Bidder did not acknowledge all addenda, or
- additionally, for printed bids:
  - the blank spaces for each item as required in the bid form are not filled in by writing in words in ink,
  - the bid was not signed in ink in the complete and correct name of the bidder making the bid, and signed by the person or persons authorized to bind the bidder, or
  - unit prices were not stated in dollars and cents for each bid item listed in the bid form.

Reference 43 TAC § 9.14, "Submittal of Bid."

2.7. **Nonresponsive Bid.** The Department will not accept a nonresponsive bid. A bid that has one or more of the deficiencies listed below is considered nonresponsive:

- the bid was not in the hands of the Letting Official at the time and location specified in the advertisement,
- a proposal form was submitted for the same project by a Bidder or Bidders and one or more of its partners or affiliates, unless the Executive Director has granted an affiliation exception under 43 TAC § 9.12, "Qualification of Bidders,"
- the Bidder was not authorized to receive a proposal form under Section 10.2.3., "Issuing Proposal Forms,"

- the Bidder failed to acknowledge receipt of all addenda issued,
- the proposal form was signed by a person who was not authorized to bind the Bidder or Bidders,
- the proposal guaranty did not comply with the requirements contained in this Item,
- the bid was in a form other than the official proposal form issued by the Department,
- the Bidder modified the bid in a manner that altered the conditions or requirements for work as stated in the proposal form,
- a typed proposal form does not contain the information in the format shown on the "Example of Bid Prices Submitted by Computer Printout" in the proposal form,
- the Bidder did not meet the requirements of the technical qualification, or
- the Bidder failed to participate in the Department of Homeland Security (DHS) E-Verify system as specified in Section 10.2.14.

Reference 43 TAC § 9.15, "Acceptance, Rejection, and Reading of Bids."

2.8. **Electronic Bid.** The Bidder is responsible for taking the appropriate measures to submit a bid. These measures include, but are not limited to acquiring hardware, software, and Internet connectivity needed for submitting a bid via the Department's bidding system.

2.8.1. **Proposal Form.** Use the electronic proposal form in the Department's bidding system. Acknowledge all addenda listed in the Department's bidding system.

The electronic proposal form does not contain the special provisions, special specifications, general notes, and other Contract documents. These documents are included by reference.

2.8.2. **Proposal Guaranty**. Provide a proposal guaranty in the amount indicated on the proposal form. Use an electronic bid bond. Guaranty checks or printed bid bonds will not be accepted.

For a joint venture, the bond must be in the name of all joint venture participants. Enter the bond authorization code into the Department's bidding system.

It is the Bidder's responsibility to ensure the electronic bid bond is issued in the name or Department vendor ID numbers of the Bidder or Bidders.

2.8.3. **Submittal of Bid**. Submit the bid to the vault using the Department's bidding system.

2.8.4. **Revising the Proposal Form**. Make desired changes in the Department's bidding system up until the time and date set for the opening of bids. The last bid submitted to the vault will be used for tabulation purposes.

2.8.5. **Withdrawing a Bid**. Submit an electronic or written request to withdraw a bid before the time and date set for the opening. The Department will not accept oral requests. An electronic request must be made using the Department's bidding system.

A written request must be signed and submitted to the Letting Official conducting the letting with proof of identification. The request must be made by a person authorized to bind the Bidder or Bidders. In the case of joint venture, the Department will accept a request from any person authorized to bind a party to the joint venture. The Department may require written delegation of authority to withdraw a bid when the individual sent to withdraw the bid is not authorized to bind the Bidder or Bidders.

2.9. **Printed Bid.**

2.9.1. **Proposal Form**. Mark all entries in ink. As an alternative to hand writing the unit prices in the proposal form, submit a typed proposal form. A typed proposal form must contain the information in the format shown on the "Example of Bid Prices Submitted by Computer Printout" in the proposal form.

Acknowledge all addenda by checking the appropriate box on the addendum acknowledgement page. Provide the complete and correct name of the Bidder submitting the bid. A person authorized to bind the Bidder must sign the proposal form. In the case of a joint venture, provide the complete and correct name of all Bidders submitting the bid. In the case of a joint venture, the person signing the proposal form must be authorized to bind all joint venture participants.

2.9.2. **Proposal Guaranty**. Provide a proposal guaranty in the amount indicated on the proposal form. Use either a guaranty check or a printed bid bond. An electronic bid bond may be used as the guaranty. Ensure the electronic bid bond meets the requirements of Section 10.2.8.2., "Proposal Guaranty," and submit the electronic bid bond with the printed bid.

2.9.2.1. **Guaranty Check**. When utilized, make the check payable to the Texas Transportation Commission or the Texas Department of Transportation. The check must be a cashier's check, money order, or teller's check drawn by or on a state or national bank, or a state or federally chartered credit union (collectively referred to as "bank"). The check must be dated on or before the date of the bid opening. Postdated checks will not be accepted. The type of check or money order must be indicated on the face of the instrument, except in the case of a teller's check, and the instrument must be no more than 90 days old. A check must be made payable at or through the institution issuing the instrument; be drawn by a bank and on a bank; or be payable at or through a bank. The Department will not accept personal checks, certified checks, or other types of money orders.

2.9.2.2. **Bid Bond**. When a bond is utilized, use the bid bond form provided by the Department. Submit the bid bond in the amount specified with the powers of attorney dated and attached. The bond must be dated on or before the date of the bid opening, bear the impressed seal of the Surety, and be signed by the Bidder or Bidders and an authorized individual of the Surety. As an alternative for joint venture Bidders, each of the Bidders may submit a separate bid bond completed as outlined in this Section. Bid bonds will only be accepted from Sureties authorized to execute a bond under and in accordance with state law.

2.9.3. **Submittal of Bid**. Place the completed proposal form and the proposal guaranty in a sealed envelope marked to indicate the contents.

When submitting by mail or delivery service, place the envelope in another sealed envelope and address as indicated in the official advertisement. It is the Bidder's responsibility to ensure that the sealed bid arrives at the location described on or before the time and date set for the bid opening. To be accepted, the bid must be in the hands of the Letting Official by that time of opening regardless of the method chosen for delivery.

2.9.4. **Revising the Proposal Form**. Make desired changes to the proposal form in ink, initial each change made, and submit the proposal to the Letting Official. Correction fluid or tape will be considered a change to the bid and requires the initials of the Bidder. The Department will not make revisions to a bid on behalf of a Bidder.

2.9.5. **Withdrawing a Bid**. Submit to the Letting Official conducting the letting a written request to withdraw a bid before the time and date set for the opening. The Department will not accept oral requests. A written request must be signed and submitted to the Letting Official with proof of identification. The request must be made by a person authorized to bind the Bidder or Bidders. In the case of joint venture, the Department will accept a request from any person authorized to bind a party to the joint venture. The Department may require written delegation of authority to withdraw a bid when the individual sent to withdraw the bid is not authorized to bind the Bidder or Bidders.

2.10. **Opening and Reading of Bids.** At the time, date, and location specified in the official advertisement, the Letting Official will publicly open and read bids.

2.11. **Tabulating Bids.**

2.11.1. **Official Total Bid Amount**. The Department will sum the products of the quantities and the unit prices bid in the proposal form to determine the official total bid amount, except as provided in Section 10.2.11.5., "Consideration of Unit Prices." The official total bid amount is the basis for determining the apparent low Bidder. The total bid amounts will be compared, and the results made public.

2.11.2. **Consideration of Bid Format**. When a Bidder submits both an electronic bid and a printed bid that is responsive, the unit bid prices in the electronic bid will be used to determine the total bid amount. If the electronic bid is incomplete or nonresponsive, the printed bid will be used in the tabulation of the total bid amount.

If a Bidder submits two or more printed bids, all responsive bids will be tabulated. The bid with the lowest tabulation will be used to determine the total bid amount.

2.11.3. **Rounding of Unit Prices**. The Department will round off all unit bids involving fractional parts of a cent to the nearest one-tenth cent ($0.001) in determining the amount of the bid as well as computing the amount due for payment of each item under the Contract. For rounding purposes, entries that contain five-hundredths of a cent ($0.0005) or more will be rounded up to the next highest tenth of a cent, while entries that contain less than five-hundredths of a cent will be rounded down to the next lowest tenth of a cent and in accordance with Section 10.2.11.5. Bids less than five-hundredths of a cent ($0.0005) will be rounded to one-tenth of a cent ($0.001). When credit items are included (negative unit prices), rounding is performed on the absolute value.

2.11.4. **Interpretation of Unit Prices**. The Department will make a documented determination of the unit bid price if a unit bid price is illegible. The Department's determination will be final.

2.11.5. **Consideration of Unit Prices**. Unit bid price entries such as no dollars and no cents, zero dollars and zero cents, or numerical entries of $0.00 will be tabulated as one-tenth of a cent ($.001). The Department will consider proposals where unit bid prices have been left blank incomplete and nonresponsive.

2.11.5.1. **"Buy America."** The use of foreign steel is only allowed when shown on the plans. For a Bidder who proposes to use foreign steel or iron materials to be considered the apparent low Bidder, their total bid must be at least 25% lower than the next lowest bid if that bid proposes to use domestic steel or iron materials.

This requirement does not apply to minimal use of steel or iron materials provided that the total cost of all foreign source items used in the project, as delivered to the project site, is less than $2,500 or one-tenth-of-one-percent (1/10 of 1%) of the Contract amount, whichever is greater.

2.11.5.2. **Home State Bidding Preference**. For the purpose of determining the apparent low Bidder on proposed Contracts, the Department will select the option that results in the greatest bidding preference to the resident Bidder.

2.11.5.2.1. **Reverse Application of Non-Resident Bidder's Home State Bidding Preference**. The total bid amount will be based upon the reverse application of the non-resident Bidder's home state bidding preference, if any. This will also apply to another state's preference for a Bidder that offers materials grown, produced, processed, or manufactured in that state.

Any reverse application of the home state bidding preference would be the greater of the following:

- the amount by which a resident Bidder would be required to underbid the non-resident Bidder to obtain a comparable contract in the state in which the non-resident's principle place of business is located; or
- the amount by which a resident Bidder would be required to underbid the non-resident Bidder to obtain a comparable contract in the state in which a majority of the manufacturing relating to the Contract will be performed.

2.11.5.2.2. **Texas Home State Bidding Preference**. A Bidder will be considered the apparent low Bidder if the Bidder's home office is located in this state and their bid does not exceed an amount equal to 105% of the apparent low bid received from a Bidder whose home office is not located in this state. This will not apply to a Bidder from a bordering state whose state does not give a preference to a Bidder in a manner similar to this Section.

2.12. **Consideration of Bid Errors.** The Department will consider a claim of a bid error by the apparent low Bidder if the following requirements have been met:

- a written notification is submitted to the Department within five business days after the date the bid is opened; and
- the submittal identifies the items of work involved and includes bidding documentation. The Department may request clarification of submitted documentation.

The Department will evaluate the claim of a bid error by the apparent low Bidder by considering the following:

- the bid error relates to a material item of work,
- the bid error amount is a significant portion of the total bid,
- the bid error occurred despite the exercise of ordinary care, and
- the delay of the proposed work will not impact cost and safety to the public.

Acceptance of the bid error claim by the Department will result in the rejection of all bids. The erring Contractor will not be allowed to bid the project when it is re-let. Rejection of bids due to the Contractor's bid error may result in the application of remedial actions by the Department.

Reference 43 TAC § 9.24, "Performance Review Committee and Actions."

2.13. **Tie Bids.** If the official total bid amount for two or more Bidders is equal and those bids are the lowest submitted, each tie Bidder will be given an opportunity to withdraw their bid. If two or more tie Bidders do not withdraw their bids, the low Bidder will be determined by a coin toss or a series of coin tosses when there are more than two Bidders. If all tie Bidders request to withdraw their bids, no withdrawals will be allowed and the low Bidder will be determined by a coin toss or a series of coin tosses when there are more than two Bidders. The Letting Official will preside over the proceedings.

2.14. **Department of Homeland Security (DHS) E-Verify System.** The Department will not award a Contract to a Contractor that is not registered in the DHS E-Verify system. Remain active in E-Verify throughout the life of the Contract.

If the apparent low Bidder does not appear on the DHS E-Verify system before award, the Department will notify the Contractor that they must submit documentation showing that they are compliant within five calendar days after the date the notification was sent. A Contractor who fails to comply or respond within the deadline will be declared non-responsive. The Bidder forfeiting the proposal guaranty will not be considered in future proposals for the same work unless there has been a substantial change in the scope of the work. The Bidder forfeiting the proposal guaranty will not be considered in future proposals for the same work unless there has been a substantial change in the scope of the work.

The Department may recommend that the Commission:

- reject all bids, or
- award the Contract to the new apparent low Bidder, if the Department is able to verify the Bidder's participation in the DHS E-verify system.

If the Department is unable to verify the new apparent low Bidder's participation in the DHS E-Verify system:

- the new apparent low Bidder will not be deemed nonresponsive,
- the new apparent low Bidder's guaranty will not be forfeited,
- the Department will reject all bids,
- the new apparent low Bidder will remain eligible to receive future proposals for the same project, and
- the proposal guaranty of the original low bidder will become the property of the State, not as a penalty, but as liquidated damages.

3. AWARD AND EXECUTION OF CONTRACT

3.1. **Award of Contract.** The Commission or original award authority will award, reject, or defer the Contract within 30 days after the opening of the proposal. The Department reserves the right to reject any or all proposals and to waive technicalities in the best interest of the State.

3.1.1. **Award**. The Commission or original award authority will award the Contract to the low Bidder as determined by Section 10.2.11., "Tabulating Bids." The Commission may award a Contract to the second lowest Bidder when the following requirements have been met:

- the Contract is for maintenance work with an Engineer's estimate less than $300,000,
- the low Bidder withdraws its bid or fails to enter into Contract,
- the second lowest Bidder agrees to perform the work at the unit bid prices of the low Bidder,
- the Executive Director recommends in writing the award of the Contract to the second lowest Bidder, and
- the Commission agrees with the Executive Director's recommendation for award to the second lowest Bidder.

3.1.2. **Rejection**. The Commission or original award authority will reject the Contract if:

- collusion may have existed among the Bidders. Collusion participants will not be allowed to bid future proposals for the same Contract,
- the low bid is mathematically and materially unbalanced. The Bidder will not be allowed to bid future proposals for the same Contract,
- the lowest bid is higher than the Department's estimate and re-advertising for bids may result in a lower bid,
- the low bid contains a bid error that satisfies the requirements and criteria in Section 10.2.12., "Consideration of Bid Errors," or
- rejection of the Contract is in the best interest of the State.

3.1.3. **Deferral**. The Commission may defer the award or rejection of the Contract when deferral is in the best interest of the State.

3.2. **Rescinding of Award.** The Commission or original award authority reserves the right to cancel the award of any Contract before contract execution with no compensation due when the cancellation is in the best interest of the State. The Department will return the proposal guaranty to the Contractor.

3.3. **Execution of Contract.** Provide the following within 15 days after written notification of award of the Contract.

3.3.1. **Contract**. Execute the Contract as prescribed by the Department.

3.3.2. **Insurance.** Refer to Section 10.3.7, "Beginning of Work."

Once work begins, insurances must cover the work for the duration of the Contract and must remain in effect until final acceptance. Provide project specific insurance, not listed in Table 1, until acceptance of the work covered by the project specific insurance or as approved by the Engineer. Failure to obtain and maintain insurance for the contracted work may result in suspension of work or default of the Contract. If the insurance expires and coverage lapses for any reason, stop all work until the Department receives an acceptable certificate of insurance.

Provide the Department with a certificate of insurance verifying the types and amounts of coverage shown in Table 1. The certificate of insurance must be in a form approved by the Texas Department of Insurance. Any certificate of insurance provided must be available for public inspection.

Table 1
Insurance Requirements

Type of Insurance	Amount of Coverage
Commercial General Liability Insurance	Not Less Than: $600,000 each occurrence
Business Automobile Policy	Not Less Than: $600,000 combined single limit
Workers' Compensation	Not Less Than: Statutory

By signing the Contract, the Contractor certifies compliance with all applicable laws, rules, and regulations pertaining to workers' compensation insurance. Pay all deductibles stated in the policy.

The Workers' Compensation policy must include a waiver of subrogation endorsement in favor of the Department.

The work performed under this Section will not be measured or paid for directly but will be subsidiary to pertinent Items.

3.3.3. **Business Ownership Information.** Submit the names and social security numbers of all individuals owning 25% or more of the firm, or firms in the case of a joint venture, on the Department's form.

3.4. **Failure to Enter Contract.** If the Contractor fails to comply with all of the requirements in Section 10.3.3., "Execution of Contract," the proposal guaranty will become the property of the State, not as a penalty, but as liquidated damages. The Contractor forfeiting the proposal guaranty will not be considered in future proposals for the same work unless there has been a substantial change in design of the work and may result in the application of remedial actions by the Department.

Reference 43 TAC § 9.24, "Performance Review Committee and Actions."

3.5. **Approval and Execution of Contract**. The Contract will be approved and signed under authority of the Commission.

3.6. **Return of Proposal Guaranty.** The proposal guaranty check of the low Bidder will be retained until after the Contract has been rejected or awarded and executed. Bid bonds will not be returned.

3.7. **Beginning of Work.** Do not begin work until authorized in writing by the Engineer. Do not begin work until a certificate of insurance showing coverages in conformance with the Contract requirements is provided and accepted.

Verify all quantities of materials shown on the plans before ordering.

For Contracts with callout work and work orders, the purchase of materials before a work order is issued or without prior written approval of the Engineer is at the Contractor's risk, and the Department is not obligated for the cost of the materials or work to acquire the materials.

3.8. **Assignment of Contract.** Do not assign, sell, transfer, or otherwise dispose of the Contract or any portion of the rights, title, or interest (including claims) without the approval of the Commission or original award authority. The Department must deem any proposed assignment justified and legally acceptable before the assignment can take place.

4. SCOPE OF WORK

4.1. **Contract Intent**. The intent of the Contract is to describe the completed work to be performed. Furnish materials, supplies, and other incidentals necessary for the proper delivery of the materials in conformance with Contract documents.

4.2. **Coordination Call.** Before starting work, schedule and participate in a coordination call or virtual meeting with the Engineer or designated representative to establish points of contact for communication, an issue escalation ladder, delivery location details, and other Contract requirements. Work with the Engineer to resolve or escalate all issues.

4.2.1. **Issue Resolution Process**. An issue is any aspect of the Contract where parties of the Contract do not agree. The individuals identified at the lowest level of the issue escalation ladder will initiate the issue resolution process by escalating any issue that remains unresolved within the time frame outlined in the issue escalation ladder.

Work with the Engineer or designated representative to resolve all issues during the course of the Contract. Refer to Section 10.4.5., "Dispute or Claims Procedure," for all unresolved issues.

4.3. **Changes in the Work.** The Engineer reserves the right to make changes in the Contract including addition, reduction, or elimination of quantities and alterations needed to complete the Contract. Perform the work as altered. If no unit price exists, this will be considered extra work and the Contract will be amended by a change order. The Department does not guarantee a specific volume to be purchased. No minimum compensation to the Contractor is guaranteed. Quantities indicated for each Item in the Contract are estimates only and are based on the previous usage. These estimates should not be construed as a minimum or maximum quantity to be ordered.

If a delivery location changes by more than five miles, either party can request an adjustment to the Contract for changes in freight trucking cost.

4.3.1. **Contract Extensions.** When mutually agreed in writing, the Engineer may extend the Contract if the Contractor has satisfactorily fulfilled the terms and conditions of the Contract. The extension may be for a period of time not to exceed the original Contract time and may include additional quantities up to the original bid quantities plus any quantities added by change order. Unit prices may be adjusted, with the extension, to reflect the current Federal Producer Price Index (PPI) published by the Bureau of Labor Statistics (BLS), Region VI, Washington, DC 20212. The extension will meet the terms and conditions of the original Contract. When mutually agreed, execute the extension before the end of the term of the existing, or previously extended, Contract. Prosecute the original Contract and the extension consecutively. The extension will be allowed once for any Contract greater than 6 mo. in duration not to exceed 12 mo. and twice for any Contract duration 6 mo. or less.

4.4. **Requests for Additional Compensation and Damages.** Notify the Engineer in writing of any intent to request additional compensation once there is knowledge of the basis for the request. An assessment of damages is not required to be part of this notice but is desirable. The intent of the written notice requirement is to provide the Engineer an opportunity to evaluate the request and to keep an accurate account of the actual costs that may arise. Minimize impacts and costs.

If written notice is not given, the Contractor waives the right to additional compensation unless the circumstances could have reasonably prevented the Contractor from knowing the cost impact before performing the work. Notice of the request and the documentation of the costs will not be construed as proof or substantiation of the validity of the request. Submit the request in enough detail to enable the Engineer to determine the basis for entitlement, adjustment in the number of working days specified in the Contract, and compensation.

Damages occur when impacts that are the responsibility of the Department result in additional costs to the Contractor that could not have been reasonably anticipated at the time of letting.

4.5. **Dispute or Claims Procedure.** The dispute resolution policy promotes a cooperative attitude between the Engineer and Contractor. Emphasis is placed on resolving issues while they are still current, at the area office or the district office, and in an informal manner. Open sharing of information is encouraged by all parties involved so the information provided completely and accurately reflects the issues and facts. If information is not shared, decisions may be limited to relying on the documentation that is available for review.

It is the Department's goal to have a dispute settled in the District before elevating it to the Contract Claim Committee (CCC) as a claim. The Construction Division can assist in the resolution of a dispute with a Contractor when requested by the District. The Contractor may request that a District ask for assistance of the Construction Division; however, the request for a recommendation prepared by the Construction Division to settle a dispute must come from the District.

If a dispute cannot be resolved, initiate the Contract claim procedure by submitting a claim to the District Engineer, the Director of the Construction Division, or the CCC.

The Department's Contract claim procedure has been established in accordance with 43 TAC § 9.2, Contract Claim Procedure. Detailed instructions for submitting a claim and its components can be found on the Department's website.

If a claim has been submitted and the Contractor wishes to resume negotiations with the District, notify the CCC in writing of the intent to resume negotiations at the District level and request review of the claim be suspended by the CCC pending the outcome of the negotiations.

Contractor may file a claim after completion of the Contract or when required for orderly performance of the Contract. File the claim no later than 1 yr. after the date the Department issues notice to the Contractor that they are in default, the date the Department terminates the Contract, or 1 yr. after the date of final acceptance of the Contract. It is the Contractor's responsibility to submit requests in a timely manner.

5. CONTROL OF THE WORK

5.1. **Authority of Engineer.** The Engineer has the authority to observe, test, inspect, approve, and accept the materials. The Engineer decides all questions about the quality and acceptability of materials, Contract interpretations, and acceptable Contract fulfillment. The Engineer has the authority to enforce and make effective these decisions.

The Engineer acts as a referee in all questions arising under the terms of the Contract. The Engineer's decisions will be final and binding.

The Engineer will pursue and document actions against the Contractor as warranted to address Contract performance issues. Contract remedies include, but are not limited to, the following:

- requiring the Contractor to remove and replace defective material, or reducing payment for defective material,
- assessing standard liquidated damages to recover the Department's administrative costs, including additional project-specific liquidated damages when specified in the Contract in accordance with 43 TAC §9.22, "Liquidated Damages,"
- withholding estimates, and
- declaring the Contractor to be in default of the Contract.

The Engineer will consider and document any events outside the Contractor's control that contributed to the failure to meet performance standards, including consideration of sufficient time.

Follow the issue escalation ladder if there is disagreement regarding the application of Contract remedies.

5.2. **Coordination of Plans, Specifications and Special Provisions.** The specifications, accompanying plans, special provisions, change orders, and supplemental agreements are intended to work together and be interpreted as a whole.

Numerical dimensions govern over scaled dimensions. Special provisions govern over plans (including general notes), which govern over standard specifications and special specifications. Job-specific plan sheets govern over standard plan sheets when included.

Notify the Engineer or designated representative promptly of any omissions, errors, or discrepancies discovered so that necessary corrections and interpretations can be made. Failure to promptly notify the Engineer will constitute a waiver of all claims for misunderstandings or ambiguities that result from the errors, omissions, or discrepancies discovered.

5.3. **Inspection.** Inspectors are authorized representatives of the Engineer. Inspectors are authorized to examine all materials furnished, including preparation, fabrication, and material manufacture. Inspectors inform the Contractor of failures to meet Contract requirements. Inspectors may reject materials. Inspectors cannot alter, add, or waive Contract provisions or issue instructions contrary to the Contract. Inspection or lack of inspection will not relieve the Contractor from obligation to provide materials or perform the work in conformance with the Contract.

5.4. **Work Order Final Acceptance.** The Engineer or designated representative will determine if all material was provided and met Contract specifications according to the work orders issued on the Contracts. Work Order Final Acceptance relieves the Contractor from further Work Order responsibilities.

5.5. **Contract Termination**. The Contract terminates upon the latter of 1) fulfillment of all Work Orders; or 2) on the termination date or after passage of the calendar days shown in the proposal, unless extended by mutual agreement.

6. CONTROL OF MATERIALS

6.1. **Source Control.** Use only materials that meet Contract requirements. Unless otherwise specified or approved, provide new materials. Secure the Engineer's approval of the proposed source of materials to be used before their delivery if requested.

6.1.1. **Buy America**. Comply with the latest provisions of Buy America as listed at 23 CFR 635.410. Use steel or iron materials manufactured in the United States except when:

- the cost of materials, including delivery, does not exceed 0.1% of the total Contract cost or $2,500, whichever is greater,
- the Contract contains an alternate item for a foreign source steel or iron product and the Contract is awarded based on the alternate item, or
- the materials are temporarily installed.

Submit a notarized original of the Form D-9-USA-1 (Department Form 1818) with the proper attachments for verification of compliance.

Manufacturing is any process that modifies the chemical content, physical shape or size, or final finish of a product. Manufacturing begins with initial melting and mixing and continues through fabrication (cutting, drilling, welding, bending, etc.) and coating (paint, galvanizing, epoxy, etc.).

6.1.2. **Buy Texas**. Provide materials produced in Texas when the materials are available at a comparable price and in a comparable period of time. Provide documentation of purchases or a description of good-faith efforts on request.

6.2. **Acceptance or Rejection of Defective Material.** When work fails to meet the Contract requirements but is still adequate to serve the purpose, the Engineer will decide the extent to which the materials will be accepted and remain. The Engineer will document the basis of acceptance and may adjust the Contract price. When materials fail to meet contract requirements and is inadequate to serve the purpose, it will be considered defective. Correct, or remove and replace the materials at the Contractor's expense as directed. Reimburse the Department for cost incurred if additional sampling and testing is required by a change of source.

Materials not meeting Contract requirements will be rejected, unless the Engineer approves corrective actions. Upon rejection, immediately remove and replace rejected materials.

The Department has the authority to remove or replace defective materials. Cost for the removal may be deducted from any money due or to become due to the Contractor.

6.3. **Manufacturer Warranties.** Transfer to the Department warranties and guarantees required by the Contract or received as part of normal trade practice.

6.4. **Sampling, Testing, and Inspection.** Refer to the Material Special Specification for more information. The material requirements and standard test methods in effect at the time the proposed Contract is advertised govern. Unless otherwise noted, the Department will perform testing at its expense. If requested, provide a complete written statement of the origin, composition, and manufacture of materials.

Material that has been tested and approved at a supply source or staging area may be inspected or tested within 30 days upon delivery and rejected if it does not meet Contract requirements. Copies of test results are available upon request. Do not supply material that, after approval, becomes unfit for use.

6.5. **Plant Inspection and Testing.** The Engineer may, but is not obligated to inspect materials at the acquisition or manufacturing source. Material samples will be obtained and tested for compliance with quality requirements. Materials produced under Department inspection are for Department use only unless released in writing by the Engineer.

If inspection is at the plant, meet the following conditions unless otherwise specified:

- cooperate fully and assist the Engineer during the inspection,
- ensure the Engineer has full access to all parts of the plant used to manufacture or produce materials,
- provide a facility at the plant for use by the Engineer as an office or laboratory, in accordance with Item 504, "Field Office and Laboratory,"
- provide and maintain adequate safety measures and restroom facilities, and
- furnish and calibrate scales, measuring devices, and other necessary equipment in accordance with Item 320, "Equipment for Asphalt Concrete Pavement."

The Engineer may provide inspection for periods other than daylight hours if:

- continuous production of materials for Department use is necessary due to the production volume being handled at the plant, and
- the lighting is adequate to allow satisfactory inspection.

6.6. **Hazardous Materials.** Comply with the requirements of Section 10.7.6., "Responsibility for Hazardous Materials."

Use materials that are free of hazardous materials. Notify the Engineer immediately if materials are suspected to contain hazardous materials. If materials delivered or provided by the Contractor are suspected to contain hazardous materials, have an approved commercial laboratory test the materials for the presence of hazardous materials as approved. Remove, remediate, and dispose of any of these materials found to contain hazardous materials. The work required to comply with this section will be at the Contractor's expense if materials are found to contain hazardous materials. Work order day charges will not be suspended and extensions of work order day charges will not be granted for activities related to handling hazardous material introduced by the Contractor. If suspected materials are not found to contain hazardous materials, the Department will reimburse the Contractor for hazardous materials testing.

7. LEGAL RELATIONS AND RESPONSIBILITIES

7.1. **Ethics.** Honor the Department's ethics policy. The Department's ethics policy has been established in accordance with 43 TAC Chapter 10. A complete copy of the Department's ethics policy can be found on the Department's website.

By entering into Contract, the Contractor certifies that the Contractor has read and understands the Department's ethics policy.

Failure to honor this policy may result in action by the Department, which includes but is not limited to verbal warning, removal of project personnel, termination of the Contract, and sanctions under the Texas Administrative Code.

7.2. **Laws to be Observed.** Comply with all federal, state, and local laws, ordinances, and regulations that affect the performance of the work. The Contractor is not required to comply with city electrical ordinances not included in this Contract. Indemnify and save harmless the State and its representatives against any claim arising from violation by the Contractor of any law, ordinance, or regulation.

This Contract is between the Department and the Contractor only. No person or entity may claim third-party beneficiary status under this Contract or any of its provisions, nor may any non-party sue for personal injuries or property damage under this Contract.

7.3. **Permits, Licenses, and Taxes**. Procure all permits and licenses; pay all charges, fees, and taxes; and give all notices necessary and incidental to the due and lawful prosecution of work, except for permits provided by the Department.

7.4. **Patented Devices, Material, and Processes.** Indemnify and save harmless the State from any claims for infringement from the Contractor's use of any patented design, device, material, process, trademark, or copyright selected by the Contractor and used in connection with the work. Indemnify and save harmless the State against any costs, expenses, or damages that it may be obliged to pay, by reason of this infringement, at any time during the prosecution or after the completion of the work**.**

7.5. **Personal Liability of Public Officials.** Department employees are agents and representatives of the State and will incur no liability, personal or otherwise, in carrying out the provisions of the Contract or in exercising any power or authority granted under the Contract**.**

7.6. **Responsibility for Hazardous Materials.** Comply with the requirements of Section 10.6.6., "Hazardous Materials." Indemnify and save harmless the State and its agents and employees from all suits, actions, or claims and from all liability and damages for any injury or damage to any person or property arising from the generation or disposition of hazardous materials introduced by the Contractor on any work done by the Contractor on State-owned or controlled sites. Indemnify and save harmless the State and its representatives from any liability or responsibility arising out of the Contractor's generation or disposition of any hazardous materials obtained, processed, stored, shipped, etc., on sites not owned or controlled by the State. Reimburse the State for all payments, fees, or restitution the State is required to make as a result of the Contractor's actions.

7.7. **Protecting Adjacent Property.** Protect adjacent property from damage. If any damage results from an act or omission on the part of or on behalf of the Contractor, take corrective action to restore the damaged property to a condition similar or equal to that existing before the damage was done.

7.8. **Responsibility for Damage Claims.** Indemnify and save harmless the State and its agents and employees from all suits, actions, or claims and from all liability and damages for any injury or damage to any person or property due to the Contractor's negligence in the performance of the work and from any claims arising or amounts recovered under any laws, including workers' compensation and the Texas Tort Claims Act. Indemnify and save harmless the State and assume responsibility for all damages and injury to property of any character occurring during the prosecution of the work resulting from any act, omission, neglect, or misconduct on the Contractor's part in the manner or method of executing the work; from failure to properly execute the work; or from defective work or material.

If the Contractor asserts any claim or brings any type of legal action (including an original action, third-party action, or cross-claim) against any member of the Commission or individual employee of the Department for any cause of action or claim for alleged negligence arising from the Contract, the Contractor will be ineligible to bid on any proposed Contract with the Department during the pendency of the claim or legal action.

7.9. **Hauling and Loads on Roadways and Structures.** Comply with federal and state laws concerning legal gross and axle weights.

8. PROSECUTION AND PROGRESS

8.1. **Prosecution of Work.** The Contract term begins at the issuance of a Work Order or 30 calendar days from the execution date, whichever comes first. When work orders are issued, provide approved materials within the specified time. Restrictions on delivery times will be as shown on the plans.

8.2. **Contract Term**. Contract term will be the calendar days shown in the plans. Calendar days will be charged Sunday through Saturday, including all holidays, regardless of weather conditions, material availability, or other conditions not under the control of the Contractor.

8.3. **Work Orders**. There will be a minimum of seven working days allowed to deliver material as of the date of the work order except for Expedited Work Orders (EWO). The actual number of days allowed for delivery of materials will be shown in the Contract and work order; however, anything less than seven working days in the Contract or work order (except for an EWO) is not allowed.

8.3.1. **Delivery of Materials.** Materials will be delivered Monday through Friday, excluding national or state holidays, if weather or other conditions permit the performance of the manufacturing and delivery of materials for a continuous period of seven hr. between 7 A.M. and 5 P.M.

8.4. **Shipping.** All shipping will be Freight on Board destination. Material prices with delivery by railcar or by truck must include all shipping and handling fees, including but not limited to fees for any equipment necessary to offload material, unless specifically allowed for in the Contract general notes.

If a delay is foreseen, Contractor will give written notice to the Department and must keep the Department advised at all times of order status. Default in promised delivery (without written acceptance of reasons) or failure to meet specifications authorizes the Department to purchase materials elsewhere and charge any increased costs for the materials, including the cost of re-soliciting, to the Contractor.

8.5. **Issuance of Expedited Work Order**. Expedited Work Order (EWO) will only contain bid items identified as "expedited" in the Contract. An EWO completion time will be 48 hr. or less as shown in the Contract. The time begins when the Department contacts the Contractor with an EWO. A Contractor must accept the work order within 2 hr. from initial contact of the Department, or the Department will obtain the material through another source. The Department could seek damages for any costs exceeding the EWO cost.

8.5.1. **Expedited Work Orders Delivery of Materials.** EWO delivery days include Sunday through Saturday.

8.6. **Late Delivery Damages**. The time and date established for the completion of each work order is an essential element of the Contract. The Department will coordinate with the Contractor as shown in the Contract for specific materials. In the case of conflict, see Section 10.5.2., "Coordination of Plans, Specifications and Special Provisions," for governing language.

If the Contractor fails to complete a work order within the number of working days specified, working days will continue to be charged. Failure to complete a work order within the number of working days specified, including any approved additional working days, will result in actual damages being charged as follows.

- For roadway operations, any materials specified in the work order will be considered late unless the Department agrees to a new time and date offered by the Contractor no less than 48 hr. before the work order's time and date of delivery. Actual damages incurred will be deducted from the monthly payment and calculations will be provided upon request. If advanced notice is not approved and the Department has to obtain material through another source, the Department could seek damages for any costs exceeding the Contract bid items.
- For deliveries of stockpile materials, any materials specified in the work order will be considered late unless the Department agrees to a new time and date offered by the contractor no less than 24 hr.

before the work order's time and date of delivery. If advanced notice is not approved and the Department has to obtain material through another source, the Department could seek damages for any costs exceeding the Contract bid items.

The Department may suspend damages when weather impacts the delivery of the materials.

Providing material that does not meet specification requirements does not constitute delivery, and applicable damages may continue to accrue until the Contractor delivers materials in full compliance with the specifications to the designated delivery location. The Department reserves the right to require replacement materials or a refund if materials not meeting specifications are discovered after the payment has been made.

8.7. **Default of Contract.**

8.7.1. **Declaration of Default**. The Engineer may declare the Contractor to be in default of the Contract if the Contractor:

- fails to complete a work order within the number of days specified;
- is uncooperative, disruptive, or threatening;
- fails to perform the work in conformance with the Contract requirements;
- neglects or refuses to remove and replace rejected materials or unacceptable work;
- discontinues the prosecution of the work without the Engineer's approval;
- makes an unauthorized assignment;
- fails to resume work that has been discontinued within a reasonable number of days after notice to do so;
- fails to conduct the work in an acceptable manner; or
- commits fraud or other unfixable conduct as determined by the Department.

If any of these conditions occur, the Engineer will give notice in writing to the Contractor of the intent to declare the Contractor in default. If the Contractor does not proceed as directed within 10 days after the notice, the Department will provide written notice to the Contractor to declare the Contractor to be in default of the Contract. If the Contractor provides the Department written notice of voluntary default of the Contract, the Department may waive the 10-day notice of intent to declare the Contractor in default and immediately provide written notice of default to the Contractor. Calendar day charges will continue until completion of the Contract. A default may result in the application of remedial actions by the Department.

Reference 43 TAC § 9.24, "Performance Review Committee and Actions."

The Department may suspend work in accordance with Section 10.8.1., "Prosecution of Work," to investigate apparent fraud or other unfixable conduct before defaulting the Contractor. The Contractor may be subject to sanctions under the TAC.

The Department will determine the most expeditious and efficient way to obtain the material and recover damages from the Contractor. The Department will hold all money earned but not disbursed by the date of default. All costs and charges incurred by the Department as a result of the default, including the cost of completing the work under the Contract, costs for other work deemed necessary, and any applicable liquidated damages will be deducted from money due the Contractor for completed work. In case the costs incurred by the Department are less than the amount that would have been payable under the Contract if the work had been completed by the Contractor, the Department will be entitled to retain the difference.

8.7.2. **Wrongful Default**. If it is determined after the Contractor is declared in default, that the Contractor was not in default, the rights and obligations of all parties will be the same as if termination had been issued for the convenience of the public as provided in Section 10.8.8., "Termination of Contract."

8.8. **Termination of Contract**. The Department may terminate the Contract in whole or in part whenever:

- the Contractor is prevented from proceeding with the work as a direct result of an executive order of the President of the United States or the Governor of the State,
- the Contractor is prevented from proceeding with the work due to a national emergency, or when the work to be performed under the Contract is stopped, directly or indirectly, because of the freezing or diversion of materials, equipment, or labor as the result of an order or a proclamation of the President of the United States,
- the Contractor is prevented from proceeding with the work due to an order of any federal authority,
- the Contractor is prevented from proceeding with the work by reason of a preliminary, special, or permanent restraining court order where the issuance of the restraining order is primarily caused by acts or omissions of persons or agencies other than the Contractor, or
- the Department determines that termination of the Contract is in the best interest of the State or the public.

8.8.1. **Procedures and Submittals.** The Department will provide written notice to the Contractor of termination specifying the extent of the termination and the effective date. Upon notice, immediately proceed in accordance with the following:

- stop work as specified in the notice,
- place no further orders for materials,
- complete performance of the work not terminated, and
- settle all outstanding liabilities and termination settlement proposals resulting from the termination of the Contract.

8.8.2. **Settlement Provisions.** The Engineer will prepare a change order that reduces the affected quantities of work and adds acceptable costs for termination. No claim for loss of anticipated profits will be considered. The Department will pay reasonable and verifiable termination costs including:

- all work completed at the unit bid price,
- expenses necessary for the preparation of termination settlement proposals and support data, and
- other expenses acceptable to the Department.

9. MEASUREMENT AND PAYMENT

9.1. **Measurement of Quantities**. The Engineer or designated representative will measure all completed work orders using United States standard measures, unless otherwise specified.

9.1.1. **Hauling on Routes Accessible to the Traveling Public**. For payment purposes on haul routes accessible to the traveling public:

- if the gross vehicle weight is less than the maximum allowed by state law, including applicable yearly weight tolerance permit, the net weight of the load will be determined by deducting the tare weight of the vehicle from the gross weight, or
- if the gross vehicle weight is more than the maximum allowed by state law, including applicable yearly weight tolerance permit, the net weight of the load will be determined by deducting the tare weight of the vehicle from the maximum gross weight allowed.

9.1.2. **Hauling on Routes Not Accessible to the Traveling Public**. For payment purposes on haul routes that are not accessible to the traveling public where advance permission is obtained in writing from the Engineer:

- if the gross vehicle weight is less than the maximum allowed by the Engineer, including applicable yearly weight tolerance permit, the net weight of the load will be determined by deducting the tare weight of the vehicle from the gross weight, or
- if the gross vehicle weight is more than the maximum allowed by the Engineer, the net weight of the load will be determined by deducting the tare weight of the vehicle from the maximum gross weight allowed.

9.2. **Scope of Payment.** Payment of the Contract unit price is full compensation for providing all approved materials under the Contract. Until final acceptance in accordance with Section 5.4., "Work Order Final Acceptance," the Contractor assumes liability for completing all work orders in conformance with material specifications.

9.3. **Progress Payments**. The Engineer will prepare a monthly estimate of the quantities of approved materials received. Payment of the monthly estimate is determined at the Contract item prices less any withholdings or deductions in conformance with the Contract. Progress payments may be withheld for failure to comply with the Contract.

It is the Department's intent to pay a Contractor for work through the last working day of the month; however, the use of early cut-off dates for monthly estimates is a project management practice to manage workload at the Area Office level. Approval for using early cut-off dates is at the District's discretion. The earliest cut-off date for estimates is the 25th of the month.

9.4. **Payment for Extra Work.** Payment for extra work directed, performed, and accepted will be made in accordance with Section 10.4.3., "Changes in the Work." Payment for extra work will be established by agreed unit prices. Agreed unit prices are unit prices that include markups and are comparable to recent bid prices for the same materials.

9.5. **Demurrage**. Demurrage is defined as a delay in delivery of material caused by the Department. Trucks may be held for up to 2 hr. at the jobsite at no additional expense to the Department. The Contractor's driver will report to the Engineer or designated representative at the time of arrival at the final delivery location and obtain a signature documenting the date and time. If not possible to obtain a signature, photographic documentation of the delivery location gate or marked roadway location with time and date stamp could be used. Written documentation of arrival will be used when calculating demurrage charges and included on an invoice submitted to the managing office. The demurrage charge will be invoiced in 15-min. increments, rounded down to the nearest whole increment. The Contractor has the option to provide documentation to charge a Demurrage Rate per truck per 15-min. increment. Documentation supporting the demurrage rate per truck will be required. Notify the Engineer or designated representative with any concerns or questions about demurrage charges.

9.6. **Return, Cancellation, and Restocking Fee.** The Department may request that the Contractor accept return of merchandise that meets specifications and has already been delivered, or that Contractor cancel an order before delivery. If the Contractor does not agree to the Department's request, both parties must attempt to resolve the matter. The Contractor may request a reasonable restocking charge, and the Department may pay a restocking charge (no more than 10% of the cost of the item unless the Contractor can justify a higher cost for materials that are designed specifically for the work order) if determined that the charge is justifiable. However, the Department will not pay restocking or other fees for cancellations requested before shipment by the Contractor unless the material is a product specific design.

9.7. **Retainage.** The Department will not withhold retainage on the Contractor.

9.8. **Payment Provisions for Suppliers.** These requirements apply to all tiers of suppliers. Incorporate the provisions of this Section into all material purchase agreements.

Pay suppliers for work performed within 10 days after receiving payment from the Department.

Pay any retainage on a supplier's work within 10 days after satisfactory completion of all of the supplier's work.

For the purpose of this Section, satisfactory completion is accomplished when:

- the supplier has fulfilled the Contract requirements of both the Department and the subcontract for the work, including the submittal of all information required by the Contract and the Department, and
- the work done by the supplier has been inspected, approved, and paid by the Department.

Provide a certification of prompt payment to certify that all suppliers were paid from the previous month's payments and retainage was released for those whose work is complete. Submit the certification in the manner prescribed by the Department each month and the month following the month when final acceptance occurred.

9.9. **Work Order Final Payments.** Each work order will be reconciled for final quantities and final payment as they are completed.

Special Specification 8006
Superpave Mixtures (Materials Only)

1. DESCRIPTION

Provide a hot-mix asphalt (HMA) pavement composed of a, Superpave (SP) mixture of aggregate and asphalt binder mixed hot in a mixing plant.

2. MATERIALS

Furnish uncontaminated materials of uniform quality that meet the requirements of the plans and specifications.

Notify the Engineer of all material sources and before changing any material source or formulation. The Engineer will verify that the specification requirements are met when the Contractor makes a source or formulation change and may require a new laboratory mixture design, trial batch, or both. The Engineer may sample and test project materials at any time during the project to verify specification compliance in accordance with Item 6, "Control of Materials."

2.1. Aggregate. Furnish aggregates from sources that conform to the requirements shown in Table 1 and as specified in this Section. Aggregate requirements in this Section, including those shown in Table 1, may be modified or eliminated when shown on the plans. Additional aggregate requirements may be specified when shown on the plans. Provide aggregate stockpiles that meet the definitions in this Section for coarse, intermediate, or fine aggregate. Aggregate from reclaimed asphalt pavement (RAP) is not required to meet Table 1 requirements unless otherwise shown on the plans. Supply aggregates that meet the definitions in Tex-100-E for crushed gravel or crushed stone. The Engineer will designate the plant or the quarry as the sampling location. Provide samples from materials produced for the project. The Engineer will establish the Surface Aggregate Classification (SAC) and perform Los Angeles abrasion, magnesium sulfate soundness, and Micro-Deval tests. Perform all other aggregate quality tests listed in Table 1. Document all test results on the mixture design report. The Engineer may perform tests on independent or split samples to verify Contractor test results. Stockpile aggregates for each source and type separately. Determine aggregate gradations for mixture design and production testing based on the washed sieve analysis given in Tex-200-F, Part II.

2.1.1. Coarse Aggregate. Coarse aggregate stockpiles must have no more than 20% material passing the No. 8 sieve. Aggregates from sources listed in the Department's *Bituminous Rated Source Quality Catalog* (BRSQC) are preapproved for use. Use only the rated values for hot-mix listed in the BRSQC. Rated values for surface treatment (ST) do not apply to coarse aggregate sources used in hot-mix asphalt.

For sources not listed on the Department's BRSQC:

- build an individual stockpile for each material;
- request the Department test the stockpile for specification compliance; and
- once approved, do not add material to the stockpile unless otherwise approved.

Provide aggregate from non-listed sources only when tested by the Engineer and approved before use. Allow 30 calendar days for the Engineer to sample, test, and report results for non-listed sources.

Provide coarse aggregate with at least the minimum SAC shown on the plans. SAC requirements only apply to aggregates used on the surface of travel lanes. SAC requirements apply to aggregates used on surfaces

other than travel lanes when shown on the plans. The SAC for sources on the Department's *Aggregate Quality Monitoring Program* (AQMP) (Tex-499-A) is listed in the BRSQC.

2.1.1.1. Blending Class A and Class B Aggregates. Class B aggregate meeting all other requirements in Table 1 may be blended with a Class A aggregate to meet requirements for Class A materials, unless otherwise shown on the plans. Ensure that at least 50% by weight, or volume if required, of the material retained on the No. 4 sieve comes from the Class A aggregate source when blending Class A and B aggregates to meet a Class A requirement unless otherwise shown on the plans. Blend by volume if the bulk specific gravities of the Class A and B aggregates differ by more than 0.300. Coarse aggregate from RAP and Recycled Asphalt Shingles (RAS) will be considered as Class B aggregate for blending purposes.

The Engineer may perform tests at any time during production, when the Contractor blends Class A and B aggregates to meet a Class A requirement, to ensure that at least 50% by weight, or volume if required, of the material retained on the No. 4 sieve comes from the Class A aggregate source. The Engineer will use the Department's mix design template, when electing to verify conformance, to calculate the percent of Class A aggregate retained on the No. 4 sieve by inputting the bin percentages shown from readouts in the control room at the time of production and stockpile gradations measured at the time of production. The Engineer may determine the gradations based on either washed or dry sieve analysis from samples obtained from individual aggregate cold feed bins or aggregate stockpiles. The Engineer may perform spot checks using the gradations supplied by the Contractor on the mixture design report as an input for the template; however, a failing spot check will require confirmation with a stockpile gradation determined by the Engineer.

2.1.1.2. Micro-Deval Abrasion. The Engineer will perform a minimum of one Micro-Deval abrasion test in accordance with Tex-461-A for each coarse aggregate source used in the mixture design that has a Rated Source Soundness Magnesium (RSSM) loss value greater than 15 as listed in the BRSQC. The Engineer will perform testing before the start of production and may perform additional testing at any time during production. The Engineer may obtain the coarse aggregate samples from each coarse aggregate source or may require the Contractor to obtain the samples. The Engineer may waive all Micro-Deval testing based on a satisfactory test history of the same aggregate source.

The Engineer will estimate the magnesium sulfate soundness loss for each coarse aggregate source, when tested, using the following formula:

$$Mg_{est.} = (RSSM)(MD_{act.}/RSMD)$$

where:
$Mg_{est.}$ = magnesium sulfate soundness loss
$MD_{act.}$ = actual Micro-Deval percent loss
RSMD = Rated Source Micro-Deval

When the estimated magnesium sulfate soundness loss is greater than the maximum magnesium sulfate soundness loss specified, the coarse aggregate source will not be allowed for use unless otherwise approved. The Engineer will consult the Soils and Aggregates Section of the Materials and Tests Division, and additional testing may be required before granting approval.

2.1.2. Intermediate Aggregate. Aggregates not meeting the definition of coarse or fine aggregate will be defined as intermediate aggregate. Supply intermediate aggregates, when used that are free from organic impurities. The Engineer may test the intermediate aggregate in accordance with Tex-408-A to verify the material is free from organic impurities. Supply intermediate aggregate from coarse aggregate sources, when used that meet the requirements shown in Table 1 unless otherwise approved.

Test the stockpile if 10% or more of the stockpile is retained on the No. 4 sieve, and verify that it meets the requirements in Table 1 for crushed face count (Tex-460-A) and flat and elongated particles (Tex-280-F).

2.1.3. **Fine Aggregate**. Fine aggregates consist of manufactured sands, screenings, and field sands. Fine aggregate stockpiles must meet the gradation requirements in Table 2. Supply fine aggregates that are free from organic impurities. The Engineer may test the fine aggregate in accordance with Tex-408-A to verify the material is free from organic impurities. Unless otherwise shown on the plans, up to 10% of the total aggregate may be field sand or other uncrushed fine aggregate. Use fine aggregate, with the exception of field sand, from coarse aggregate sources that meet the requirements shown in Table 1 unless otherwise approved.

Test the stockpile if 10% or more of the stockpile is retained on the No. 4 sieve and verify that it meets the requirements in Table 1 for crushed face count (Tex-460-A) and flat and elongated particles (Tex-280-F).

Table 1
Aggregate Quality Requirements

Property	Test Method	Requirement
Coarse Aggregate		
SAC	Tex-499-A (AQMP)	As shown on the plans
Deleterious material, %, Max	Tex-217-F, Part I	1.0
Decantation, %, Max	Tex-217-F, Part II	1.5
Micro-Deval abrasion, %	Tex-461-A	Note 1
Los Angeles abrasion, %, Max	Tex-410-A	35[2]
Magnesium sulfate soundness, 5 cycles, %, Max	Tex-411-A	25[3]
Crushed face count,[4] %, Min	Tex-460-A, Part I	85
Flat and elongated particles @ 5:1, %, Max	Tex-280-F	10
Fine Aggregate		
Linear shrinkage, %, Max	Tex-107-E	3
Sand equivalent, %, Min	Tex-203-F	45

1. Used to estimate the magnesium sulfate soundness loss in accordance with Section 8006.2.1.1.2., "Micro-Deval Abrasion."
2. For base mixtures defined in Section 8006.2.7., "Recycled Materials," the Los Angeles abrasion may be increased to a maximum of 40%.
3. For base mixtures defined in Section 8006.2.7., "Recycled Materials," the magnesium sulfate soundness, five cycles, may be increased to a maximum of 30%.
4. Only applies to crushed gravel.

Table 2
Gradation Requirements for Fine Aggregate

Sieve Size	% Passing by Weight or Volume
3/8"	100
#8	70–100
#200	0–30

2.2. **Mineral Filler**. Mineral filler consists of finely divided mineral matter such as agricultural lime, crusher fines, hydrated lime, or fly ash. Mineral filler is allowed unless otherwise shown on the plans. Use no more than 2% hydrated lime or fly ash unless otherwise shown on the plans. Use no more than 1% hydrated lime if a substitute binder is used unless otherwise shown on the plans or allowed. Test all mineral fillers except hydrated lime and fly ash in accordance with Tex-107-E to ensure specification compliance. The plans may require or disallow specific mineral fillers. Provide mineral filler, when used, that:

- is sufficiently dry, free-flowing, and free from clumps and foreign matter as determined by the Engineer;
- does not exceed 3% linear shrinkage when tested in accordance with Tex-107-E; and
- meets the gradation requirements in Table 3, unless otherwise shown on the plans.

Table 3
Gradation Requirements for Mineral Filler

Sieve Size	% Passing by Weight or Volume
#8	100
#200	55–100

2.3. **Baghouse Fines**. Fines collected by the baghouse or other dust-collecting equipment may be reintroduced into the mixing drum.

2.4. Asphalt Binder. Furnish the type and grade of performance-graded (PG) asphalt specified on the plans.

2.5.

2.6. Additives. Use the type and rate of additive specified when shown on the plans. Additives that facilitate mixing, compaction, or improve the quality of the mixture are allowed when approved. Provide the Engineer with documentation such as the bill of lading showing the quantity of additives used in the project unless otherwise directed.

2.6.1. Lime and Liquid Antistripping Agent. When lime or a liquid antistripping agent is used, add in accordance with Item 301, "Asphalt Antistripping Agents." Do not add lime directly into the mixing drum of any plant where lime is removed through the exhaust stream unless the plant has a baghouse or dust collection system that reintroduces the lime into the drum.

2.6.2. Compaction Aid. Compaction Aid is defined as a chemical warm mix additive that is used to produce an asphalt mixture at a discharge temperature greater than 275°F.

Compaction Aid is allowed for use on all projects and is required when shown on the plans.

2.7. Recycled Materials. Use of RAP and RAS is permitted unless otherwise shown on the plans. Use of RAS is restricted to only intermediate and base mixes unless otherwise shown on the plans. Do not exceed the maximum allowable percentages of RAP and RAS shown in Table 4. The allowable percentages shown in Table 4 may be decreased or increased when shown on the plans. Determine the asphalt binder content and gradation of the RAP and RAS stockpiles for mixture design purposes in accordance with Tex-236-F, Part I. The Engineer may verify the asphalt binder content of the stockpiles at any time during production. Perform other tests on RAP and RAS when shown on the plans. Asphalt binder from RAP and RAS is designated as recycled asphalt binder. Calculate and ensure that the ratio of the recycled asphalt binder to total binder does not exceed the percentages shown in Table 5 during mixture design and HMA production when RAP or RAS is used. Use a separate cold feed bin for each stockpile of RAP and RAS during HMA production.

Surface, intermediate, and base mixes referenced in Tables 4 and 5 are defined as follows:

- Surface. The final HMA lift placed at the top of the pavement structure or placed directly below mixtures produced in accordance with Items 316, 342, 347, or 348;
- Intermediate. Mixtures placed below an HMA surface mix and less than or equal to 8.0 in. from the riding surface; and
- Base. Mixtures placed greater than 8.0 in. from the riding surface. Unless otherwise shown on the plans, mixtures used for bond breaker are defined as base mixtures.

2.7.1. RAP. RAP is salvaged, milled, pulverized, broken, or crushed asphalt pavement. Fractionated RAP is defined as a stockpile that contains RAP material with a minimum of 95.0% passing the 3/8-in. or 1/2-in. sieve, before burning in the ignition oven, unless otherwise approved. The Engineer may allow the Contractor to use an alternate to the 3/8-in. or 1/2-in. screen to fractionate the RAP.

Use of Contractor-owned RAP including HMA plant waste is permitted unless otherwise shown on the plans. Department-owned RAP stockpiles are available for the Contractor's use when the stockpile locations are shown on the plans. If Department-owned RAP is available for the Contractor's use, the Contractor may use Contractor-owned fractionated RAP and replace it with an equal quantity of Department-owned RAP. Department-owned RAP generated through required work on the Contract is available for the Contractor's use when shown on the plans. Perform any necessary tests to ensure Contractor- or Department-owned RAP is appropriate for use. The Department will not perform any tests or assume any liability for the quality of the Department-owned RAP unless otherwise shown on the plans. The Contractor will retain ownership of RAP generated on the project when shown on the plans.

Do not use Department- or Contractor-owned RAP contaminated with dirt or other objectionable materials. Do not use Department- or Contractor-owned RAP if the decantation value exceeds 5% and the plasticity index is greater than eight. Test the stockpiled RAP for decantation in accordance with Tex-406-A, Part I. Determine the plasticity index in accordance with Tex-106-E if the decantation value exceeds 5%. The decantation and plasticity index requirements do not apply to RAP samples with asphalt removed by extraction or ignition.

Do not intermingle Contractor-owned RAP stockpiles with Department-owned RAP stockpiles. Remove unused Contractor-owned RAP material from the project site upon completion of the project. Return unused Department-owned RAP to the designated stockpile location.

Table 4
Maximum Allowable Amounts of RAP[1]

Maximum Allowable Fractionated RAP (%)		
Surface	Intermediate	Base
20.0	30.0	35.0

1. Must also meet the recycled binder to total binder ratio shown in Table 5.

2.7.2. RAS. Use of post-manufactured RAS or post-consumer RAS (tear-offs) is not permitted in surface mixtures unless otherwise shown on the plans. RAS may be used in intermediate and base mixtures unless otherwise shown on the plans. Up to 3% RAS may be used separately or as a replacement for fractionated RAP in accordance with Table 4 and Table 5. RAS is defined as processed asphalt shingle material from manufacturing of asphalt roofing shingles or from re-roofing residential structures. Post-manufactured RAS is processed manufacturer's shingle scrap by-product. Post-consumer RAS is processed shingle scrap removed from residential structures. Comply with all regulatory requirements stipulated for RAS by the TCEQ. RAS may be used separately or in conjunction with RAP.

Process the RAS by ambient grinding or granulating such that 100% of the particles pass the 3/8 in. sieve when tested in accordance with Tex-200-F, Part I. Perform a sieve analysis on processed RAS material before extraction (or ignition) of the asphalt binder.

Add sand meeting the requirements of Table 1 and Table 2 or fine RAP to RAS stockpiles if needed to keep the processed material workable. Any stockpile that contains RAS will be considered a RAS stockpile and be limited to no more than 3.0% of the HMA mixture in accordance with Table 4.

Certify compliance of the RAS with DMS-11000, "Evaluating and Using Nonhazardous Recyclable Materials Guidelines." Treat RAS as an established nonhazardous recyclable material if it has not come into contact with any hazardous materials. Use RAS from shingle sources on the Department's MPL. Remove substantially all materials before use that are not part of the shingle, such as wood, paper, metal, plastic, and felt paper. Determine the deleterious content of RAS material for mixture design purposes in accordance with Tex-217-F, Part III. Do not use RAS if deleterious materials are more than 0.5% of the stockpiled RAS unless otherwise approved. Submit a sample for approval before submitting the mixture design. The Department will perform the testing for deleterious material of RAS to determine specification compliance.

2.8. Substitute Binders. Unless otherwise shown on the plans, the Contractor may use a substitute PG binder listed in Table 5 instead of the PG binder originally specified if using recycled materials, and if the substitute PG binder and mixture made with the substitute PG binder meet the following:

- the substitute binder meets the specification requirements for the substitute binder grade in accordance with Section 300.2.10., "Performance-Graded Binders;" and
- the mixture has less than 10.0 mm of rutting on the Hamburg Wheel test (Tex-242-F) after the number of passes required for the originally specified binder. Use of substitute PG binders may only be allowed at the discretion of the Engineer if the Hamburg Wheel test results are between 10.0 mm and 12.5 mm.

Table 5
Allowable Substitute PG Binders and Maximum Recycled Binder Ratios

Originally Specified PG Binder	Allowable Substitute PG Binder for Surface Mixes	Allowable Substitute PG Binder for Intermediate and Base Mixes	Maximum Ratio of Recycled Binder[1] to Total Binder (%)		
			Surface	Intermediate	Base
76-22[4,5]	70-22	70-22	15.0	25.0	30.0
70-22[2,5]	N/A	64-22	15.0	25.0	30.0
64-22[2,3]	N/A	N/A	15.0	25.0	30.0
76-28[4,5]	70-28	70-28	15.0	25.0	30.0
70-28[2,5]	N/A	64-28	15.0	25.0	30.0
64-28[2,3]	N/A	N/A	15.0	25.0	30.0

1. Combined recycled binder from RAP and RAS. RAS is not permitted in surface mixtures unless otherwise shown on the plans.
2. Binder substitution is not allowed for surface mixtures.
3. Binder substitution is not allowed for intermediate and base mixtures.
4. Use no more than 15.0% recycled binder in surface mixtures when using this originally specified PG binder.
5. Use no more than 25.0% recycled binder when using this originally specified PG binder for intermediate mixtures. Use no more than 30.0% recycled binder when using this originally specified PG binder for base mixtures.

3. EQUIPMENT

Provide required or necessary equipment in accordance with Item 320, "Equipment for Asphalt Concrete Pavement."

4. CONSTRUCTION

Produce the specified paving mixture. In addition to tests required by the specification, Contractors may perform other QC tests as deemed necessary.

4.1. Certification. Personnel certified by the Department-approved hot-mix asphalt certification program must conduct all mixture designs, sampling, and testing in accordance with Table 6. Supply the Engineer with a list of certified personnel and copies of their current certificates before beginning production and when personnel changes are made. Provide a mixture design developed and signed by a Level 2 certified specialist. Provide Level 1A certified specialists at the plant during production operations.

Table 6
Test Methods, Test Responsibility, and Minimum Certification Levels

Test Description	Test Method	Contractor	Engineer	Level[1]
1. Aggregate and Recycled Material Testing				
Sampling	Tex-221-F	✓	✓	1A/AGG101
Dry sieve	Tex-200-F, Part I	✓	✓	1A/AGG101
Washed sieve	Tex-200-F, Part II	✓	✓	1A/AGG101
Deleterious material	Tex-217-F, Parts I & III	✓	✓	AGG101
Decantation	Tex-217-F, Part II	✓	✓	AGG101
Los Angeles abrasion	Tex-410-A		✓	TxDOT
Magnesium sulfate soundness	Tex-411-A		✓	TxDOT
Micro-Deval abrasion	Tex-461-A		✓	AGG101
Crushed face count	Tex-460-A	✓	✓	AGG101
Flat and elongated particles	Tex-280-F	✓	✓	AGG101
Linear shrinkage	Tex-107-E	✓	✓	AGG101
Sand equivalent	Tex-203-F	✓	✓	AGG101
Bulk specific gravity	Tex-201-F	✓	✓	AGG101
Unit weight	Tex-404-A	✓	✓	AGG101
Organic impurities	Tex-408-A	✓	✓	AGG101
2. Asphalt Binder & Tack Coat Sampling				
Asphalt binder sampling	Tex-500-C, Part II	✓	✓	1A/1B
Tack coat sampling	Tex-500-C, Part III	✓	✓	1A/1B
3. Mix Design & Verification				
Design and JMF changes	Tex-204-F	✓	✓	2
Mixing	Tex-205-F	✓	✓	2
Molding (SGC)	Tex-241-F	✓	✓	1A
Laboratory-molded density	Tex-207-F, Parts I & VI	✓	✓	1A
Rice gravity	Tex-227-F, Part II	✓	✓	1A
Ignition oven correction factors[2]	Tex-236-F, Part II	✓	✓	2
Indirect tensile strength	Tex-226-F	✓	✓	1A
Hamburg Wheel test	Tex-242-F	✓	✓	1A
Boil test	Tex-530-C	✓	✓	1A
4. Production Testing				
Selecting production random numbers	Tex-225-F, Part I		✓	1A
Mixture sampling	Tex-222-F	✓	✓	1A/1B
Molding (SGC)	Tex-241-F	✓	✓	1A
Laboratory-molded density	Tex-207-F, Parts I & VI	✓	✓	1A
Rice gravity	Tex-227-F, Part II	✓	✓	1A
Gradation & asphalt binder content[2]	Tex-236-F, Part I	✓	✓	1A
Control charts	Tex-233-F	✓	✓	1A
Moisture content	Tex-212-F, Part II	✓	✓	1A/AGG101
Hamburg Wheel test	Tex-242-F	✓	✓	1A
Micro-Deval abrasion	Tex-461-A		✓	AGG101
Boil test	Tex-530-C	✓	✓	1A
Abson recovery	Tex-211-F		✓	TxDOT
5. Placement Testing				
Selecting placement random numbers	Tex-225-F, Part II		✓	1B
Trimming roadway cores	Tex-251-F, Parts I & II	✓	✓	1A/1B
In-place air voids	Tex-207-F, Parts I & VI	✓	✓	1A
In-place density (nuclear method)	Tex-207-F, Part III	✓		1B
Establish rolling pattern	Tex-207-F, Part IV	✓		1B
Control charts	Tex-233-F	✓	✓	1A
Ride quality measurement	Tex-1001-S	✓	✓	Note 3
Segregation (density profile)	Tex-207-F, Part V	✓	✓	1B
Longitudinal joint density	Tex-207-F, Part VII	✓	✓	1B
Thermal profile	Tex-244-F	✓	✓	1B
Shear Bond Strength Test	Tex-249-F		✓	TxDOT

1. Level 1A, 1B, AGG101, and 2 are certification levels provided by the Hot Mix Asphalt Center certification program.
2. Refer to Section 8006.4.9.2.3., "Production Testing," for exceptions to using an ignition oven.
3. Profiler and operator are required to be certified at the Texas A&M Transportation Institute facility when Surface Test Type B is specified.

4.2. **Reporting and Responsibilities**. Use Department-provided templates to record and calculate all test data, pertaining to the mixture design. Obtain the current version of the templates at http://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/forms/site-manager.html or from the Engineer. The maximum allowable time for the Contractor and Engineer to exchange test data is as given in Table 7 unless otherwise approved. The Engineer will immediately report to the Contractor any test result that requires suspension of production or placement or that fails to meet the specification requirements.

Table 7
Reporting Schedule

Description	Reported By	Reported To	To Be Reported Within
Production Quality Control			
Gradation[1]	Contractor	Engineer	1 working day of completion of the sublot
Asphalt binder content[1]			
Laboratory-molded density[2]			
Moisture content[3]			
Boil test[3]			
Production Quality Assurance			
Gradation[3]	Engineer	Contractor	1 working day of completion of the sublot
Asphalt binder content[3]			
Laboratory-molded density[1]			
Hamburg Wheel test[4]			
Boil test[3]			
Binder tests[4]			
Placement Quality Control			
In-place air voids[2]	Contractor	Engineer	1 working day of completion of the lot
Segregation[1]			
Longitudinal joint density[1]			
Thermal profile[1]			
Placement Quality Assurance			
In-place air voids[1]	Engineer	Contractor	1 working day after receiving the trimmed cores[5]
Segregation[3]			1 working day of completion of the lot
Longitudinal joint density[3]			
Thermal profile[3]			
Aging ratio[4]			
Payment adjustment summary	Engineer	Contractor	2 working days of performing all required tests and receiving Contractor test data

1. These tests are required on every sublot.
2. Optional test. When performed on split samples, report the results as soon as they become available.
3. To be performed at the frequency specified in Table 17 or as shown on the plans.
4. To be reported as soon as the results become available.
5. Two days are allowed if cores cannot be dried to constant weight within 1 day.

4.3. **Mixture Design**.

4.3.1. **Design Requirements**. Use the SP design procedure provided in Tex-204-F, unless otherwise shown on the plans. Design the mixture to meet the requirements listed in Tables 1, 2, 3, 4, 5, 8, 9, 10, and 11.

Design the mixture at 50 gyrations (Ndesign). Use a target laboratory-molded density of 96.0% to design the mixture; however, adjustments can be made to the Ndesign value as noted in Table 10. The Ndesign level may be reduced to at least 35 gyrations at the Contractor's discretion.

Use an approved laboratory from the Department's MPL to perform the Hamburg Wheel test and provide results with the mixture design, or provide the laboratory mixture and request that the Department perform the Hamburg Wheel test. The Engineer will be allowed 10 working days to provide the Contractor with Hamburg Wheel test results on the laboratory mixture design.

The Engineer will provide the mixture design when shown on the plans. The Contractor may submit a new mixture design at any time during the project. The Engineer will verify and approve all mixture designs (JMF1) before the Contractor can begin production.

The aggregate gradation may pass below or through the reference zone shown in Table 9 unless otherwise shown on the plans. Design a mixture with a gradation that has stone-on-stone contact and passes below the reference zone shown in Table 9 when shown on the plans. Verify stone-on-stone contact using the method given in the SP design procedure in Tex-204-F, Part IV.

Provide the Engineer with a mixture design report using the Department-provided template. Include the following items in the report:

- the combined aggregate gradation, source, specific gravity, and percent of each material used;
- asphalt binder content and aggregate gradation of RAP and RAS stockpiles;
- the Ndesign level used;
- results of all applicable tests;
- the mixing and molding temperatures;
- the signature of the Level 2 person or persons that performed the design;
- the date the mixture design was performed; and
- a unique identification number for the mixture design.

Table 8
Master Gradation Limits (% Passing by Weight or Volume) and VMA Requirements

Sieve Size	SP-B Intermediate	SP-C Surface	SP-D Fine Mixture
2"	–	–	–
1-1/2"	100.0[1]	–	–
1"	98.0–100.0	100.0[1]	–
3/4"	90.0–100.0	98.0–100.0	100.0[1]
1/2"	Note[2]	90.0–100.0	98.0–100.0
3/8"	–	Note[2]	90.0–100.0
#4	23.0–90.0	28.0–90.0	32.0–90.0
#8	23.0–34.6	28.0–37.0	32.0–40.0
#16	2.0–28.3	2.0–31.6	2.0–37.6
#30	2.0–20.7	2.0–23.1	2.0–27.5
#50	2.0–13.7	2.0–15.5	2.0–18.7
#200	2.0–8.0	2.0–10.0	2.0–10.0
Design VMA, % Minimum			
–	14.0	15.0	16.0
Production (Plant-Produced) VMA, % Minimum			
–	13.5	14.5	15.5

1. Defined as maximum sieve size. No tolerance allowed.
2. Must retain at least 10% cumulative.

Table 9
Reference Zones (% Passing by Weight or Volume)

Sieve Size	SP-B Intermediate	SP-C Surface	SP-D Fine Mixture
2"	–	–	–
1-1/2"	–	–	–
1"	–	–	–
3/4"	–	–	–
1/2"	–	–	–
3/8"	–	–	–
#4	–	–	–
#8	34.6–34.6	39.1–39.1	47.2–47.2
#16	22.3–28.3	25.6–31.6	31.6–37.6
#30	16.7–20.7	19.1–23.1	23.5–27.5
#50	13.7–13.7	15.5–15.5	18.7–18.7
#200	–	–	–

Table 10
Laboratory Mixture Design Properties

Mixture Property	Test Method	Requirement
Target laboratory-molded density, %	Tex-207-F	96.0
Design gyrations (Ndesign)	Tex-241-F	50[1]
Indirect tensile strength (dry), psi	Tex-226-F	85–200[2]
Dust/asphalt binder ratio[3]	–	0.6–1.4
Boil test[4]	Tex-530-C	–

1. Adjust within a range of 35–100 gyrations when shown on the plans or specification or mutually agreed between the Engineer and Contractor.
2. The Engineer may allow the IDT strength to exceed 200 psi if the corresponding Hamburg Wheel rut depth is greater than 3.0 mm and less than 12.5 mm.
3. Defined as % passing #200 sieve divided by asphalt binder content.
4. Used to establish baseline for comparison to production results. May be waived when approved.

Table 11
Hamburg Wheel Test Requirements

High-Temperature Binder Grade	Test Method	Minimum # of Passes @ 12.5 mm[1] Rut Depth, Tested @ 50°C
PG 64 or lower	Tex-242-F	10,000[2]
PG 70		15,000[3]
PG 76 or higher		20,000

1. When the rut depth at the required minimum number of passes is less than 3 mm, the Engineer may require the Contractor to lower the Ndesign level to at least 35 gyrations.
2. May be decreased to at least 5,000 passes when shown on the plans.
3. May be decreased to at least 10,000 passes when shown on the plans.

4.3.2. **Storage and Heating of Materials.** Do not heat the asphalt binder above the temperatures specified in Item 300, "Asphalts, Oils, and Emulsions," or outside the manufacturer's recommended values. Provide the Engineer with daily records of asphalt binder and hot-mix asphalt discharge temperatures (in legible and discernible increments) in accordance with Item 320, "Equipment for Asphalt Concrete Pavement," unless otherwise directed. Do not store mixture for a period long enough to affect the quality of the mixture, nor in any case longer than 12 hr. unless otherwise approved.

4.3.3. **Mixing and Discharge of Materials.** Notify the Engineer of the target discharge temperature and produce the mixture within 25°F of the target. Monitor the temperature of the material in the truck before shipping to ensure that it does not exceed the maximum production temperatures listed in Table 13 (or 275°F for WMA). The Department will not pay for or allow placement of any mixture produced above the maximum production temperatures listed in Table 13.

Table 13
Maximum Production Temperature

High-Temperature Binder Grade[1]	Maximum Production Temperature
PG 64	325˚F
PG 70	335˚F
PG 76	345˚F

1. The high-temperature binder grade refers to the high-temperature grade of the virgin asphalt binder used to produce the mixture.

Produce WMA within the target discharge temperature range of 215°F and 275°F when WMA is required. Take corrective action any time the discharge temperature of the WMA exceeds the target discharge range. The Engineer may suspend production operations if the Contractor's corrective action is not successful at controlling the production temperature within the target discharge range. Note that when WMA is produced, it may be necessary to adjust burners to ensure complete combustion such that no burner fuel residue remains in the mixture.

Control the mixing time and temperature so that substantially all moisture is removed from the mixture before discharging from the plant. Determine the moisture content, if requested, by oven-drying in accordance with Tex-212-F, Part II, and verify that the mixture contains no more than 0.2% of moisture by weight. Obtain the sample immediately after discharging the mixture into the truck, and perform the test promptly.

4.4. Hauling Operations. Clean all truck beds before use to ensure that mixture is not contaminated. Use a release agent shown on the Department's MPL to coat the inside bed of the truck when necessary.

Use equipment for hauling as defined in Section 3077.4.7.3.3., "Hauling Equipment." Use other hauling equipment only when allowed.

4.4.1.1.1. Asphalt Binder Sampling. Obtain a 1-qt. sample of the asphalt binder witnessed by the Engineer for each lot of mixture produced. The Contractor will notify the Engineer when the sampling will occur. Obtain the sample at approximately the same time the mixture random sample is obtained. Sample from a port located immediately upstream from the mixing drum or pug mill and upstream from the introduction of any additives in accordance with Tex-500-C, Part II. Label the can with the corresponding lot and sublot numbers, producer, producer facility location, grade, district, date sampled, and project information including highway and CSJ. The Engineer will retain these samples for one year. The Engineer may also obtain independent samples. If obtaining an independent asphalt binder sample and upon request of the Contractor, the Engineer will split a sample of the asphalt binder with the Contractor.

At least once per project, the Engineer will collect split samples of each binder grade and source used. The Engineer will submit one split sample to MTD to verify compliance with Item 300, "Asphalts, Oils, and Emulsions" and will retain the other split sample for one year.

4.4.1.2. Individual Loads of Hot-Mix. The Engineer can reject individual truckloads of hot-mix. When a load of hot-mix is rejected for reasons other than temperature, contamination, or excessive uncoated particles, the Contractor may request that the rejected load be tested. Make this request within 4 hr. of rejection. The Engineer will sample and test the mixture. If test results are within the operational tolerances shown in Table 12, payment will be made for the load. If test results are not within operational tolerances, no payment will be made for the load.

5. MEASUREMENT

5.1. Superpave Mixtures. Hot mix will be measured by the ton of composite hot-mix, which includes asphalt, aggregate, and additives. Measure the weight on scales in accordance with Item 520, "Weighing and Measuring Equipment."

6. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under Article 8006.5.1, “Measurement,” will be paid for at the unit bid price for “Superpave Mixtures” of the mixture type, and binder specified.

Material(Pick up). Payment will be made for the type and grade specified. This price is full compensation for furnishing materials, assistance provided in sampling, loading provided vehicles, furnishing scales and labor for weighing and measuring, and equipment, labor, tools, and incidentals.

Material (Delivery). Payment will be made for the type and grade specified. This price is full compensation for furnishing materials, stockpiling, loading, hauling, delivery of materials to the roadway operation, furnishing scales and labor for weighing and measuring, and equipment, labor, tools, and incidentals.

Item 8011

Dense-Graded Hot-Mix Asphalt (Small Quantity) (Materials Only)

1. DESCRIPTION

Provide a hot-mix asphalt (HMA) material composed of a dense-graded mixture of aggregate and asphalt binder mixed hot in a mixing plant. This specification is intended for small quantity (SQ) HMA projects, typically under 5,000 tons per work order.

2. MATERIALS

Furnish uncontaminated materials of uniform quality that meet the requirements of the plans and specifications.

Notify the Engineer of all material sources and before changing any material source or formulation. The Engineer will verify that the specification requirements are met when the Contractor makes a source or formulation change, and may require a new laboratory mixture design, trial batch, or both. The Engineer may sample and test project materials at any time during the project to verify specification compliance in accordance with Item 6, "Control of Materials."

2.1. Aggregate. Furnish aggregates from sources that conform to the requirements shown in Table 1 and as specified in this Section. Aggregate requirements in this Section, including those shown in Table 1, may be modified or eliminated when shown on the plans. Additional aggregate requirements may be specified when shown on the plans. Provide aggregate stockpiles that meet the definitions in this Section for coarse, intermediate, or fine aggregate. Aggregate from reclaimed asphalt pavement (RAP) is not required to meet Table 1 requirements unless otherwise shown on the plans. Supply aggregates that meet the definitions in Tex-100-E for crushed gravel or crushed stone. The Engineer will designate the plant or the quarry as the sampling location. Provide samples from materials produced for the project. The Engineer will establish the Surface Aggregate Classification (SAC) and perform Los Angeles abrasion, magnesium sulfate soundness, and Micro-Deval tests. Perform all other aggregate quality tests listed in Table 1. Document all test results on the mixture design report. The Engineer may perform tests on independent or split samples to verify Contractor test results. Stockpile aggregates for each source and type separately. Determine aggregate gradations for mixture design and production testing based on the washed sieve analysis given in Tex-200-F, Part II.

2.1.1. Coarse Aggregate. Coarse aggregate stockpiles must have no more than 20% material passing the No. 8 sieve. Aggregates from sources listed in the Department's *Bituminous Rated Source Quality Catalog* (BRSQC) are preapproved for use. Use only the rated values for hot-mix listed in the BRSQC. Rated values for surface treatment (ST) do not apply to coarse aggregate sources used in hot-mix asphalt.

For sources not listed on the Department's BRSQC:

- build an individual stockpile for each material;
- request the Department test the stockpile for specification compliance; and
- once approved, do not add material to the stockpile unless otherwise approved.

Provide aggregate from non-listed sources only when tested by the Engineer and approved before use. Allow 30 calendar days for the Engineer to sample, test, and report results for non-listed sources.

Provide coarse aggregate with at least the minimum SAC shown on the plans. The SAC for sources on the Department's *Aggregate Quality Monitoring Program* (AQMP) (Tex-499-A) is listed in the BRSQC.

2.1.1.1. Blending Class A and Class B Aggregates. Class B aggregate meeting all other requirements in Table 1 may be blended with a Class A aggregate to meet requirements for Class A materials, unless otherwise shown on the plans. Ensure that at least 50% by weight, or volume if required, of the material retained on the No. 4 sieve comes from the Class A aggregate source when blending Class A and B aggregates to meet a Class A requirement unless otherwise shown on the plans. Blend by volume if the bulk specific gravities of the Class A and B aggregates differ by more than 0.300. Coarse aggregate from RAP will be considered as Class B aggregate for blending purposes.

The Engineer may perform tests at any time during production, when the Contractor blends Class A and B aggregates to meet a Class A requirement, to ensure that at least 50% by weight, or volume if required, of the material retained on the No. 4 sieve comes from the Class A aggregate source. The Engineer will use the Department's mix design template, when electing to verify conformance, to calculate the percent of Class A aggregate retained on the No. 4 sieve by inputting the bin percentages shown from readouts in the control room at the time of production and stockpile gradations measured at the time of production. The Engineer may determine the gradations based on either washed or dry sieve analysis from samples obtained from individual aggregate cold feed bins or aggregate stockpiles. The Engineer may perform spot checks using the gradations supplied by the Contractor on the mixture design report as an input for the template; however, a failing spot check will require confirmation with a stockpile gradation determined by the Engineer.

2.1.2. Intermediate Aggregate. Aggregates not meeting the definition of coarse or fine aggregate will be defined as intermediate aggregate. Supply intermediate aggregates, when used that are free from organic impurities.

The Engineer may test the intermediate aggregate in accordance with Tex-408-A to verify the material is free from organic impurities. Supply intermediate aggregate from coarse aggregate sources, when used that meet the requirements shown in Table 1 unless otherwise approved.

Test the stockpile if 10% or more of the stockpile is retained on the No. 4 sieve, and verify that it meets the requirements in Table 1 for crushed face count (Tex-460-A) and flat and elongated particles (Tex-280-F).

2.1.3. Fine Aggregate. Fine aggregates consist of manufactured sands, screenings, and field sands. Fine aggregate stockpiles must meet the gradation requirements in Table 2. Supply fine aggregates that are free from organic impurities. The Engineer may test the fine aggregate in accordance with Tex-408-A to verify the material is free from organic impurities. Unless otherwise shown on the plans, up to 10% of the total aggregate may be field sand or other uncrushed fine aggregate. Use fine aggregate, with the exception of field sand, from coarse aggregate sources that meet the requirements shown in Table 1 unless otherwise approved.

Test the stockpile if 10% or more of the stockpile is retained on the No. 4 sieve, and verify that it meets the requirements in Table 1 for crushed face count (Tex-460-A) and flat and elongated particles (Tex-280-F).

Table 1
Aggregate Quality Requirements

Property	Test Method	Requirement
Coarse Aggregate		
SAC	Tex-499-A (AQMP)	As shown on the plans
Deleterious material, %, Max	Tex-217-F, Part I	1.5
Decantation, %, Max	Tex-217-F, Part II	1.5
Micro-Deval abrasion, %	Tex-461-A	Note 1
Los Angeles abrasion, %, Max	Tex-410-A	40
Magnesium sulfate soundness, 5 cycles, %, Max	Tex-411-A	30
Crushed face count,[2] %, Min	Tex-460-A, Part I	85
Flat and elongated particles @ 5:1, %, Max	Tex-280-F	10
Fine Aggregate		
Linear shrinkage, %, Max	Tex-107-E	3
Sand equivalent %, Min	Tex-203-F	45

1. Not used for acceptance purposes. Optional test used by the Engineer as an indicator of the need for further investigation.
2. Only applies to crushed gravel.

Table 2
Gradation Requirements for Fine Aggregate

Sieve Size	% Passing by Weight or Volume
3/8"	100
#8	70–100
#200	0–30

2.2. Mineral Filler. Mineral filler consists of finely divided mineral matter such as agricultural lime, crusher fines, hydrated lime, or fly ash. Mineral filler is allowed unless otherwise shown on the plans. Use no more than 2% hydrated lime or fly ash unless otherwise shown on the plans. Use no more than 1% hydrated lime if a substitute binder is used unless otherwise shown on the plans or allowed. Test all mineral fillers except hydrated lime and fly ash in accordance with Tex-107-E to ensure specification compliance. The plans may require or disallow specific mineral fillers. Provide mineral filler, when used, that:

- is sufficiently dry, free-flowing, and free from clumps and foreign matter as determined by the Engineer;
- does not exceed 3% linear shrinkage when tested in accordance with Tex-107-E; and
- meets the gradation requirements in Table 3, unless otherwise shown on the plans.

Table 3
Gradation Requirements for Mineral Filler

Sieve Size	% Passing by Weight or Volume
#8	100
#200	55–100

2.3. Baghouse Fines. Fines collected by the baghouse or other dust-collecting equipment may be reintroduced into the mixing drum.

2.4. Asphalt Binder. Furnish the type and grade of performance-graded (PG) asphalt specified on the plans.

2.5. Additives. Use the type and rate of additive specified when shown on the plans. Additives that facilitate mixing, compaction, or improve the quality of the mixture are allowed when approved. Provide the Engineer with documentation, such as the bill of lading, showing the quantity of additives used in the HMAC unless otherwise directed.

2.5.1. Lime and Liquid Antistripping Agent. When lime or a liquid antistripping agent is used, add in accordance with Item 301, "Asphalt Antistripping Agents." Do not add lime directly into the mixing drum of any plant where lime is removed through the exhaust stream unless the plant has a baghouse or dust collection system that reintroduces the lime into the drum.

2.6. Compaction Aid. Compaction Aid is defined as a department-approved chemical warm mix additive that is used to produce an asphalt mixture at a discharge temperature greater than 275°F.

A compaction aid may be used to facilitate mixing and compaction of HMA produced at target discharge temperatures greater than 275°F. Compaction Aid is allowed for use on all projects and is required when shown on the plans.

2.7. Recycled Materials. Use of RAP is permitted unless otherwise shown on the plans. Do not exceed the maximum allowable percentage of RAP shown in Table 4. The allowable percentage shown in Table 4 may be decreased or increased when shown on the plans. Determine the asphalt binder content and gradation of the RAP stockpiles for mixture design purposes in accordance with Tex-236-F, Part I. The Engineer may verify the asphalt binder content of the stockpiles at any time during production. Perform other tests on RAP when shown on the plans. Asphalt binder from RAP is designated as recycled asphalt binder. Calculate and ensure that the ratio of the recycled asphalt binder to total binder does not exceed the percentages shown in Table 5 during mixture design and HMA production when RAP is used. Use a separate cold feed bin for each stockpile of RAP during HMA production.

Surface, intermediate, and base mixes referenced in Tables 4 and 5 are defined as follows:

- Surface. The final HMA lift placed at the top of the pavement structure or placed directly below mixtures produced in accordance with Items 316, 342, 347, or 348;
- Intermediate. Mixtures placed below an HMA surface mix and less than or equal to 8.0 in. from the riding surface; and
- Base. Mixtures placed greater than 8.0 in. from the riding surface. Unless otherwise shown on the plans, mixtures used for bond breaker are defined as base mixtures.

2.7.1. RAP. RAP is salvaged, milled, pulverized, broken, or crushed asphalt pavement. Fractionated RAP is defined as a RAP stockpile that contains RAP material with a minimum of 95.0% passing the 3/8-in. or ½-in. sieve, before burning in the ignition oven, unless otherwise approved. The Engineer may allow the Contractor to use an alternate to the 3/8-in. or ½-in. screen to fractionate the RAP.

Use of Contractor-owned RAP, including HMA plant waste, is permitted unless otherwise shown on the plans. Perform any necessary tests to ensure RAP is appropriate for use.

The coarse RAP stockpile will contain only material retained by processing over a 3/8-in. or 1/2-in. screen unless otherwise approved. The fine RAP stockpile will contain only material passing the 3/8-in. or 1/2-in. screen unless otherwise approved. The Engineer may allow the Contractor to use an alternate to the 3/8-in. or 1/2-in. screen to fractionate the RAP. The maximum percentages of fractionated RAP may be comprised of coarse or fine fractionated RAP or the combination of both coarse and fine fractionated RAP.

Do not use RAP contaminated with dirt or other objectionable materials. Do not use RAP if the decantation value exceeds 5% and the plasticity index is greater than 8. Test the stockpiled RAP for decantation in accordance with Tex-406-A, Part I. Determine the plasticity index in accordance with Tex-106-E if the decantation value exceeds 5%. The decantation and plasticity index requirements do not apply to RAP samples with asphalt removed by extraction or ignition.

Table 4
Maximum Allowable Amounts of RAP[1]

Maximum Allowable Fractionated RAP (%)		
Surface	Intermediate	Base
15.0	25.0	30.0

1. Must also meet the recycled binder to total binder ratio shown in Table 5.

2.8. Substitute Binders. Unless otherwise shown on the plans, the Contractor may use a substitute PG binder listed in Table 5 instead of the PG binder originally specified, if using recycled materials, and if the substitute PG binder and mixture made with the substitute PG binder meet the following:

- the substitute binder meets the specification requirements for the substitute binder grade in accordance with Section 300.2.10., "Performance-Graded Binders;" and

- the mixture has less than 10.0 mm of rutting on the Hamburg Wheel test (Tex-242-F) after the number of passes required for the originally specified binder. Use of substitute PG binders may only be allowed at the discretion of the Engineer if the Hamburg Wheel test results are between 10.0 mm and 12.5 mm.

Table 5
Allowable Substitute PG Binders and Maximum Recycled Binder Ratios

Originally Specified PG Binder	Allowable Substitute PG Binder for Surface Mixes	Allowable Substitute PG Binder for Intermediate and Base Mixes	Maximum Ratio of Recycled Binder to Total Binder (%)		
			Surface	Intermediate	Base
76-22[3,4]	70-22	70-22	10.0	20.0	25.0
70-22[1,4]	N/A	64-22	10.0	20.0	25.0
64-22[1,2]	N/A	N/A	10.0	20.0	25.0
76-28[3,4]	70-28	70-28	10.0	20.0	25.0
70-28[1,4]	N/A	64-28	10.0	20.0	25.0
64-28[1,2]	N/A	N/A	10.0	20.0	25.0

1. Binder substitution is not allowed for surface mixtures.
2. Binder substitution is not allowed for intermediate and base mixtures.
3. Use no more than 10.0% recycled binder in surface mixtures when using this originally specified PG binder.
4. Use no more than 20.0% recycled binder when using this originally specified PG binder for intermediate mixtures. Use no more than 25.0% recycled binder when using this originally specified PG binder for base mixtures.

3. EQUIPMENT

Provide machinery, tools, and equipment necessary for proper execution of the work.

4. QUALITY CONTROL/QUALITY ASSURANCE

Produce the specified paving mixture. In addition to tests required by the specification, Contractors may perform other QC tests as deemed necessary.

4.1. Certification. Personnel certified by the Department-approved hot-mix asphalt certification program must conduct all mixture designs, sampling, and testing in accordance with Table 6. Supply the Engineer with a list of certified personnel and copies of their current certificates before beginning production and when personnel changes are made. Provide a mixture design developed and signed by a Level 2 certified specialist. Provide level 1A certified specialists at the plant during production operations. Provide Level AGG101 certified specialists for aggregate testing.

Table 6
Test Methods, Test Responsibility, and Minimum Certification Levels

Test Description	Test Method	Contractor	Engineer	Level[1]
1. Aggregate and Recycled Material Testing				
Sampling	Tex-221-F	✓	✓	1A/AGG101
Dry sieve	Tex-200-F, Part I	✓	✓	1A/AGG101
Washed sieve	Tex-200-F, Part II	✓	✓	1A/AGG101
Deleterious material	Tex-217-F, Parts I & III	✓	✓	AGG101
Decantation	Tex-217-F, Part II	✓	✓	AGG101
Los Angeles abrasion	Tex-410-A		✓	TxDOT
Magnesium sulfate soundness	Tex-411-A		✓	TxDOT
Micro-Deval abrasion	Tex-461-A		✓	AGG101
Crushed face count	Tex-460-A	✓	✓	AGG101
Flat and elongated particles	Tex-280-F	✓	✓	AGG101
Linear shrinkage	Tex-107-E	✓	✓	AGG101
Sand equivalent	Tex-203-F	✓	✓	AGG101
Organic impurities	Tex-408-A	✓	✓	AGG101
2. Asphalt Binder Sampling				
Asphalt binder sampling	Tex-500-C, Part II	✓	✓	1A/1B
3. Mix Design & Verification				
Design and JMF changes	Tex-204-F	✓	✓	2
Mixing	Tex-205-F	✓	✓	2
Molding (TGC)	Tex-206-F	✓	✓	1A
Molding (SGC)	Tex-241-F	✓	✓	1A
Laboratory-molded density	Tex-207-F, Parts I & VI	✓	✓	1A
Rice gravity	Tex-227-F, Part II	✓	✓	1A
Ignition oven correction factors[2]	Tex-236-F, Part II	✓	✓	2
Indirect tensile strength	Tex-226-F	✓	✓	1A
Hamburg Wheel test	Tex-242-F	✓	✓	1A
Boil test	Tex-530-C	✓	✓	1A
4. Production Testing				
Mixture sampling	Tex-222-F	✓	✓	1A/1B
Molding (TGC)	Tex-206-F		✓	1A
Molding (SGC)	Tex-241-F		✓	1A
Laboratory-molded density	Tex-207-F, Parts I & VI		✓	1A
Rice gravity	Tex-227-F, Part II		✓	1A
Gradation & asphalt binder content[2]	Tex-236-F, Part I		✓	1A
Moisture content	Tex-212-F, Part II		✓	1A/AGG101
Hamburg Wheel test	Tex-242-F		✓	1A
Boil test	Tex-530-C		✓	1A

1. Level 1A, 1B, AGG101, and 2 are certification levels provided by the Hot Mix Asphalt Center certification program.
2. Refer to Section "Production Testing," for exceptions to using an ignition oven.

4.2. Reporting, Testing, and Responsibilities. Use Department-provided templates to record and calculate all test data pertaining to the mixture design. The Engineer will use Department templates for any production and placement testing. Obtain the current version of the templates at http://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/forms/site-manager.html or from the Engineer.

The maximum allowable time for the Engineer to exchange test data with the Contractor is as given in Table 7 unless otherwise approved. The Engineer will immediately report to the Contractor any test result that requires suspension of production or placement or that fails to meet the specification requirements.

Table 7
Reporting Schedule

Description	Reported By	Reported To	To Be Reported Within
Production Testing			
Gradation	Engineer	Contractor	1 working day of completion of the test
Asphalt binder content			
Laboratory-molded density			
Hamburg Wheel test			
Moisture content			
Boil test			
Binder tests			

4.3. Mixture Design.

4.3.1. Design Requirements. The Contractor will design the mixture using a Superpave Gyratory Compactor (SGC). A Texas Gyratory Compactor (TGC) may be used when shown on the plans. Use the dense-graded design procedure provided in Tex-204-F. Design the mixture to meet the requirements listed in Tables 1, 2, 3, 4, 5, 8, 9, and 10.

4.3.1.1. Design Number of Gyrations (Ndesign) When the SGC Is Used. Design the mixture at 50 gyrations (Ndesign). Use a target laboratory-molded density of 96.0% to design the mixture; however, adjustments can be made to the Ndesign value as noted in Table 9. The Ndesign level may be reduced to at least 35 gyrations at the Contractor's discretion.

Use an approved laboratory from the Department's MPL to perform the Hamburg Wheel test in accordance with Tex-242-F, and provide results with the mixture design, or provide the laboratory mixture and request that the Department perform the Hamburg Wheel test. The Engineer will be allowed 10 working days to provide the Contractor with Hamburg Wheel test results on the laboratory mixture design.

The Engineer will provide the mixture design when shown on the plans. The Contractor may submit a new mixture design at any time during the contract. The Engineer will verify and approve all mixture designs (JMF1) before the Contractor can begin production.

Provide the Engineer with a mixture design report using the Department-provided template. Include the following items in the report:

- the combined aggregate gradation, source, specific gravity, and percent of each material used;
- asphalt binder content and aggregate gradation of RAP stockpiles;
- the target laboratory-molded density (or Ndesign level when using the SGC);
- results of all applicable tests;
- the mixing and molding temperatures;
- the signature of the Level 2 person or persons that performed the design;
- the date the mixture design was performed; and
- a unique identification number for the mixture design.

Table 8
Master Gradation Limits (% Passing by Weight or Volume) and VMA Requirements

Sieve Size	B Fine Base	C Coarse Surface	D Fine Surface	F Fine Mixture
2"	–	–	–	–
1-1/2"	100.0[1]	–	–	–
1"	98.0–100.0	100.0[1]	–	–
3/4"	84.0–98.0	95.0–100.0	100.0[1]	–
1/2"	–	–	98.0–100.0	100.0[1]
3/8"	60.0–80.0	70.0–85.0	85.0–100.0	98.0–100.0
#4	40.0–60.0	43.0–63.0	50.0–70.0	70.0–90.0
#8	29.0–43.0	32.0–44.0	35.0–46.0	38.0–48.0
#30	13.0–28.0	14.0–28.0	15.0–29.0	12.0–27.0
#50	6.0–20.0	7.0–21.0	7.0–20.0	6.0–19.0
#200	2.0–7.0	2.0–7.0	2.0–7.0	2.0–7.0
Design VMA, % Minimum				
–	13.0	14.0	15.0	16.0
Production (Plant-Produced) VMA, % Minimum				
–	12.5	13.5	14.5	15.5

1. Defined as maximum sieve size. No tolerance allowed.

Table 9
Laboratory Mixture Design Properties

Mixture Property	Test Method	Requirement
Target laboratory-molded density, % (SGC)	Tex-207-F	96.0
Design gyrations (Ndesign for SGC)	Tex-241-F	50[1]
Indirect tensile strength (dry), psi	Tex-226-F	85–200[2]
Boil test[3]	Tex-530-C	–

1. Adjust within a range of 35–100 gyrations when shown on the plans or specification or when mutually agreed between the Engineer and Contractor.
2. The Engineer may allow the IDT strength to exceed 200 psi if the corresponding Hamburg Wheel rut depth is greater than 3.0 mm and less than 12.5 mm.
3. Used to establish baseline for comparison to production results. May be waived when approved.

Table 10
Hamburg Wheel Test Requirements

High-Temperature Binder Grade	Test Method	Minimum # of Passes @ 12.5 mm[1] Rut Depth, Tested @ 50°C
PG 64 or lower	Tex-242-F	10,000[2]
PG 70		15,000[3]
PG 76 or higher		20,000

1. When the rut depth at the required minimum number of passes is less than 3 mm, the Engineer may require the Contractor to increase the target laboratory-molded density (TGC) by 0.5% to no more than 97.5% or lower the Ndesign level (SGC) to at least 35 gyrations.
2. May be decreased to at least 5,000 passes when shown on the plans.
3. May be decreased to at least 10,000 passes when shown on the plans.

4.3.1.2. Target Laboratory-Molded Density When The TGC Is Used. Design the mixture at a 96.5% target laboratory-molded density. Increase the target laboratory-molded density to 97.0% or 97.5% at the Contractor's discretion or when shown on the plans or specification.

4.3.2. Job-Mix Formula Approval. The job-mix formula (JMF) is the combined aggregate gradation, target laboratory-molded density (or Ndesign level), and target asphalt percentage used to establish target values for hot-mix production. JMF1 is the original laboratory mixture design used to produce the trial batch. Furnish a mix design report (JMF1) with representative samples of all component materials and request

approval to produce the trial batch. Provide approximately 10,000 g of the design mixture and request that the Department perform the Hamburg Wheel test if opting to have the Department perform the test. The Engineer will verify JMF1 based on plant-produced mixture from the trial batch unless otherwise determined. The Engineer may accept an existing mixture design previously used on a Department project and may waive the trial batch to verify JMF1. Provide split samples of the mixtures and blank samples used to determine the ignition oven correction factors. The Engineer will determine the aggregate and asphalt correction factors from the ignition oven used for production testing in accordance with Tex-236-F.

The Engineer will use a TGC calibrated in accordance with Tex-914-K in molding production samples samples if the TGC is used to design the mix.

The Engineer may perform Tex-530-C and retain the tested sample for comparison purposes during production. The Engineer may waive the requirement for the boil test.

4.3.3. JMF Adjustments. If JMF adjustments are necessary to achieve the specified requirements, the adjusted JMF must:

- be provided to the Engineer in writing before the start of a new lot;
- be numbered in sequence to the previous JMF;
- meet the mixture requirements in Table 4 and Table 5;
- meet the master gradation limits shown in Table 8; and
- be within the operational tolerances of the current JMF listed in Table 11.

The Engineer may adjust the asphalt binder content to maintain desirable laboratory density near the optimum value while achieving other mix requirements.

Table 11
Operational Tolerances

Description	Test Method	Allowable Difference Between Trial Batch and JMF1 Target	Allowable Difference from Current JMF Target
Individual % retained for #8 sieve and larger	Tex-200-F or Tex-236-F	Must be within master grading limits in Table 8	±5.0[1,2]
Individual % retained for sieves smaller than #8 and larger than #200			±3.0[1,2]
% passing the #200 sieve			±2.0[1,2]
Asphalt binder content, %	Tex-236-F	±0.5	±0.3[2]
Laboratory-molded density, %	Tex-207-F	±1.0	±1.0
VMA, %, min	Tex-204-F	Note 3	Note 3

1. When within these tolerances, mixture production gradations may fall outside the master grading limits; however, the % passing the #200 will be considered out of tolerance when outside the master grading limits.
2. Only applies to mixture produced for Lot 1 and higher.
3. Mixture is required to meet Table 8 requirements.

4.4. Production Operations. Perform a new trial batch when the plant or plant location is changed. Take corrective action and receive approval to proceed after any production suspension for noncompliance to the specification. Submit a new mix design and perform a new trial batch when the asphalt binder content of any RAP stockpile used in the mix is more than 0.5% higher than the value shown on the mixture design report.

4.4.1. Storage and Heating of Materials. Do not heat the asphalt binder above the temperatures specified in Item 300, “Asphalts, Oils, and Emulsions,” or outside the manufacturer’s recommended values. Provide the Engineer with daily records of asphalt binder and hot-mix asphalt discharge temperatures (in legible and discernible increments) in accordance with Item 320, “Equipment for Asphalt Concrete Pavement,” unless otherwise directed. Do not store mixture for a period long enough to affect the quality of the mixture, nor in any case longer than 12 hr. unless otherwise approved.

4.4.2. Mixing and Discharge of Materials. Notify the Engineer of the target discharge temperature and produce the mixture within 25°F of the target. Monitor the temperature of the material in the truck before shipping to ensure that it does not exceed the maximum production temperatures listed in Table 12. The Department will not pay for any mixture produced above the maximum production temperatures listed in Table 12.

Table 12
Maximum Production Temperature

High-Temperature Binder Grade[1]	Maximum Production Temperature
PG 64	325˚F
PG 70	335˚F
PG 76	345˚F

1. The high-temperature binder grade refers to the high-temperature grade of the virgin asphalt binder used to produce the mixture.

Control the mixing time and temperature so that substantially all moisture is removed from the mixture before discharging from the plant. The Engineer may determine the moisture content by oven-drying in accordance with Tex-212-F, Part II, and verify that the mixture contains no more than 0.2% of moisture by weight. The Engineer will obtain the sample immediately after discharging the mixture into the truck, and will perform the test promptly.

4.5. Hauling Operations. Clean all truck beds before use to ensure that mixture is not contaminated. Use a release agent shown on the Department's MPL to coat the inside bed of the truck when necessary.

4.6. Production Acceptance.

4.6.1. Production Lot. Each day of production is defined as a production lot. Lots will be sequentially numbered and correspond to each new day of production. Note that lots are not subdivided into sublots for this specification.

4.6.2. Production Sampling.

4.6.2.1. Mixture Sampling. The Engineer may obtain mixture samples in accordance with Tex-222-F at any time during production.

4.6.2.2. Asphalt Binder Sampling. The Engineer may obtain or require the Contractor to obtain 1 qt. samples of the asphalt binder at any time during production from a port located immediately upstream from the mixing drum or pug mill and upstream from the introduction of any additives in accordance with Tex-500-C, Part II. The Contractor will notify the Engineer when the sampling will occur. The Engineer may test any of the asphalt binder samples to verify compliance with Item 300, "Asphalts, Oils, and Emulsions."

4.6.3. Production Testing. The Engineer will test at the frequency listed in the Department's *Guide Schedule of Sampling and Testing* and this specification. The Engineer may suspend production if production tests do not meet specifications or are not within operational tolerances listed in Table 11. Take immediate corrective action if the Engineer's laboratory-molded density on any sample is less than 95.0% or greater than 98.0%, to bring the mixture within these tolerances. The Engineer may suspend operations if the Contractor's corrective actions do not produce acceptable results. The Engineer will allow production to resume when the proposed corrective action is likely to yield acceptable results.

The Engineer may use alternate methods for determining the asphalt binder content and aggregate gradation if the aggregate mineralogy is such that Tex-236-F does not yield reliable results. Use the applicable test procedure if an alternate test method is selected.

Table 13
Production Testing

Description	Test Method
Individual % retained for #8 sieve and larger	Tex-200-F or Tex-236-F
Individual % retained for sieves smaller than #8 and larger than #200	
% passing the #200 sieve	
Laboratory-molded density	Tex-207-F
Laboratory-molded bulk specific gravity	
VMA	Tex-204-F
Moisture content	Tex-212-F, Part II
Theoretical maximum specific (Rice) gravity	Tex-227-F
Asphalt binder content	Tex-236-F
Hamburg Wheel test	Tex-242-F
Asphalt binder sampling and testing	Tex-500-C
Boil test	Tex-530-C

1. Testing performed by the Materials and Test Division or designated laboratory.

4.6.3.1. Voids in Mineral Aggregates (VMA). The Engineer may determine the VMA for any production lot. Take immediate corrective action if the VMA value for any lot is less than the minimum VMA requirement for production listed in Table 8. Suspend production and shipment of the mixture if the Engineer's VMA result is more than 0.5% below the minimum VMA requirement for production listed in Table 8.

4.6.3.2. Hamburg Wheel Test. The Engineer may perform a Hamburg Wheel test at any time during production, including when the boil test indicates a change in quality from the materials submitted for JMF1. Suspend production until further Hamburg Wheel tests meet the specified values when the production samples fail the Hamburg Wheel test criteria in Table 10.

4.6.4. Individual Loads of Hot-Mix. The Engineer can reject individual truckloads of hot-mix. When a load of hot-mix is rejected for reasons other than temperature, contamination, or excessive uncoated particles, the Contractor may request that the rejected load be tested. Make this request within 4 hr. of rejection. The Engineer will sample and test the mixture. If test results are within the operational tolerances shown in Table 11, payment will be made for the load. If test results are not within operational tolerances, no payment will be made for the load.

5. MEASUREMENT

Hot mix will be measured by the ton of composite hot-mix, which includes asphalt, aggregate, and additives. Measure the weight on scales in accordance with Item 520, "Weighing and Measuring Equipment."

6. PAYMENT

The materials furnished in accordance with this Item and measured as provided under "Measurement," will be paid for at the unit price bid for the types shown below.

6.1. Hot Mix (Site Delivery). Payment will be made for the mixture type, SAC, and binder specified. This price is full compensation for furnishing materials, assistance provided in sampling, loading, hauling, delivery of materials, furnishing scales and labor for weighing and measuring, and equipment, labor, tools, and incidentals. If bid codes in the estimate indicate location numbers, each location will be shown in the plans.

6.2. Hot Mix (Vehicle Pickup). Payment will be made for the mixture type, SAC, and binder specified. This price is full compensation for furnishing materials, assistance provided in sampling, loading, furnishing scales and labor for weighing and measuring, and equipment, labor, tools, and incidentals.

Trial batches will not be paid for unless approved by the Department.

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