

| | |
|---------|-----------------|
| Control | 6406-24-001 |
| Project | RMC - 640624001 |
| Highway | IH0020 |
| County | TARRANT |

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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PROPOSAL TO THE TEXAS TRANSPORTATION COMMISSION

2014 SPECIFICATIONS

WORK CONSISTING OF CLEANING AND SEALING CRACKS TARRANT 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 365 working 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:

FOUR THOUSAND (Dollars) (\$4,000)

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 2 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. in the event of the award of a contract, the organization represented will secure bonds for the full amount of the contract.
3. 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.
4. 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 2 of the specifications.

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

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

NOTICE TO CONTRACTORS

ANY CONTRACTORS INTENDING TO BID ON ANY WORK TO BE AWARDED BY THIS DEPARTMENT MUST SUBMIT A SATISFACTORY “AUDITED FINANCIAL STATEMENT” AND “EXPERIENCE QUESTIONNAIRE” AT LEAST TEN DAYS PRIOR TO THE LETTING DATE.

UNIT PRICES MUST BE SUBMITTED IN ACCORDANCE WITH ITEM 2 OF THE STANDARD SPECIFICATIONS OR SPECIAL PROVISION TO ITEM 2 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 Oblige, 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:

| | |
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NOW, THEREFORE, if the Oblige shall award the Contract to the Principal and the Principal shall enter into the Contract in writing with the Oblige 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 Oblige, 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.

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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):

| |
|--|
| |
| |
| |

| | |
|----------------|------------------------|
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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 _____

This page intentionally left blank.

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 |
|-----|------|------|----|----------------------|------|------------------|------------|------------|-----|
| | I04 | 509 | X | REMOV CONC (SDWLK) | MSY | 266.400 | \$10.000 | \$2,664.00 | 1 |
| | | | | | | 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

EXAMPLE

EXAMPLE

EXAMPLE

EXAMPLE

EXAMPLES

BID PRICES SUBMITTED BY HAND WRITTEN FORMAT

| ALT | ITEM-CODE | | | UNIT BID PRICE <u>ONLY</u> 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 |

Unit price for each plant in place

| | | | | | | | |
|--|-----|-----|--|--|-----|-----------|----|
| | 249 | 014 | | FLEX BASE(DEL)(DENSOT)(TY A GR4 CL2)  | TON | 56,787.00 | 14 |
|--|-----|-----|--|--|-----|-----------|----|

Unit price for each ton of Flexible Base

| | | | | | | | |
|--|-----|-----|-----|---|----|--------|----|
| | 430 | 001 | 001 | CL A CONC FOR EXT STR (CULV)  | CY | 45.000 | 27 |
|--|-----|-----|-----|---|----|--------|----|

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 |
|--|-----|-----|-----|--|----|--------|---|

Unit price of each Roadway Illumination Assembly

EXAMPLE

EXAMPLE

EXAMPLE

EXAMPLE

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PROJECT RMC - 640624001
 COUNTY TARRANT

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. | | | | |
| | 500 | 6001 | | MOBILIZATION DOLLARS and CENTS | LS | 1.000 | 1 |
| | 712 | 6008 | 002 | JT / CRCK SEAL (RUBBER - ASPHALT) DOLLARS and CENTS | LMI | 260.000 | 2 |
| | 713 | 6003 | | JT SEALING AND CLEANING(LNGT CNSTR JTS) DOLLARS and CENTS | LF | 12,300.000 | 3 |
| | 721 | 6002 | 001 | FIBER REINFORCED POLYMER PATCHING MATLS DOLLARS and CENTS | LB | 124.000 | 4 |
| | 6001 | 6001 | | PORTABLE CHANGEABLE MESSAGE SIGN DOLLARS and CENTS | DAY | 48.000 | 5 |
| | 6185 | 6002 | 002 | TMA (STATIONARY) DOLLARS and CENTS | DAY | 37.000 | 6 |

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.

ENGINEER SEAL

Control 6406-24-001
Project RMC - 640624001
Highway IH0020
County TARRANT

The enclosed Texas Department of Transportation Specifications, Special Specifications, Special Provisions, General Notes and Specification Data in this document have been selected by me, or under my responsible supervision as being applicable to this project. Alteration of a sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act.



The seal appearing on this document was authorized by
David A. Neeley, P.E.
OCTOBER 04, 2022

County: TARRANT

Control: 6406-24-001

Highway: IH20, ETC.

GENERAL NOTES:

Special Notes:

Contractor questions on this project are to be addressed to the following individual(s):

Area Engineer: David Neeley David.Neeley@txdot.gov

Maintenance Section Supervisor: Tom Brown Tom.Brown@txdot.gov

Contractor questions will only be accepted through email, phone, and in person to the above individuals.

All Contractor questions will be reviewed by the Area Engineer or Assistance Area Engineer. Once a response is developed, it will be posted to TxDOT's Public FTP at the following Address: <https://ftp.dot.state.tx.us/pub/txdot-info/Pre-Letting Responses/>

All questions submitted that generate a response will be posted through this site. The site is organized by District, Project Type (Construction or Maintenance), Letting Date, CSJ/Project Name.

General:

Plans are required for this project. Plans may be obtained from one of the plan companies listed in the "Special Notice to Contractors", or viewed at Texas Department of Transportation's (TxDOT's) Internet site at <http://www.dot.state.tx.us/business/plansonline/agreement.htm>

Bid proposals for this project will be delivered to the **District Maintenance Contracting Office** at the following address:

**Administration Annex Building
2501 SW Loop 820
Fort Worth, Texas 76133**

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 and/or execute all contracts and work orders at the same time.

Furnish crew(s) and equipment capable of maintaining work in a continuous manner for the completion of the work listed on the work order.

Personnel will be experienced in items of work in the contract, which they will be performing. Safety vests and hard hats will be pre-approved and worn at all times when outside vehicles within the work area. Safety vests shall be Class III.

Provide and maintain a dedicated email address for receipt of work orders and correspondence throughout the term of this contract.

County: TARRANT

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Highway: IH20, ETC.

Prior to mobilizing equipment into the Fort Worth District, all equipment will be clean and free of any debris from prior use in other districts or counties.

Project Description - This project consists of **Cleaning and Sealing Cracks and Joints** on sections of highway within **South Tarrant County** as shown in the contract and defined in these general notes and specifications. Coordinate all work through the Maintenance Supervisor or his representative. The names will be provided during the preconstruction meeting.

South Tarrant County
Maintenance Supervisor
2540 Edgecliff Road
Fort Worth, TX 76133
817-370-6901

Item 3.8 Beginning of Work. The District Maintenance Office will notify the maintenance section at the beginning of the crack sealing season as to when sealing operations may commence. Work Orders will not be issued prior to notice to commence date and will not be issued before October 1st of the sealing season.

Item 5.5. Cooperation of Contractor. Designate superintendent in accordance with second paragraph of Article 5.5. Cooperation of Contractor in the Standard Specifications For Construction And Maintenance of Highways, Streets, And Bridges.

Item 7.2.4. Public Safety and Convenience. Personal vehicles will not be parked within the right-of-way at any time, including any section closed to the traveling public.

Operations will be curtailed or halted during special events that may result in delays or congestion to the traveling public.

No work that restricts or interferes with traffic shall be allowed from 3:00 pm on the day preceding the Holiday or Event to 9:00 am on the day after the Holiday or Event. The following Holiday/Event lane closure restriction requirements apply to this project:

| Holiday Lane Closure Restrictions | |
|--|---|
| New Year’s Eve and New Year’s Day (December 31 through January 1) | 3 PM December 30 through 9 AM January 2 |
| Easter Holiday Weekend (Friday through Sunday) | 3PM Thursday through 9 AM Monday |
| Memorial Day Weekend (Friday through Monday) | 3 PM Thursday through 9 AM Tuesday |
| Independence Day (July 3 through July 5) | 3 PM July 2 through 9 AM July 6 |
| Labor Day Weekend (Friday through Monday) | 3 PM Thursday through 9 AM Tuesday |

County: TARRANT

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Highway: IH20, ETC.

| | |
|---|---|
| Thanksgiving Holiday (Wednesday through Sunday) | 3 PM Tuesday through 9 AM Monday |
| Christmas Holiday (December 23 through December 26) | 3 PM December 22 through 9 AM December 27 |

No lane closures within approximately 1 mile proximity (based on potential impact) of major retail traffic generators (i.e. malls) (Thanksgiving Day through January 2). This includes the events listed below:

Event Lane Closure Restrictions:
3 PM the day before the Event to 9 AM the day after the Event

| |
|---|
| NASCAR Nationwide and Sprint Cup Series (Held in late March/early April & late October/early November) |
| Indy Series Racing and NASCAR Truck Series (Held in June) |
| Fort Worth Stock Show and Rodeo (Held in mid-January and early February) |
| Arlington Entertainment District |
| MayFest (Held in early May) |

The above list of events is not all inclusive and should be added to or adjusted as needed. When deemed necessary, the Engineer will modify the list of major events when new events develop, existing events are rescheduled, or when warranted.

Modifications to Lane Closure / Work Restrictions:

Submit a request in writing for approval by the Engineer a minimum of 10 days in advance of implementing a change to lane closure restrictions.

When deemed necessary, the Engineer will lengthen, shorten, or otherwise modify lane closure restrictions as traffic conditions warrant.

Item 8.1. Prosecution of Work. This contract is site-specific. Notification of work will be executed by work order. Notify section supervisor twenty-four (24) hours in advance of the date and time the Contractor plans to commence work.

Perform work during the shaded months presented in the "Schedule of Work" Table.

County: TARRANT

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Highway: IH20, ETC.

**TABLE 1
SCHEDULE OF WORK**

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Site Specific Work | | | | | | | | | | | | |

For Site Specific items, work will begin no later than 7 calendar days from issuance of the work order letter and continuously processed to completion unless otherwise approved.

Item 8.3. Computation of Contract Time for Completion. Working days for work orders will be calculated by dividing quantities by production rate. A fraction of the day will be rounded up to the next whole number. If the total number of working days is not used during the completion of the work order the working days will not be carried forward to a subsequent work order. Each work order will define the total number of working days for that particular work order as defined in Section 8.3.1.4. Standard Work Week in the Standard Specifications for Construction And Maintenance Of Highways, Streets, And Bridges.

Item 8.3.2. Restricted Work Hours. Perform work as shown below, unless otherwise approved:

| |
|--|
| <i>Daytime Work</i> |
| 30 min. after sunrise – 30 min before sunset Monday – Friday Saturday-Optional |
| Excluding National Holidays |

Contractor has the option of working on Saturdays or State holidays with forty-eight (48) hour advance notice. Work on Sundays or National holidays will not be permitted without written permission of the Engineer.

Item 8.5. Project Schedules. Submit project schedules by the twentieth (20th) day of every month.

Item 8.6. Failure to Complete Work on Time. The response time specified in the contract is an essential element. Liquidated damages will be accessed when the Contractor fails to begin work within the specified response times for any Item(s). The dollar amount specified in this contract will be deducted from any money due or to become due for any Items(s) and will continue to be deducted for each day until work begins. This amount will be assessed not as penalty, but as liquidated damages. Failure to complete a project in the working days specified in the work order, time charges will continue for each working day until work is completed for that

County: TARRANT

Control: 6406-24-001

Highway: IH20, ETC.

work order. The amount assessed for liquidated damages will be based on the total value of the original contract, in accordance with Special Provision 000-1243, not the estimated amount on individual work orders.

Item 9.6. Payment for Material on Hand (MOH). Payment for MOH will only be made for materials by written approval of the engineer.

Item 500. Mobilization. Mobilization will be paid by lump sum on site-specific work.

Item 502. Barricades, Signs, and Traffic Handling. Provide equipment such as trucks, trailers, autos, etc., with highly visible omni-directional warning flashing lights. These lights will be used within the work zone at all times. Provide forward facing arrow panel on lead vehicles when working in a continuous turn lanes. The Engineer will approve all equipment and vehicles prior to use.

All traffic control, with the exception of Special Specification 6185 Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA), is subsidiary to the various bid items in accordance with Section 502.4.1.6 Contracts with Callout Work and Work Orders in the Standard Specifications For Construction And Maintenance Of Highways, Streets, And Bridges.

Mount signs on their own stands. Attach two (2) brightly colored safety flags to each sign. Do not hang or lean signs on or against any other sign post or delineator post. Erect signs in such a manner that they will not obstruct the traveling public's view of normal roadway signing or obstruct sight distance at intersections or curves.

Shadow vehicles equipped with Truck-Mounted Attenuators (TMA's) are required as shown on all Traffic Control Plan (TCP) Standards. Striping will be required on the back panel of truck mounted attenuators, and will be 8 inches of red and white stripes placed on an inverted "V" design. Sheeting will conform to departmental material Specification D-9-8300, Type "C".

Provide signing and traffic control in compliance with the Texas Manual on Uniform Traffic Control Devices (TMUTCD), latest edition, and the appropriate traffic control method as outlined in the TMUTCD, and elsewhere in the plans.

Portable Changeable Message Signs (PCMS) shown on the Traffic Control Plan (TCP) Standards as "optional" will be required on this contract. Additional PCMS may be required and will be paid for under the appropriate bid item. PCMS shall be placed a minimum of 48 hours in advance of work on all roadways, and 7 days in advance of work on Tier 1 roadways.

Lane closures will be required on roadways as indicated in the plans and will be a maximum of two (2) miles from beginning of taper to end of closure. Lane closures will also be required on roadways allowing mobile operations in areas with inadequate field of view as determined by the Engineer.

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Highway: IH20, ETC.

Provide a Department Approved Truck Mounted Attenuator (TMA) behind all equipment overhanging roadway travel lanes. Trailer all slow moving vehicles (designed to operate 25mph or less) crossing freeway main lanes.

Dedicated personnel must be on duty to maintain barricades.

Equipment and materials will not be left within thirty feet (30') of the travel lane during non-working hours.

Item 502.4.2. Law Enforcement Personnel. If off-duty uniformed police officers are to be used during daytime hours, obtain prior approval from the Engineer. Nighttime closures will require off-duty uniformed police officer(s). All off-duty uniformed police officers will have marked police vehicle(s) with jurisdiction and full police power in the city or county where the work is being performed. Determine and agree upon the number of off-duty uniformed police officers in advance of the work. Off-duty police officers will be paid for through force account. Fill out Form 318 "Daily Report on Law Enforcement" to check against invoice for officers.

Item 712. Cleaning and Sealing Joints and Cracks (Asphalt Concrete). Clean pavement surfaces prior to application to remove excessive debris including, but not limited to dead animals, lumber, tire tread, etc. Surface preparation is subsidiary to the various bid items.

Protect raised pavement markers and any striping that may have a warranty from damage. Damage to raised pavement markers or striping resulting from Contractor's operations will be replaced at the contractor's own expense.

Perform crack sealing during the following season: October 1 to March 31, unless otherwise approved by the Engineer. Begin crack sealing early enough to complete the entire project before the season expires.

Class B Rubber Asphalt shall be required.

Complete all work at each location before advancing to the next location unless directed by the Engineer.

Dispose of solvents or other materials in a timely manner in accordance with local, state and federal regulations. Provide written documentation showing proof of compliance when requested.

Provide air blasting equipment capable of delivering a sufficient volume of filtered air, free of oil, water or other contaminants to remove all loose debris and material from cracks and joints to be sealed.

For this contract, the required lane miles per normal working day will be ten (10).

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Highway: IH20, ETC.

Item 6001. Portable Changeable Message Sign. Provide electronic portable changeable message sign unit(s) as directed.

If more than one (1) crew works on the same day, but in different locations, each crew will use portable changeable message signs and arrow panels.

Each sign will have the following eighteen (18) messages programmed in its permanent memory:

1. Ramp Closed Ahead
2. Use Other Routes
3. Right Lane Closed
4. Left Lane Closed
5. Closed Ahead
6. Two Lane
7. Detour Ahead
8. Thru Traffic
9. Be Prepared To Stop
10. Merging Traffic
11. Expect 15 Minute Delay
12. Max Speed **MPH
13. Merge Right
14. Merge Left
15. No Exit Next ** Miles
16. Various Lanes Closed
17. Two Left Lanes Closed
18. Two right Lanes Closed

Item 6185. Truck Mounted Attenuators (TMA). The total number of truck mounted attenuators (TMA) required when utilizing the traffic control standards are shown in the tables below.

| TCP 1 Series | Scenario | Required TMA |
|--------------|----------|--------------|
| (1-1)-18 | | 1 |
| (1-2)-18 | | 1 |
| (1-3)-18 | A | 1 |
| | B | 2 |
| (1-4)-18 | | 1 |
| (1-5)-18 | | 1 |

| TCP 2 Series | Scenario | Required TMA |
|--------------|----------|--------------|
| (2-1)-18 | All | 1 |
| (2-2)-18 | All | 1 |
| (2-3)-18 | A | 1 |
| | B | 2 |

| | | |
|----------|-----|---|
| (2-4)-18 | All | 1 |
| (2-6)-18 | All | 1 |

| TCP 5 Series | Scenario | Required TMA |
|--------------|----------|--------------|
| (5-1)-18 | A | 1 |
| | B | 2 |

| TCP 6 Series | Scenario | Required TMA |
|--------------|----------|--------------|
| (6-1)-12 | A | 1 |
| | B | 2 |
| (6-2)-12 | All | 1 |
| (6-3)-12 | All | 1 |
| (6-4)-12 | A | 1 |
| | B | 2 |
| (6-5)-12 | A | 1 |
| | B | 2 |
| (6-8)-14 | All | 1 |
| (6-9)-14 | All | 1 |

Shadow vehicles equipped for truck mounted attenuators (TMA) for mobile and stationary operations must be available for use at any time as determined by the Engineer.

The Contractor will be responsible for determining if one or more of these operations will be ongoing at the same time to determine the total number of TMA needed for the project for those times per plan requirements. Additional TMAs used that are not specified in the plans in which the Contractor expects compensation will require prior approval from the Engineer.

CONTROL : 6406-24-001
PROJECT : RMC - 640624001
HIGHWAY : IH0020
COUNTY : TARRANT

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.

ITEMS 1 TO 9 INCL., GENERAL REQUIREMENTS AND COVENANTS
ITEM 500 MOBILIZATION
ITEM 712 CLEANING AND SEALING JOINTS AND CRACKS (ASPHALT CONCRETE)
<3096>
ITEM 713 CLEANING AND SEALING JOINTS AND CRACKS (CONCRETE PAVEMENT)
ITEM 721 FIBER REINFORCED POLYMER PATCHING MATERIAL (302)

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 "SCHEDULE OF LIQUIDATED DAMAGES" (000--1243)
SPECIAL PROVISION "NOTICE OF CONTRACTOR PERFORMANCE EVALUATIONS"
(000---659)
SPECIAL PROVISIONS TO ITEM 2 (002---011)(002---013)
SPECIAL PROVISIONS TO ITEM 3 (003---011)(003---013)
SPECIAL PROVISIONS TO ITEM 5 (005---002)(005---003)
SPECIAL PROVISIONS TO ITEM 6 (006---001)(006---012)
SPECIAL PROVISIONS TO ITEM 7 (007---004)(007---010)(007---011)
SPECIAL PROVISIONS TO ITEM 8 (008---030)(008---033)
SPECIAL PROVISIONS TO ITEM 9 (009---010)(009---011)
SPECIAL PROVISION TO ITEM 302 (302---003)
SPECIAL PROVISION TO ITEM 712 (712---002)
SPECIAL PROVISIONS TO ITEM 721 (721---001)(721---002)
SPECIAL PROVISION TO SPECIAL SPECIFICATION ITEM 6185 (6185--002)

SPECIAL SPECIFICATIONS:

ITEM 3096 ASPHALTS, OILS, AND EMULSIONS
ITEM 6001 PORTABLE CHANGEABLE MESSAGE SIGN
ITEM 6185 TRUCK MOUNTED ATTENUATOR (TMA) AND TRAILER ATTENUATOR (TA)

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 SPECIFI-
CATIONS 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 000

Important Notice to Contractors



| For Dollar Amount of Original Contract | | Dollar Amount of Daily Contract Administration Liquidated Damages per Working Day |
|--|------------------|---|
| From More Than | To and including | |
| 0 | 1,000,000 | 618 |
| 1,000,000 | 3,000,000 | 832 |
| 3,000,000 | 5,000,000 | 940 |
| 5,000,000 | 15,000,000 | 1317 |
| 15,000,000 | 25,000,000 | 1718 |
| 25,000,000 | 50,000,000 | 2411 |
| 50,000,000 | Over 50,000,000 | 4265 |

In addition to the amount shown in Table 1, the Liquidated Damages will be increased by the amount shown in Item 8 of the General Notes for Road User Cost (RUC), when applicable.

Special Provision 000

Notice of Contractor Performance Evaluations



1. GENERAL

In accordance with Texas Transportation Code §223.012, the Engineer will evaluate Contractor performance based on quality, safety, and timeliness of the project.

2. DEFINITIONS

- 2.1. **Project Recovery Plan (PRP)**—a formal, enforceable plan developed by the Contractor, in consultation with the District, that documents the cause of noted quality, safety, and timeliness issues and specifies how the Contractor proposes to correct project-specific performance deficiencies.

In accordance with Title 43, Texas Administrative Code (TAC), §9.23, the District will request a PRP if the Contractor's performance on a project is below the Department's acceptable standards and will monitor the Contractor's compliance with the established plan.

- 2.2. **Corrective Action Plan (CAP)**—a formal, enforceable plan developed by the Contractor, and proposed for adoption by the Construction or Maintenance Division, that documents the cause of noted quality, safety, and timeliness issues and specifies how the Contractor proposes to correct statewide performance deficiencies.

In accordance with 43 TAC §9.23, the Division will request a CAP if the average of the Contractor's statewide final evaluation scores falls below the Department's acceptable standards for the review period and will monitor the Contractor's compliance with the established plan.

3. CONTRACTOR EVALUATIONS

In accordance with Title 43, Texas Administrative Code (TAC) §9.23, the Engineer will schedule evaluations at the following intervals, at minimum:

- Interim evaluations—at or within 30 days after the anniversary of the notice to proceed, for Contracts extending beyond 1 yr., and
- Final evaluation—upon project closeout.

In case of a takeover agreement, neither the Surety nor its performing Contractor will be evaluated.

In addition to regularly scheduled evaluations, the Engineer may schedule an interim evaluation at any time to formally communicate issues with quality, safety, or timeliness. Upon request, work with the Engineer to develop a PRP to document expectations for correcting deficiencies.

Comply with the PRP as directed. Failure to comply with the PRP may result in additional remedial actions available to the Engineer under Item 5, "Control of the Work." Failure to meet a PRP to the Engineer's satisfaction may result in immediate referral to the Performance Review Committee for consideration of further action against the Contractor.

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

Follow the escalation ladder if there is a disagreement regarding an evaluation or disposition of a PRP. The Contractor may submit additional documentation pertaining to the dispute. The District Engineer's decision

on a Contractor's evaluation score and recommendation of action required in a PRP or follow up for non-compliance is final.

4. DIVISION OVERSIGHT

Upon request of the Construction or Maintenance Division, develop and submit for Division approval a proposed CAP to document expectations for correcting deficiencies in the performance of projects statewide.

Comply with the CAP as directed. The CAP may be modified at any time up to completion or resolution after written approval of the premise of change from the Division. Failure to meet an adopted or revised adopted CAP to the Division's satisfaction within 120 days will result in immediate referral to the Performance Review Committee for consideration of further action against the Contractor.

The Division will consider and document any events outside the Contractor's control that contributed to the failure to meet performance standards or comply with a CAP, including consideration of sufficient time and associated costs as appropriate.

5. PERFORMANCE REVIEW COMMITTEE

The Performance Review Committee, in accordance with 43 TAC §9.24, will review at minimum all final evaluations, history of compliance with PRPs, any adopted CAPs including agreed modifications, any information about events outside a Contractor's control contributing to the Contractor's performance, and any documentation submitted by the Contractor and may recommend one or more of the following actions:

- take no action,
- reduce the Contractor's bidding capacity,
- prohibit the Contractor from bidding on one or more projects,
- immediately suspend the Contractor from bidding for a specified period of time, by reducing the Contractor's bidding capacity to zero, or
- prohibit the Contractor from being awarded a Contract on which they are the apparent low bidder.

The Deputy Executive Director will determine any further action against the Contractor.

6. APPEALS PROCESS

In accordance with 43 TAC §9.25, the Contractor may appeal remedial actions determined by the Deputy Executive Director.

Special Provision to Item 2

Instructions to Bidders



Item 2, "Instructions to Bidders," of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 2.3., "Issuing Proposal Forms," is supplemented by the following:

- 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's (DHS) E-Verify system as specified in Article 2.15., "Department of Homeland Security (DHS) E-Verify System," is prohibited from rebidding that specific project.

Article 2.7., "Nonresponsive Bid," is supplemented by the following:

- the Bidder failed to participate in the Department of Homeland Security's (DHS) as specified in Article 2.15., "Department of Homeland Security (DHS) E-Verify System."

Article 2.15., "Department of Homeland Security (DHS) E-Verify System," is added.

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. In addition, in accordance with paragraph six of Article 8.2, "Subcontracting," include this requirement in all subcontracts and require that subcontractors remain active in E-Verify until their work is completed.

If the apparent low Bidder does not appear on the DHS E-Verify system prior to award, the Department will notify the Contractor that they must submit documentation showing that they are compliant within 5-business days after the date the notification was sent. A Contractor who fails to comply or respond within the deadline will be declared non-responsive and the Department will execute the proposal guaranty. The proposal guaranty will become the property of the State, not as a penalty, but as liquidated damages. 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. For the Bidder who is not registered in E-Verify, the Department will allow for one business day after notification to provide proof of registration.

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

- 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, and
- the new apparent low Bidder will remain eligible to receive future proposals for the same project.

Special Provision to Item 2

Instructions to Bidders



Item 2, "Instructions to Bidders" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 3., "Issuing Proposal Forms," is supplemented by the following:

The Electronic State Business Daily (ESBD), the Integrated Contractor Exchange (iCX) system, and the project proposal are the official sources of advertisement and bidding information for the State and Local Lettings. Bidders should bid the project using the information found therein, including any addenda. These sources take precedence over information from other sources, including TxDOT webpages, which are unofficial and intended for informational purposes only.

Special Provision to Item 3 Award and Execution Contract



Item 3, Award and Execution of Contract," of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 4.3, "Insurance." The first sentence is voided and replaced by the following:

For construction and building Contracts, submit a certificate of insurance showing coverages in accordance with Contract requirements. For routine maintenance Contracts, refer to Article 8, "Beginning of Work."

Article 8, "Beginning of Work." The first sentence is supplemented by the following:

For a routine maintenance Contract, do not begin work until a certificate of insurance showing coverages in accordance with the Contract requirements is provided and accepted.

Special Provision to Item 3

Award and Execution of Contract



Item 3, "Award and Execution of Contract" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 4.3 "Insurance" is being amended by the following:

Table 2
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 |
| All Risk Builder's Risk Insurance (For building-facilities contracts only) | 100% of Contract Price |

Special Provision to Item 5

Control of the Work



Item 5, "Control of the Work," of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 5.1, "Authority of Engineer," is voided and replaced by the following.

The Engineer has the authority to observe, test, inspect, approve, and accept the work. The Engineer decides all questions about the quality and acceptability of materials, work performed, work progress, 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:

- conducting interim performance evaluations requiring a Project Recovery Plan, in accordance with Title 43, Texas Administrative Code (TAC) §9.23,
- requiring the Contractor to remove and replace defective work, or reducing payment for defective work,
- removing an individual from the project,
- suspending the work without suspending working day charges,
- 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,
- withholding estimates,
- declaring the Contractor to be in default of the Contract, and
- in case of a Contractor's failure to meet a Project Recovery Plan, referring the issue directly to the Performance Review Committee for consideration of further action against the Contractor in accordance with 43 TAC §9.24.

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.

Special Provision to Item 5

Control of the Work



Item 5, "Control of the Work" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 5.4, "Coordination of Plans, Specifications, and Special Provisions," the last sentence of the last paragraph is replaced by the following:

Failure to promptly notify the Engineer will constitute a waiver of all contract claims against the Department for misunderstandings or ambiguities that result from the errors, omissions, or discrepancies.

Special Provision to Item 6

Control of Materials



For this project, Item 6, "Control of Materials," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 4., "Sampling, Testing, and Inspection," is supplemented by the following:

Meet with the Engineer and choose either the Department or a Department-selected Commercial Lab (CL) for conducting the subset of project-level sampling and testing shown in Table 1, "Select Guide Schedule Sampling and Testing." Selection may be made on a test by test basis. CLs will meet the testing turnaround times shown (includes test time and time for travel/sampling and reporting) and in all cases issue test reports as soon as possible.

If the Contractor chooses a Department-selected CL for any Table 1 sampling and testing:

- notify the Engineer, District Lab, and the CL of project scheduling that may require CL testing;
- provide the Engineer, District Lab, and CL at least 24 hours' notice by phone and e-mail;
- reimburse the Department for CL Table 1 testing using the contract fee schedule for the CL (including mileage and travel/standby time) at the minimum guide schedule testing frequencies;
- reimburse the Department for CL Table 1 testing above the minimum guide schedule frequencies for retesting when minimum frequency testing results in failures to meet specification limits;
- agree with the Engineer and CL upon a policy regarding notification for testing services;
- give any cancellation notice to the Engineer, District Lab, and CL by phone and e-mail;
- reimburse the Department a \$150 cancellation fee to cover technician time and mileage charges for previously scheduled work cancelled without adequate notice, which resulted in mobilization of technician and/or equipment by the CL; and
- all CL charges will be reimbursed to the Department by a deduction from the Contractor's monthly pay estimate.

If the CL does not meet the Table 1 turnaround times, testing charge to the Contractor will be reduced by 50% for the first late day and an additional 5% for each succeeding late day.

Approved CL project testing above the minimum testing frequencies in the Guide Schedule of Sampling and Testing, and not as the result of failing tests, will be paid by the Department.

Other project-level Guide Schedule sampling and testing not shown on Table 1 will be the responsibility of the Department.

**Table 1
Select Guide Schedule Sampling and Testing (Note 1)**

| TxDOT Test | Test Description | Turn-Around Time (Calendar days) |
|---|---|---|
| SOILS/BASE | | |
| Tex-101-E | Preparation of Soil and Flexible Base Materials for Testing (included in other tests) | |
| Tex-104-E | Liquid Limit of Soils (included in 106-E) | |
| Tex-105-E | Plastic Limit of Soils (included in 106-E) | |
| Tex-106-E | Calculating the Plasticity Index of Soils | 7 |
| Tex-110-E | Particle Size Analysis of Soils | 6 |
| Tex-113-E | Moisture-Density Relationship of Base Materials | 7 |
| Tex-114-E | Moisture-Density Relationship of Subgrade and Embankment Soil | 7 |
| Tex-115-E | Field Method for In-Place Density of Soils and Base Materials | 2 |
| Tex-116-E | Ball Mill Method for the Disintegration of Flexible Base Material | 5 |
| Tex-117-E, Part II | Triaxial Compression Tests For Disturbed Soils and Base Materials (Part II) | 6 |
| Tex-113-E w/ Tex-117-E | Moisture-Density Relationship of Base Materials with Triaxial Compression Tests For Disturbed Soils and Base Materials (Part II) | 10 |
| Tex-140-E | Measuring Thickness of Pavement Layer | 2 |
| Tex-145-E | Determining Sulfate Content in Soils - Colorimetric Method | 4 |
| HOT MIX ASPHALT | | |
| Tex-200-F | Sieve Analysis of Fine and Coarse Aggregate (dry, from ignition oven with known correction factors) | 1 (Note 2) |
| Tex-203-F | Sand Equivalent Test | 3 |
| Tex-206-F, w/ Tex-207-F, Part I, w/ Tex-227-F | (Lab-Molded Density of Production Mixture – Texas Gyrotory) Method of Compacting Test Specimens of Bituminous Mixtures with Density of Compacted Bituminous Mixtures, Part I - Bulk Specific Gravity of Compacted Bituminous Mixtures, with Theoretical Maximum Specific Gravity of Bituminous Mixtures | 1 (Note 2) |
| Tex-207-F, Part I &/or Part VI | (In-Place Air Voids of Roadway Cores) Density of Compacted Bituminous Mixtures, Part I- Bulk Specific Gravity of Compacted Bituminous Mixtures &/or Part VI - Bulk Specific Gravity of Compacted Bituminous Mixtures Using the Vacuum Method | 1 (Note 2) |
| Tex-207-F, Part V | Density of Compacted Bituminous Mixtures, Part V- Determining Mat Segregation using a Density-Testing Gauge | 3 |
| Tex-207-F, Part VII | Density of Compacted Bituminous Mixtures, Part VII - Determining Longitudinal Joint Density using a Density-Testing Gauge | 4 |
| Tex-212-F | Moisture Content of Bituminous Mixtures | 3 |
| Tex-217-F | Deleterious Material and Decantation Test for Coarse Aggregate | 4 |
| Tex-221-F | Sampling Aggregate for Bituminous Mixtures, Surface Treatments, and LRA (included in other tests) | |
| Tex-222-F | Sampling Bituminous Mixtures (included in other tests) | |
| Tex-224-F | Determination of Flakiness Index | 3 |
| Tex-226-F | Indirect Tensile Strength Test (production mix) | 4 |
| Tex-235-F | Determining Draindown Characteristics in Bituminous Materials | 3 |
| Tex-236-F (Correction Factors) | Asphalt Content from Asphalt Paving Mixtures by the Ignition Method (Determining Correction Factors) | 4 |
| Tex-236-F | Asphalt Content from Asphalt Paving Mixtures by the Ignition Method (Production Mixture) | 1 (Note 2) |
| Tex-241-F w/ Tex-207-F, Part I, w/ Tex-227-F | (Lab-Molded Density of Production Mixture – Superpave Gyrotory) Superpave Gyrotory Compacting of Specimens of Bituminous Mixtures (production mixture) with Density of Compacted Bituminous Mixtures, Part I- Part I - Bulk Specific Gravity of Compacted Bituminous Mixtures, with Theoretical Maximum Specific Gravity of Bituminous Mixtures | 1 (Note 2) |
| Tex-242-F | Hamburg Wheel-Tracking Test (production mix, molded samples) | 3 |
| Tex-244-F | Thermal Profile of Hot Mix Asphalt | 1 |
| Tex-246-F | Permeability of Water Flow of Hot Mix Asphalt | 3 |
| Tex-280-F | Flat and Elongated Particles | 3 |
| Tex-530-C | Effect of Water on Bituminous Paving Mixtures (production mix) | 4 |

| AGGREGATES | | |
|--|--|----|
| Tex-400-A | Sampling Flexible Base, Stone, Gravel, Sand, and Mineral Aggregates | 3 |
| Tex-410-A | Abrasion of Coarse Aggregate Using the Los Angeles Machine | 5 |
| Tex-411-A | Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate | 12 |
| Tex-461-A | Degradation of Coarse Aggregate by Micro-Deval Abrasion | 5 |
| CHEMICAL | | |
| Tex-612-J | Acid Insoluble Residue for Fine Aggregate | 4 |
| GENERAL | | |
| HMA Production Specialist [TxAPA – Level 1-A] (\$/hr) | | |
| HMA Roadway Specialist [TxAPA – Level 1-B] (\$/hr) | | |
| Technician Travel/Standby Time (\$/hr) | | |
| Per Diem (\$/day – meals and lodging) | | |
| Mileage Rate (\$/mile from closest CL location) | | |
| Note 1– Turn-Around Time includes test time and time for travel/sampling and reporting. Note 2 – These tests require turn-around times meeting the governing specifications. Provide test results within the stated turn-around time. CL is allowed one additional day to provide the signed and sealed report. | | |

Special Provision to Item 6

Control of Materials



Item 6, "Control of Materials" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 6.10., "Hazardous Materials," is voided and replaced by the following:

Comply with the requirements of Article 7.12., "Responsibility for Hazardous Materials."

Notify the Engineer immediately when a visual observation or odor indicates that materials on sites owned or controlled by the Department may contain hazardous materials. Except as noted herein, the Department is responsible for testing, removing, and disposing of hazardous materials not introduced by the Contractor. The Engineer may suspend work wholly or in part during the testing, removing, or disposing of hazardous materials, except in the case where hazardous materials are introduced by the Contractor.

Use materials that are free of hazardous materials. Notify the Engineer immediately if materials are suspected to contain hazardous materials. If materials delivered to the project 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. Working day charges will not be suspended and extensions of working days 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 and will adjust working day charges if the Contractor can show that this work impacted the critical path.

10.1. Painted Steel Requirements. Coatings on existing steel contain hazardous materials unless otherwise shown on the plans. Remove paint and dispose of steel coated with paint containing hazardous materials in accordance with the following:

10.1.1. Removing Paint From Steel For contracts that are specifically for painting steel, Item 446, "Field Cleaning and Painting Steel" will be included as a pay item. Perform work in accordance with that item.

For projects where paint must be removed to allow for the dismantling of steel or to perform other work, the Department will provide for a separate contractor (third party) to remove paint containing hazardous materials prior to or during the Contract. Remove paint covering existing steel shown not to contain hazardous materials in accordance with Item 446, "Field Cleaning and Painting Steel."

10.1.2. Removal and Disposal of Painted Steel. For steel able to be dismantled by unbolting, paint removal will not be performed by the Department. The Department will remove paint, at locations shown on the plans or as agreed, for the Contractor's cutting and dismantling purposes. Utilize Department cleaned locations for dismantling when provided or provide own means of dismantling at other locations.

Painted steel to be retained by the Department will be shown on the plans. For painted steel that contains hazardous materials, dispose of the painted steel at a steel recycling or smelting facility unless otherwise shown on the plans. Maintain and make available to the Engineer invoices and other records obtained from the facility showing the received weight of the steel and the facility name. Dispose of steel that does not contain hazardous material coatings in accordance with federal, state and local regulations.

10.2. Asbestos Requirements. The plans will indicate locations or elements where asbestos containing materials (ACM) are known to be present. Where ACM is known to exist or where previously unknown ACM has been found, the Department will arrange for abatement by a separate contractor prior to or during the Contract. Notify the Engineer of proposed dates of demolition or removal of structural elements with ACM at least 60 days before beginning work to allow the Department sufficient time for abatement.

The Department of State Health Services (DSHS), Asbestos Programs Branch, is responsible for administering the requirements of the National Emissions Standards for Hazardous Air Pollutants, 40 CFR Part 61, Subpart M and the Texas Asbestos Health Protection Rules (TAHPR). Based on EPA guidance and regulatory background information, bridges are considered to be a regulated "facility" under NESHAP. Therefore, federal standards for demolition and renovation apply.

The Department is required to notify the DSHS at least 10 working days (by postmarked date) before initiating demolition or renovation of each structure or load bearing member shown on the plans. If the actual demolition or renovation date is changed or delayed, notify the Engineer in writing of the revised dates in sufficient time to allow for the Department's notification to DSHS to be postmarked at least 10 days in advance of the actual work.

Failure to provide the above information may require the temporary suspension of work under Article 8.4., "Temporary Suspension of Work or Working Day Charges," due to reasons under the control of the Contractor. The Department retains the right to determine the actual advance notice needed for the change in date to address post office business days and staff availability.

10.3. Lead Abatement. Provide traffic control as shown on the plans, and coordinate and cooperate with the third party and the Department for managing or removing hazardous materials. Work for the traffic control shown on the plans and coordination work will not be paid for directly but will be subsidiary to pertinent Items.

Special Provision to Item 7

Legal Relations and Responsibilities



Item 7, "Legal Relations and Responsibilities," of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 7.7.2., "Texas Pollutant Discharge Elimination System (TPDES) Permits and Storm Water Pollution Prevention Plans (SWP3)," is voided and replaced by the following:

7.2. Texas Pollution Discharge Elimination System (TPDES) Permits and Storm Water Pollution Prevention Plans (SWP3).

7.2.1. Projects with less than one acre of soil disturbance including required associated project specific locations (PSL's) per TPDES GP TXR 150000.

No posting or filing will be required for soil disturbances within the right of way. Adhere to the requirements of the SWP3.

7.2.2. Projects with one acre but less than five acres of soil disturbance including required associated PSL's per TPDES GP TXR 150000.

The Department will be considered a primary operator for Operational Control Over Plans and Specifications as defined in TPDES GP TXR 150000 for construction activity in the right of way. The Department will post a small site notice along with other requirements as defined in TPDES GP TXR 150000 as the entity of having operational control over plans and specifications for work shown on the plans in the right of way.

The Contractor will be considered a Primary Operator for Day-to-Day Operational Control as defined in TPDES GP TXR 150000 for construction activity in the right of way. In addition to the Department's actions, the Contractor will post a small site notice along with other requirements as defined in TPDES GP TXR 150000 as the entity of having day-to-day operational control of the work shown on the plans in the right of way. This is in addition to the Contractor being responsible for TPDES GP TXR 150000 requirements for on- right of way and off- right of way PSL's. Adhere to all requirements of the SWP3 as shown on the plans. The Contractor will be responsible for Implement the SWP3 for the project site in accordance with the plans and specifications, TPDES General Permit TXR150000, and as directed.

7.2.3. Projects with 5 acres or more of soil disturbance including required associated PSL's per TPDES GP TXR 150000.

The Department will be considered a primary operator for Operational Control Over Plans and Specifications as defined in TPDES GP TXR 150000 for construction activities in the right of way. The Department will post a large site notice, file a notice of intent (NOI), notice of change (NOC), if applicable, and a notice of termination (NOT) along with other requirements per TPDES GP TXR 150000 as the entity having operational control over plans and specifications for work shown on the plans in the right of way.

The Contractor will be considered a primary operator for Day-to-Day Operational Control as defined in TPDES GP TXR 150000 for construction activities in the right of way. In addition to the Department's actions, the Contractor shall file a NOI, NOC, if applicable, and NOT and post a large site notice along with other requirements as the entity of having day-to-day operational control of the work shown on the plans in the right of way. This is in addition to the Contractor

being responsible for TPDES GP TXR 150000 requirements for on- right of way and off- right of way PSL's. Adhere to all requirements of the SWP3 as shown on the plans.

Special Provision to Item 7

Legal Relations and Responsibilities



Item 7, "Legal Relations and Responsibilities," of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 7.2.4., "Public Safety and Convenience." The first paragraph is deleted and replaced by the following.

Ensure the safety and convenience of the public and property as provided in the Contract and as directed. Keep existing roadways open to traffic or construct and maintain detours and temporary structures for safe public travel. Manage construction to minimize disruption to traffic. Maintain the roadway in a good and passable condition, including proper drainage and provide for ingress and egress to adjacent property.

If the construction of the project requires the closing of a highway, as directed, coordinate the closure with the Engineer and work to ensure all lanes and ramps possible are available during peak traffic periods before, during, and after significant traffic generator events to avoid any adverse economic impact on the municipalities during:

- dates or events as shown on the plans, and
- other dates as directed.

Special Provision to Item 007

Legal Relations and Responsibilities



Item 7, "Legal Relations and Responsibilities," of the Standard Specifications is amended with respect to the clauses cited below.

Section 2.6., "Barricades, Signs, and Traffic Handling," the first paragraph is voided and replaced by the following:

- 2.6. **Barricades, Signs, and Traffic Handling.** Comply with the requirements of Item 502 "Barricades, Signs, and Traffic Handling," and as directed. Provide traffic control devices that conform to the details shown on the plans, the TMUTCD, and the Department's Compliant Work Zone Traffic Control Device List maintained by the Traffic Safety Division. When authorized or directed, provide additional signs or traffic control devices not required by the plans.

Section 2.6.1., "Contractor Responsible Person and Alternative," is voided and replaced by the following:

- 2.6.1. **Contractor Responsible Person and Alternative.** Designate in writing, a Contractor's Responsible Person (CRP) and an alternate to be the representative of the Contractor who is responsible for taking or directing corrective measures regarding the traffic control. The CRP or alternate must be accessible by phone 24 hr. per day and able to respond when notified. The CRP and alternate must comply with the requirements of Section 2.6.5., "Training."

Section 2.6.2, "Flaggers," the first paragraph is voided and replaced by the following:

- 2.6.2. **Flaggers.** Designate in writing, a flagger instructor who will serve as a flagging supervisor and is responsible for training and assuring that all flaggers are qualified to perform flagging duties. Certify to the Engineer that all flaggers will be trained and make available upon request a list of flaggers trained to perform flagging duties.

Section 2.6.5, "Training," is voided and replaced by the following:

- 2.6.5. **Training.** Train workers involved with the traffic control using Department-approved training as shown on the "Traffic Control Training" Material Producer List.

Coordinate enrollment, pay associated fees, and successfully complete Department-approved training or Contractor-developed training. Training is valid for the period prescribed by the provider. Except for law enforcement personnel training, refresher training is required every 4 yr. from the date of completion unless otherwise specified by the course provider. The Engineer may require training at a frequency instead of the period prescribed based on the Department's needs. Training and associated fees will not be measured or paid for directly but are considered subsidiary to pertinent Items.

Certify to the Engineer that workers involved in traffic control and other work zone personnel have been trained and make available upon request a copy of the certification of completion to the Engineer. Ensure the following is included in the certification of completion:

- name of provider and course title,
- name of participant,
- date of completion, and
- date of expiration.

Where Contractor-developed training or a Department-approved training course does not produce a certification, maintain a log of attendees. Make the log available upon request. Ensure the log is legible and includes the following:

- printed name and signature of participant,
- name and title of trainer, and
- date of training.

2.6.5.1. **Contractor-developed Training.** Develop and deliver Contractor-developed training meeting the minimum requirements established by the Department. The outline for this training must be submitted to the Engineer for approval at the preconstruction meeting. The CRP or designated alternate may deliver the training instead of the Department-approved training. The work performed and materials furnished to develop and deliver the training will not be measured or paid for directly but will be considered subsidiary to pertinent Items.

2.6.5.1.1. **Flagger Training Minimum Requirements.** A Contractor's certified flagging instructor is permitted to train other flaggers.

2.6.5.1.2. **Optional Contractor-developed Training for Other Work Zone Personnel.** For other work zone personnel, the Contractor may provide training meeting the curriculum shown below instead of Department-approved training.

Minimum curriculum for Contractor-provided training is as follows:

Contractor-developed training must provide information on the use of personnel protection equipment, occupational hazards and health risks, and other pertinent topics related to traffic management. The type and amount of training will depend on the job duties and responsibilities. Develop training applicable to the work being performed. Develop training to include the following topics.

- The Life You Save May Be Your Own (or other similar company safety motto).
- Purpose of the training.
 - It's the Law.
 - To make work zones safer for workers and motorist.
 - To understand what is needed for traffic control.
 - To save lives including your own.
- Personal and Co-Worker Safety.
 - **High Visibility Safety Apparel.** Discuss compliant requirements; inspect regularly for fading and reduced reflective properties; if night operations are required, discuss the additional and appropriate required apparel in addition to special night work risks; if moving operations are underway, discuss appropriate safety measures specific to the situation and traffic control plan.
 - **Blind Areas.** A blind area is the area around a vehicle or piece of construction equipment not visible to the operators, either by line of sight or indirectly by mirrors. Discuss the "Circle of Safety" around equipment and vehicles; use of spotters; maintain eye contact with equipment operators; and use of hand signals.
 - **Runovers and Backovers.** Remain alert at all times; keep a safe distance from traffic; avoid turning your back to traffic and if you must then use a spotter; and stay behind protective barriers, whenever possible. Note: It is not safe to sit on or lean against a concrete barrier, these barriers can deflect four plus feet when struck by a vehicle.
 - Look out for each other, warn co-workers.
 - Be courteous to motorists.
 - Do not run across active roadways.
 - Workers must obey traffic laws and drive courteously while operating vehicles in the work zones.
 - Workers must be made aware of company distracted driving policies.
- **Night Time Operations.** Focus should be placed on projects with a nighttime element.

- **Traffic Control Training.** Basics of Traffic Control.
 - Identify work zone traffic control supervisor and other appropriate persons to report issues to when they arise.
 - Emphasize that work zone traffic control devices must be in clean and in undamaged condition. If devices have been hit but not damaged, put back in their correct place and report to traffic control supervisor. If devices have been damaged, replace with new one and report to traffic control supervisor. If devices are dirty, faded or have missing or damaged reflective tape clean or replace and report to traffic control supervisor. Show examples of non-acceptable device conditions. Discuss various types of traffic control devices to be used and where spacing requirements can be found.
 - **Channelizing Devices and Barricades with Slanted Stripes.** Stripes are to slant in the direction you want traffic to stay or move to; demonstrate this with a device.
 - **Traffic Queuing.** Workers must be made aware of traffic queuing and the dangers created by it. Workers must be instructed to immediately notify the traffic control supervisor and other supervisory personnel if traffic is queuing beyond advance warning sign and devices or construction limits.
 - **Signs.** Signs must be straight and not leaning. Report problems to the traffic control supervisor or other as designated for immediate repair. Covered signs must be fully covered. If covers are damaged or out of place, report to traffic control supervisor or other as designated.

Special Provision to Item 8 Prosecution and Progress



Item 8, "Prosecution and Progress" of the Standard Specification is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 8.2., "Subcontracting," is supplemented by the following paragraph, which is added as paragraph six to this article:

The Contractor certifies by signing the Contract that the Contractor will not enter into any subcontract with a subcontractor that is not registered in the Department of Homeland Security's (DHS) E-Verify system. Require that all subcontractors working on the project register and require that all subcontractors remain active in the DHS E-Verify system until their work is complete on the project.

Special Provision to Item 8 Prosecution and Progress



Item 8, "Prosecution and Progress" of the Standard Specifications is amended with respect to the clause cited below. No other clauses or requirements of this Item are waived or changed.

Article 8.7.2., "Wrongful Default," is revised and replaced by the following:

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 Article 8.8 "Termination of Contract."

Special Provision to Item 009

Measurement and Payment



Item 009 "Measurement and Payment" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 9.5., "PROGRESS PAYMENTS" is supplemented with the following:

It is the Department's desire 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 and MOH 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.

Article 9.6., "PAYMENT FOR MATERIAL ON HAND (MOH)" first paragraph is amended as follows:

If payment for MOH is desired, request compensation for the invoice cost of acceptable nonperishable materials that have not been used in the work before the request, and that have been delivered to the work location or are in acceptable storage places. Nonperishable materials are those that do not have a shelf life or whose characteristics do not materially change when exposed to the elements. Include only materials that have been sampled, tested, approved, or certified, and are ready for incorporation into the work. Only materials which are completely constructed or fabricated on the Contractor's order for a specific Contract and are so marked and on which an approved test report has been issued are eligible. Payment for MOH may include the following types of items: concrete traffic barrier, precast concrete box culverts, concrete piling, reinforced concrete pipe, and illumination poles. Any repairs required after fabricated materials have been approved for storage will require approval of the Engineer before being made and will be made at the Contractor's expense. Include only those materials and products, when cumulated under an individual item or similar bid items, that have an invoice cost of at least \$1,000 in the request for MOH payment (e.g. For MOH eligibility, various sizes of conductor are considered similar bid items and may be cumulated to meet the threshold; for small roadside signs, the sign supports, mounting bolts, and the sign face is considered one bid item or similar bid items for more than one pay item for sign supports.) Requests for MOH are to be submitted at least two days before but not later than the estimate cutoff date unless otherwise agreed. If there is a need to request MOH after the established cut-off date, the district can make accommodation as the need arises. This needed accommodation is to be the exception, though, and not the rule.

Special Provision to Item 9

Measurement and Payment



Item 9, "Measurement and Payment" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 9.7.1.4.3., "Standby Equipment Costs," is voided and replaced by the following:

7.1.4.3. **Standby Equipment Costs.** Payment for standby equipment will be made in accordance with Section 9.7.1.4., "Equipment," except that the 15% markup will not be allowed and that:

Section 7.1.4.3.1., "Contractor-Owned Equipment," is voided and replaced by the following:

7.1.4.3.1. **Contractor-Owned Equipment.** For Contractor-owned equipment:

- Standby will be paid at 50% of the monthly Equipment Watch rate after the regional and age adjustment factors have been applied. Operating costs will not be allowed. Calculate the standby rate as follows.

$$\text{Standby rate} = (\text{FHWA hourly rate} - \text{operating costs}) \times 50\%$$

- If an hourly rate is needed, divide the monthly *Equipment Watch* rate by 176.
- No more than 8 hr. of standby will be paid during a 24-hr. day period, nor more than 40 hr. per week.
- Standby costs will not be allowed during periods when the equipment would have otherwise been idle.

Special Provision to Item 302

Aggregates for Surface Treatments



Item 302, "Aggregates for Seal Coats," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Section 2.1., "Aggregate." Tables 2 and 3 are voided and replaced by the following.

Table 2
Aggregate Gradation Requirements (Cumulative % Retained¹)

| Sieve | Grade | | | | | | | | |
|-------|--------|--------|-----------------|-----------------|-------------|-----------------|--------|-----------------|--------|
| | 1 | 2 | 3S ² | 3 | | 4S ² | 4 | 5S ² | 5 |
| | | | | Non-Lightweight | Lightweight | | | | |
| 1" | - | - | - | - | - | - | - | - | - |
| 7/8" | 0-2 | 0 | - | - | - | - | - | - | - |
| 3/4" | 20-35 | 0-2 | 0 | 0 | 0 | - | - | - | - |
| 5/8" | 85-100 | 20-40 | 0-5 | 0-5 | 0-2 | 0 | 0 | - | - |
| 1/2" | - | 80-100 | 55-85 | 20-40 | 10-25 | 0-5 | 0-5 | 0 | 0 |
| 3/8" | 95-100 | 95-100 | 95-100 | 80-100 | 60-80 | 60-85 | 20-40 | 0-5 | 0-5 |
| 1/4" | - | - | - | 95-100 | 95-100 | - | - | 65-85 | - |
| #4 | - | - | - | - | - | 95-100 | 95-100 | 95-100 | 50-80 |
| #8 | 99-100 | 99-100 | 99-100 | 98-100 | 98-100 | 98-100 | 98-100 | 98-100 | 98-100 |

1. Round test results to the nearest whole number.
2. Single-size gradation.

Table 3
Aggregate Quality Requirements

| Property | Test Method | Requirement ¹ | |
|---|------------------------------------|--------------------------|---------|
| | | Minimum | Maximum |
| SAC | AQMP | As shown on the plans | |
| Deleterious Material ² , % | Tex-217-F , Part I | - | 2.0 |
| Decantation, % | Tex-406-A | - | 1.5 |
| Flakiness Index, % | Tex-224-F | - | 17 |
| Gradation | Tex-200-F , Part I | Table 2 Requirements | |
| Los Angeles Abrasion, % | Tex-410-A | - | 35 |
| Magnesium Sulfate Soundness, 5 Cycle, % | Tex-411-A | - | 25 |
| Micro-Deval Abrasion, % | Tex-461-A | Note 3 | |
| Coarse Aggregate Angularity ⁴ , 2 Crushed Faces, % | Tex-460-A , Part I | 85 | - |
| Additional Requirements for Lightweight Aggregate | | | |
| Dry Loose Unit Wt., lb./cu. ft. | Tex-404-A | 35 | 60 |
| Pressure Slaking, % | Tex-431-A | - | 6.0 |
| Freeze-Thaw Loss, % | Tex-432-A | - | 10.0 |
| Water Absorption, 24hr., % | Tex-433-A | - | 12.0 |

1. Material requirements are listed below, unless otherwise shown on the plans.
2. Not required for lightweight aggregate.
3. Used to estimate the magnesium sulfate soundness loss in accordance with Section 2.1.1.
4. Only required for crushed gravel.

Section 2.1.1., “Micro-Deval Abrasion,” is added.

The Engineer will perform a minimum of one Micro-Deval abrasion test in accordance with [Tex-461-A](#) for each coarse aggregate source per project that has a Rated Source Soundness Magnesium (RSSM) loss value greater than 15 as listed in the BRSQC. 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 by the Engineer. The Engineer may require additional testing before granting approval.

Section 2.2., “Precoating.” The third paragraph is voided and replaced by the following.

The Engineer retains the right to remove precoat material from aggregate samples in accordance with [Tex-210-F](#), or as recommended by the Construction Division, and test the aggregate to verify compliance with Table 2 and Table 3 requirements. Gradation testing may be performed with precoat intact.

Section 2.3., “Sampling,” is added.

Personnel who conduct sampling and witnessing of sampling must be certified by the Department-approved certification program. Supply the Engineer with a list of certified personnel and copies of their current certificates before beginning construction and when personnel changes are made. At any time during the project, the Engineer may perform production tests as deemed necessary in accordance with Item 5, “Control of the Work.”

The Engineer will sample aggregate from stockpiles located at the production site, intermediate distribution site, or project location in accordance with [Tex-221-F](#), Section 3.2.3. The Engineer will split each sample into 2 equal portions in accordance with [Tex-200-F](#), Section 3.3, and label these portions “Engineer” and “Contractor” or “Supplier.” Witness the sampling and splitting, and take immediate possession of the samples labeled “Contractor” or “Supplier”.

Section 2.4., “Reporting and Responsibilities,” is added.

The Engineer will provide test results to the Contractor and Supplier within 10 working days from the date the stockpile was sampled for sources listed on the Department’s Bituminous Rated Source Quality Catalog (BRSQC), unless otherwise directed. The Engineer will provide test results for the LA Abrasion ([Tex-410-A](#)) and Magnesium Sulfate Soundness ([Tex-411-A](#)) tests within 30 calendar days for sources not listed on the BRSQC, or for sources not meeting the requirements of Section 2.1.1., “Micro-Deval Abrasion.” The Engineer will report to the other party within 24 hours when any test result does not meet the requirements listed in Table 2 or Table 3.

Special Provision to Item 712

Cleaning and Sealing Joints and Cracks (Asphalt Concrete)



Item 712, "Cleaning and Sealing Joints and Cracks (Asphalt Concrete)" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 712.4., "Work Methods," is voided and replaced by the following:

Apply material when the air or pavement temperature is within the manufacturer's recommendations or as approved. For cracks 1/2 in. to 1-1/2 in. in width, fill with standard hot applied crack sealant. For cracks wider than 1-1/2 in., fill with Department Item 721, "Fiber Reinforced Polymer Patching Material." Installation method as shown on the plans. Rout joints and cracks to the configuration shown on the plans when required. Clean joints and cracks with air blast cleaning or other acceptable methods to a depth at least twice the joint or crack width. Joints and cracks must be free of moisture before sealing. Dispose of materials removed as directed or approved. Apply sealing material with a pressure nozzle. Completely fill cracks and joints. Squeegee material to no more than 3 in. wide and 1/8 in. above the pavement surface. Prevent tracking with an application of fine aggregate as directed.

Special Provision to Item 721

Fiber Reinforced Polymer Patching Material



Item 721, "Fiber Reinforced Polymer Patching Material" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 3.1., "Sampling and Testing" is voided and replaced by the following:

- 3.1. **Sampling and Testing.** Provide material that has been preapproved by the Department in accordance with Tex-538-C, "Quality Monitoring for Joint Sealers and Related Materials." Submit blended samples of patching material for preapproval or field evaluation when requested.

Special Provision to Item 721

Fiber Reinforced Polymer Patching Material



Item 721, "Fiber Reinforced Polymer Patching Material" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 3., "Materials," Table 1 is voided and replaced by the following:

Table 1
Patching Material Properties

| Property | Test Method | Requirement |
|---------------------------|---------------------------|---|
| Resilience | Tex-547-C | 50% Min |
| Tensile Strain to Failure | Tex-548-C | 20% Min |
| Maximum Tensile Stress | Tex-548-C | 50 psi Min |
| Cone Flow | Tex-549-C | 12% Max (asphalt based) 4% Max (polymer based) |
| Flexibility | Tex-550-C | pass ¹ |
| Settlement | Tex-551-C | 3 mm, Max |

1. No evidence of cracking of the sample.

Section 3.1., "Sampling and Testing," is voided and replaced by the following:

- 3.1. **Sampling and Testing.** Provide material that has been preapproved by the Department in accordance with [Tex-538-C](#), "Quality Monitoring for Rubber Asphalt Crack Sealers and Related Materials." Submit blended samples of patching material for preapproval or field evaluation when requested.

Special Provision to Special Specification 6185

Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA)



Item 6185, "Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA)" of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 4. "Measurement", is voided and replaced by the following:

- 4.1. **Truck Mounted Attenuator/Trailer Attenuator (Stationary).** This Item will be measured by the day. TMA/TAs must be set up in a work area and operational before a calendar day can be considered measurable. A day will be measured for each TMA/TA set up and operational on the worksite.
- 4.2. **Truck Mounted Attenuator/Trailer Attenuator (Mobile Operation).** This Item will be measured by the hour or by the day. The time begins once the TMA/TA is ready for operation at the predetermined site and stops when notified by the Engineer. When measurement by the hour is specified, a minimum of 4 hr. will be paid each day for each operating TMA/TA used in a mobile operation. When measurement by the day is specified, a day will be measured for each TMA/TA set up and operational on the worksite.

Special Specification 3096

Asphalts, Oils, and Emulsions



1. DESCRIPTION

Provide asphalt cements, cutback and emulsified asphalts, performance-graded asphalt binders, and other miscellaneous asphalt materials as specified on the plans.

2. MATERIALS

Provide asphalt materials that meet the stated requirements when tested in conformance with the referenced Department, AASHTO, and ASTM test methods. Use asphalt containing recycled materials only if the recycled components meet the requirements of Article 6.9., "Recycled Materials." Provide asphalt materials that the Department has preapproved for use in accordance with [Tex-545-C](#), "Asphalt Binder Quality Program."

Inform the Department of all additives or modifiers included in the asphalt binder as part of the facility quality plan, as required by [Tex-545-C](#), "Asphalt Binder Quality Program," and provide that information to Department personnel. The Department reserves the right to prohibit the use of any asphalt additive or modifier.

Limit the use of polyphosphoric acid to no more than 0.5% by weight of the asphalt binder.

The use of re-refined engine oil bottoms is prohibited.

Acronyms used in this Item are defined in Table 1.

Table 1
Acronyms

| Acronym | Definition |
|-------------------------------|---|
| Test Procedure Designations | |
| Tex T or R D | Department AASHTO ASTM |
| Polymer Modifier Designations | |
| P SBR or L SBS TR | polymer-modified styrene-butadiene rubber (latex) styrene-butadiene-styrene block co-polymer tire rubber (from ambient temperature grinding of truck and passenger tires) |
| AC | asphalt cement |
| AE | asphalt emulsion |
| AE-P | asphalt emulsion prime |
| A-R | asphalt-rubber |
| C | cationic |
| EAP&T | emulsified asphalt prime and tack |
| EBL | emulsified bonding layer |
| FDR | full depth reclamation |
| H-suffix | harder residue (lower penetration) |
| HF | high float |
| HY | high yield |
| MC | medium-curing |
| MS | medium-setting |
| PCE | prime, cure, and erosion control |
| PG | performance grade |
| RC | rapid-curing |
| RS | rapid-setting |
| S-suffix | stockpile usage |
| SCM | special cutback material |
| SS | slow-setting |
| SY | standard yield |
| TRAIL | tracking resistant asphalt interlayer |

2.1.

Asphalt Cement. Provide asphalt cement that is homogeneous, water-free, and nonfoaming when heated to 347°F, and meets the requirements in Table 2.

Table 2
Asphalt Cement

| Property | Test Procedure | Viscosity Grade | | | | | | | | | |
|---|---------------------------|-----------------|-----|--------|-----|------|-----|------|-------|-------|-------|
| | | AC-0.6 | | AC-1.5 | | AC-3 | | AC-5 | | AC-10 | |
| | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| Viscosity 140°F, poise 275°F, poise | T 202 | 40 | 80 | 100 | 200 | 250 | 350 | 400 | 600 | 800 | 1,200 |
| | | 0.4 | – | 0.7 | – | 1.1 | – | 1.4 | – | 1.9 | – |
| Penetration, 77°F, 100g, 5 sec. | T 49 | 350 | – | 250 | – | 210 | – | 135 | – | 85 | – |
| Flash point, C.O.C., °F | T 48 | 425 | – | 425 | – | 425 | – | 425 | – | 450 | – |
| Solubility in trichloroethylene, % | T 44 | 99.0 | – | 99.0 | – | 99.0 | – | 99.0 | – | 99.0 | – |
| Spot test | Tex-509-C | Neg. | | Neg. | | Neg. | | Neg. | | Neg. | |
| Tests on residue from RTFOT: Viscosity, 140°F, poise Ductility, ¹ 77°F 5 cm/min., cm | T 240 | | | | | | | | | | |
| | T 202 | – | 180 | – | 450 | – | 900 | – | 1,500 | – | 3,000 |
| | T 51 | 100 | – | 100 | – | 100 | – | 100 | – | 100 | – |

1. If AC-0.6 or AC-1.5 ductility at 77°F is less than 100 cm, material is acceptable if ductility at 60°F is more than 100 cm.

- 2.2. **Polymer-Modified Asphalt Cement.** Provide polymer-modified asphalt cement that is smooth, homogeneous, and meets the requirements Table 3. Supply samples of the base asphalt cement and polymer additives if requested.

Table 3
Polymer-Modified Asphalt Cement

| Property | Test Procedure | Polymer-Modified Viscosity Grade | | | | | | | | | | | |
|---|--|----------------------------------|-----|--------------------|-------|--------|-----|---------|-----|-----------|-----|-----------|------|
| | | AC-12-5TR | | NT-HA ¹ | | AC-15P | | AC-20XP | | AC-10-2TR | | AC-20-5TR | |
| | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| Polymer | | TR | | - | | SBS | | SBS | | TR | | TR | |
| Polymer content, % (solids basis) | Tex-533-C or Tex-553-C | 5.0 | - | - | - | 3.0 | - | - | - | 2.0 | - | 5.0 | - |
| Dynamic shear, G*/sinδ, 82°C, 10 rad/s, kPa | T 315 | | | 1.0 | - | | | | | | | | |
| Dynamic shear, G*/sinδ, 64°C, 10 rad/s, kPa | T 315 | - | - | - | - | - | - | 1.0 | - | - | - | 1.0 | - |
| Dynamic shear, G*/sinδ, 58°C, 10 rad/s, kPa | T 315 | 1.0 | - | - | - | - | - | - | - | 1.0 | - | - | - |
| Viscosity 140°F, poise | T 202 | 1,200 | - | | | 1,500 | - | 2,000 | - | 1,000 | - | 2,000 | - |
| 275°F, poise | T 202 | | | - | 4,000 | - | 8.0 | - | - | - | 8.0 | - | 10.0 |
| Penetration, 77°F, 100 g, 5 sec. | T 49 | 110 | 150 | - | 25 | 100 | 150 | 75 | 115 | 95 | 130 | 75 | 115 |
| Ductility, 5cm/min., 39.2°F, cm | T 51 | | | | | - | - | - | - | - | - | - | - |
| Elastic recovery, 50°F, % | Tex-539-C | 55 | - | | | 55 | - | 55 | - | 30 | - | 55 | - |
| Softening point, °F | T 53 | 113 | - | 170 | - | - | - | 120 | - | 110 | - | 120 | - |
| Polymer separation, 5 hr. | Tex-540-C | None | | | | None | | None | | None | | None | |
| Flash point, C.O.C., °F | T 48 | 425 | - | 425 | - | 425 | - | 425 | - | 425 | - | 425 | - |
| Tests on residue from RTFOT aging and pressure aging: | T 240 and R 28 | | | | | | | | | | | | |
| Creep stiffness S, -18°C, MPa | T 313 | - | 300 | - | - | - | 300 | - | 300 | - | 300 | - | 300 |
| m-value, -18°C | | 0.300 | - | - | - | 0.300 | - | 0.300 | - | 0.300 | - | 0.300 | - |

1. Non-Tracking Hot Applied Tack Coat - TRAIL product

- 2.3. **Cutback Asphalt.** Provide cutback asphalt that meets the requirements of Tables 4, 5, and 6, for the specified type and grade. Supply samples of the base asphalt cement and polymer additives if requested.

Table 4
Rapid-Curing Cutback Asphalt

| Property | Test Procedure | Type-Grade | | | | | |
|---|---------------------------|------------|-------|--------|-------|---------|-------|
| | | RC-250 | | RC-800 | | RC-3000 | |
| | | Min | Max | Min | Max | Min | Max |
| Kinematic viscosity, 140°F, cSt | T 201 | 250 | 400 | 800 | 1,600 | 3,000 | 6,000 |
| Water, % | D95 | – | 0.2 | – | 0.2 | – | 0.2 |
| Flash point, T.O.C., °F | T 79 | 80 | – | 80 | – | 80 | – |
| Distillation test: | T 78 | | | | | | |
| Distillate, percentage by volume of total distillate to 680°F | | | | | | | |
| to 437°F | | 40 | 75 | 35 | 70 | 20 | 55 |
| to 500°F | | 65 | 90 | 55 | 85 | 45 | 75 |
| to 600°F | | 85 | – | 80 | – | 70 | – |
| Residue from distillation, volume % | | 70 | – | 75 | – | 82 | – |
| Tests on distillation residue: | | | | | | | |
| Viscosity, 140°F, poise | T 202 | 600 | 2,400 | 600 | 2,400 | 600 | 2,400 |
| Ductility, 5 cm/min., 77°F, cm | T 51 | 100 | – | 100 | – | 100 | – |
| Solubility in trichloroethylene, % | T 44 | 99.0 | – | 99.0 | – | 99.0 | – |
| Spot test | Tex-509-C | Neg. | | Neg. | | Neg. | |

Table 5
Medium-Curing Cutback Asphalt

| Property | Test Procedure | Type-Grade | | | | | | | |
|---|---------------------------|------------|-------|--------|-------|--------|-------|---------|-------|
| | | MC-30 | | MC-250 | | MC-800 | | MC-3000 | |
| | | Min | Max | Min | Max | Min | Max | Min | Max |
| Kinematic viscosity, 140°F, cSt | T 201 | 30 | 60 | 250 | 500 | 800 | 1,600 | 3,000 | 6,000 |
| Water, % | D95 | – | 0.2 | – | 0.2 | – | 0.2 | – | 0.2 |
| Flash point, T.O.C., °F | T 79 | 95 | – | 122 | – | 140 | – | 149 | – |
| Distillation test: | T 78 | | | | | | | | |
| Distillate, percentage by volume of total distillate to 680°F | | | | | | | | | |
| to 437°F | | – | 35 | – | 20 | – | – | – | – |
| to 500°F | | 30 | 75 | 5 | 55 | – | 40 | – | 15 |
| to 600°F | | 75 | 95 | 60 | 90 | 45 | 85 | 15 | 75 |
| Residue from distillation, volume % | | 50 | – | 67 | – | 75 | – | 80 | – |
| Tests on distillation residue: | | | | | | | | | |
| Viscosity, 140°F, poise | T 202 | 300 | 1,200 | 300 | 1,200 | 300 | 1,200 | 300 | 1,200 |
| Ductility, 5 cm/min., 77°F, cm | T 51 | 100 | – | 100 | – | 100 | – | 100 | – |
| Solubility in trichloroethylene, % | T 44 | 99.0 | – | 99.0 | – | 99.0 | – | 99.0 | – |
| Spot test | Tex-509-C | Neg. | | Neg. | | Neg. | | Neg. | |

Table 6
Special-Use Cutback Asphalt

| Property | Test Procedure | Type-Grade | | | | | |
|---|---------------------------|------------|-------|-------|-------|--------|-------|
| | | MC-2400L | | SCM I | | SCM II | |
| | | Min | Max | Min | Max | Min | Max |
| Kinematic viscosity, 140°F, cSt | T 201 | 2,400 | 4,800 | 500 | 1,000 | 1,000 | 2,000 |
| Water, % | D95 | – | 0.2 | – | 0.2 | – | 0.2 |
| Flash point, T.O.C., °F | T 79 | 150 | – | 175 | – | 175 | – |
| Distillation test: | T 78 | | | | | | |
| Distillate, percentage by volume of total distillate to 680°F | | | | | | | |
| to 437°F | | – | – | – | – | – | – |
| to 500°F | | – | 35 | – | 0.5 | – | 0.5 |
| to 600°F | | 35 | 80 | 20 | 60 | 15 | 50 |
| Residue from distillation, volume % | | 78 | – | 76 | – | 82 | – |
| Tests on distillation residue: | | | | | | | |
| Polymer | | SBR | | – | | – | |
| Polymer content, % (solids basis) | Tex-533-C | 2.0 | – | – | – | – | – |
| Penetration, 100 g, 5 sec., 77°F | T 49 | 150 | 300 | 180 | – | 180 | – |
| Ductility, 5 cm/min., 39.2°F, cm | T 51 | 50 | – | – | – | – | – |
| Solubility in trichloroethylene, % | T 44 | 99.0 | – | 99.0 | – | 99.0 | – |

- 2.4. **Emulsified Asphalt.** Provide emulsified asphalt that is homogeneous, does not separate after thorough mixing, and meets the requirements for the specified type and grade in Tables 7, 8, 9, 10, and 10A-C.

Table 7
Emulsified Asphalt

| Property | Test Procedure | Type-Grade | | | | | | | | | |
|--|------------------------------|-----------------------------|--------------------|-------------------------|--------------------|---------------------------|------------------|-------------------------|--------------------|-----------------------|--------------------|
| | | Rapid-Setting | | Medium-Setting | | | | Slow-Setting | | | |
| | | HFRS-2 | | MS-2 | | AES-300 | | SS-1 | | SS-1H | |
| | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| Viscosity, Saybolt Furol 77°F, sec. 122°F, sec. | T 72 | - | - | - | - | 75 | 400 | 20 | 100 | 20 | 100 |
| Sieve test, % | T 59 | - | 0.1 | - | 0.1 | - | 0.1 | - | 0.1 | - | 0.1 |
| Miscibility | T 59 | - | | - | | - | | Pass | | Pass | |
| Cement mixing, % | T 59 | - | - | - | - | - | - | - | 2.0 | - | 2.0 |
| Coating ability and water resistance: Dry aggregate/after spray Wet aggregate/after spray | T 59 | - | | - | | Good/Fair Fair/Fair | | - | | - | |
| Demulsibility, 35 mL of 0.02 N CaCl ₂ , % | T 59 | 50 | - | - | 30 | - | - | - | - | - | - |
| Storage stability, 1 day, % | T 59 | - | 1 | - | 1 | - | 1 | - | 1 | - | 1 |
| Freezing test, 3 cycles ¹ | T 59 | - | | Pass | | - | | Pass | | Pass | |
| Distillation test: Residue by distillation, % by wt. Oil distillate, % by volume of emulsion | T 59 | 65 | - | 65 | - | 65 | - | 60 | - | 60 | - |
| | | - | 0.5 | - | 0.5 | - | 5 | - | 0.5 | - | 0.5 |
| Tests on residue from distillation: Penetration, 77°F, 100 g, 5 sec. Solubility in trichloroethylene, % Ductility, 77°F, 5 cm/min., cm Float test, 140°F, sec. | T 49 T 44 T 51 T 50 | 100 97.5 100 1,200 | 140 - - - | 120 97.5 100 - | 160 - - - | 300 97.5 - 1,200 | - - - - | 120 97.5 100 - | 160 - - - | 70 97.5 80 - | 100 - - - |

1. Applies only when the Engineer designates material for winter use.

Table 8
Cationic Emulsified Asphalt

| Property | Test Procedure | Type-Grade | | | | | | | | | | | |
|---|----------------------|--------------------|---------------|------------------|---------------|------------------------|---------------|------------------------|-------------|--------------------|---------------|------------------|---------------|
| | | Rapid-Setting | | Medium-Setting | | | | Slow-Setting | | | | | |
| | | CRS-2 | | CRS-2H | | CMS-2 | | CMS-2S | | CSS-1 | | CSS-1H | |
| | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| Viscosity, Saybolt Furol 77°F, sec. 122°F, sec. | T 72 | - | - | - | - | - | - | - | - | 20 | 100 | 20 | 100 |
| Sieve test, % | T 59 | - | 0.1 | - | 0.1 | - | 0.1 | - | 0.1 | - | 0.1 | - | 0.1 |
| Cement mixing, % | T 59 | - | - | - | - | - | - | - | - | - | 2.0 | - | 2.0 |
| Coating ability and water resistance: Dry aggregate/after spray Wet aggregate/after spray | T 59 | - | | - | | Good/Fair Fair/Fair | | Good/Fair Fair/Fair | | - | | - | |
| Demulsibility, 35 mL of 0.8% Sodium dioctyl sulfosuccinate, % | T 59 | 70 | - | 70 | - | - | - | - | - | - | - | - | - |
| Storage stability, 1 day, % | T 59 | - | 1 | - | 1 | - | 1 | - | 1 | - | 1 | - | 1 |
| Particle charge | T 59 | Positive | | Positive | | Positive | | Positive | | Positive | | Positive | |
| Distillation test: Residue by distillation, % by wt. Oil distillate, % by volume of emulsion | T 59 | 65 | - | 65 | - | 65 | - | 65 | - | 60 | - | 60 | - |
| | | - | 0.5 | - | 0.5 | - | 7 | - | 5 | - | 0.5 | - | 0.5 |
| Tests on residue from distillation: Penetration, 77°F, 100 g, 5 sec. Solubility in trichloroethylene, % Ductility, 77°F, 5 cm/min., cm | T 49 T 44 T 51 | 120 97.5 100 | 160 - - | 70 97.5 80 | 110 - - | 120 97.5 100 | 200 - - | 300 97.5 - | - - - | 120 97.5 100 | 160 - - | 70 97.5 80 | 110 - - |

Table 9
Polymer-Modified Emulsified Asphalt

| Property | Test Procedure | Type-Grade | | | | | | | | | |
|---|------------------------------------|---------------|-----|------------------------|-----|------------------------|-----|------------------------|-----|-------|-----|
| | | Rapid-Setting | | Medium-Setting | | | | Slow-Setting | | | |
| | | HFRS-2P | | AES-150P | | AES-300P | | AES-300S | | SS-1P | |
| | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| Viscosity, Saybolt Furol 77°F, sec. 122°F, sec. | T 72 | - | - | 75 | 400 | 75 | 400 | 75 | 400 | 30 | 100 |
| Sieve test, % | T 59 | - | 0.1 | - | 0.1 | - | 0.1 | - | 0.1 | - | 0.1 |
| Miscibility | T 59 | - | | - | | - | | - | | Pass | |
| Coating ability and water resistance: Dry aggregate/after spray Wet aggregate/after spray | T 59 | - | | Good/Fair Fair/Fair | | Good/Fair Fair/Fair | | Good/Fair Fair/Fair | | - | |
| Demulsibility, 35 mL of 0.02 N CaCl ₂ , % | T 59 | 50 | - | - | - | - | - | - | - | - | - |
| Storage stability, 1 day, % | T 59 | - | 1 | - | 1 | - | 1 | - | 1 | - | 1 |
| Breaking index, g | Tex-542-C | - | - | | | | | | | | |
| Distillation test: ¹ Residue by distillation, % by wt. Oil distillate, % by volume of emulsion | T 59 | 65 | - | 65 | - | 65 | - | 65 | - | 60 | - |
| | | - | 0.5 | - | 3 | - | 5 | - | 7 | - | 0.5 |
| Tests on residue from distillation: Polymer content, wt. % (solids basis) | Tex-533-C | 3.0 | - | - | - | - | - | - | - | 3.0 | - |
| Penetration, 77°F, 100 g, 5 sec. | T 49 | 90 | 140 | 150 | 300 | 300 | - | 300 | - | 100 | 140 |
| Solubility in trichloroethylene, % | T 44 | 97.0 | - | 97.0 | - | 97.0 | - | 97.0 | - | 97.0 | - |
| Viscosity, 140°F, poise | T 202 | 1,500 | - | - | - | - | - | - | - | 1,300 | - |
| Float test, 140°F, sec | T 50 | 1,200 | - | 1,200 | - | 1,200 | - | 1,200 | - | - | - |
| Ductility, ² 39.2°F, 5 cm/min., cm | T 51 | 50 | - | - | - | - | - | - | - | 50 | - |
| Elastic recovery, 2 50°F, % | Tex-539-C | 55 | - | - | - | - | - | - | - | - | - |
| Tests on RTFO curing of distillation residue Elastic recovery, 50°F, % | T 240 Tex-536-C | - | - | 50 | - | 50 | - | 30 | - | - | - |

1. Exception to T 59: Bring the temperature on the lower thermometer slowly to 350°F ±10°F. Maintain at this temperature for 20 min. Complete total distillation in 60 min. (±5 min.) from the first application of heat.

2. HFRS-2P must meet one of either the ductility or elastic recovery requirements.

Table 10
Polymer-Modified Cationic Emulsified Asphalt

| Property | Test Procedure | Type-Grade | | | | | | | | | | | |
|--|---------------------------|---------------|-----|----------|-----|------------------|-----|---------------------|-----------------|---------------------|-----------------|--------------|-----|
| | | Rapid-Setting | | | | | | Medium-Setting | | | | Slow-Setting | |
| | | CRS-2P | | CHFRS-2P | | CRS-2TR | | CMS-1P ³ | | CMS-2P ³ | | CSS 1P | |
| | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| Viscosity, Saybolt Furol 77°F, sec. 122°F, sec. | T 72 | - | - | - | - | - | - | 10 | 100 | - | - | 20 | 100 |
| | | 150 | 400 | 100 | 400 | 150 | 500 | - | - | 50 | 400 | - | - |
| Sieve test, % | T 59 | - | 0.1 | - | 0.1 | - | 0.1 | - | 0.1 | - | 0.1 | - | 0.1 |
| Demulsibility, 35 ml of 0.8% sodium dioctyl sulfosuccinate, % | T 59 | 70 | - | 60 | - | 40 | - | - | - | - | - | - | - |
| Storage stability, 1 day, % | T 59 | - | 1 | - | 1 | - | 1 | - | 1 | - | 1 | - | 1 |
| Breaking index, g | Tex-542-C | - | - | - | - | - | - | - | - | - | - | - | - |
| Particle charge | T 59 | Positive | | Positive | | Positive | | Positive | | Positive | | Positive | |
| Distillation test ¹ : | T 59 | | | | | | | | | | | | |
| Residue by distillation, % by weight | | 65 | - | 65 | - | 65 | - | 30 | - | 60 | - | 62 | - |
| Oil distillate, % by volume of emulsion | | - | 0.5 | - | 0.5 | - | 3 | - | 0.5 | - | 0.5 | - | 0.5 |
| Tests on residue from distillation: | | | | | | | | | | | | | |
| Polymer content, wt. % (solids basis) | Tex-533-C | 3.0 | - | 3.0 | - | 5.0 ⁷ | - | - | - | - | - | 3.0 | - |
| Penetration, 77°F, 100 g, 5 sec. | T 49 | 90 | 150 | 80 | 130 | 90 | 150 | 30 | - | 30 | - | 55 | 90 |
| Viscosity, 140°F, poise | T 202 | 1,300 | - | 1,300 | - | 1,000 | - | - | - | - | - | - | - |
| Solubility in trichloroethylene, % | T 44 | 97.0 | - | 95.0 | - | 98 | - | - | - | - | - | 97.0 | - |
| Softening point, °F | T 53 | - | - | - | - | - | - | - | - | - | - | 135 | - |
| Ductility, 77°F, 5 cm/min., cm | T 51 | - | - | - | - | 40 | - | - | - | - | - | 70 | - |
| Float test, 140°F, sec. | T 50 | - | - | 1,800 | - | - | - | - | - | - | - | - | - |
| Ductility, ² 39.2°F, 5 cm/min., cm | T 51 | 50 | - | - | - | - | - | - | - | - | - | - | - |
| Elastic recovery, ² 50°F, % | Tex-539-C | 55 | - | 55 | - | - | - | - | - | - | - | - | - |
| Tests on residue from evaporative recovery: | R 78, Procedure B | | | | | | | | | | | | |
| Nonrecoverable creep compliance of residue, 3.2 kPa, 52°C, kPa ⁻¹ | T 350 | - | - | - | - | - | - | - | 2.0 | - | 4.0 | - | - |
| Tests on rejuvenating agent: | | | | | | | | | | | | | |
| Viscosity, 140°F, cSt | T 201 | - | - | - | - | - | - | 50 | 175 | 50 | 175 | - | - |
| Flash point, C.O.C., °F | T 48 | - | - | - | - | - | - | 380 | - | 380 | - | - | - |
| Saturates, % by weight | D 2007 | - | - | - | - | - | - | - | 30 | - | 30 | - | - |
| Solubility in n-pentane, % by weight | D 2007 | - | - | - | - | - | - | 99 | - | 99 | - | - | - |
| Tests on rejuvenating agent after RTFO | T 240 | | | | | | | | | | | | |
| Weight Change, % | | - | - | - | - | - | - | - | 6.5 | - | 6.5 | - | - |
| Viscosity Ratio | | - | - | - | - | - | - | - | 3.0 | - | 3.0 | - | - |
| Tests on latex ⁴ : | | | | | | | | | | | | | |
| Tensile strength, die C dumbbell, psi | D 412 ⁵ | - | - | - | - | - | - | 800 | - | 800 | - | - | - |
| Change in mass after immersion in rejuvenating agent, % | D 471 | - | - | - | - | - | - | - | 40 ⁶ | - | 40 ⁶ | - | - |

- Exception to T 59: Bring the temperature on the lower thermometer slowly to 350°F (±0°F). Maintain at this temperature for 20 min. Complete total distillation in 60 min. (±5 min.) from the first application of heat.
- CRS-2P must meet one of either the ductility or elastic recovery requirements.
- With all precertification samples of CMS-1P or CMS-2P, submit certified test reports showing that the rejuvenating agent and latex meet the stated requirements. Submit samples of these raw materials if requested by the Engineer.
- Preparation of latex specimens: use any substrate and recovery method which produces specimens of uniform dimensions and which delivers enough material to achieve desired residual thickness.
- Cut samples for tensile strength determination using a crosshead speed of 20 in. per minute.
- Specimen must remain intact after exposure and removal of excess rejuvenating agent.
- Modifier type is tire rubber.

Table 10A
Non-Tracking Tack Coat Emulsion¹

| Property | Test Procedure | NT-HRE | | NT-RRE | | NT-SRE | |
|---|----------------|--------|------|--------|------|--------|-----|
| | | Min | Max | Min | Max | Min | Max |
| Viscosity, Saybolt Furol 77° F, sec. | T 72 | 15 | – | 15 | – | 10 | 100 |
| Storage stability, 1 Day, % | T 59 | – | 1 | – | 1 | – | 1 |
| Settlement, 5-day, % | T 59 | – | 5 | – | 5 | – | 5 |
| Sieve test, % | T 59 | – | 0.30 | – | 0.30 | – | 0.1 |
| Distillation test: ² Residue by distillation, % by wt. Oil distillate, by volume of emulsion | T 59 | 50 | – | 58 | – | 50 | – |
| | | – | 1.0 | – | 1.0 | – | 1.0 |
| Test on residue from distillation: Penetration, 77°F, 100 g, 5 sec. | T 49 | – | 20 | 15 | 45 | 40 | 90 |
| Solubility in trichloroethylene, % | T 44 | 97.5 | – | 97.5 | – | 97.5 | – |
| Softening point, °F | T 53 | 150 | – | – | – | – | – |
| Dynamic shear, G*/sin(δ), 82°C, 10 rad/s, kPa | T 315 | 1.0 | – | – | – | – | – |

1. Due to the hardness of the residue, these emulsions should be heated to 120-140°F before thoroughly mixing as the emulsion is being prepared for testing.
2. Exception to T 59: Bring the temperature on the lower thermometer slowly to 350°F ± 10°F. Maintain at this temperature for 20 min. Complete total distillation in 60 ± 5 min. from first application of heat.

Table 10B
Spray Applied Underseal Membrane Polymer-Modified Emulsions (EBL)

| Property | Test Procedure | Min | Max |
|---|---------------------------|-----|------|
| Viscosity @ 77°F, SSF | T 72 | 20 | 100 |
| Storage Stability ¹ , % | T 59 | – | 1 |
| Demulsibility ² Anionic emulsions – 35 mL of 0.02 N CaCl ₂ , % Cationic emulsions – 35 mL of 0.8% sodium dioctyl sulfosuccinate, % | T 59 | 55 | – |
| Sieve Test ³ , % | T 59 | – | 0.05 |
| Distillation Test ⁴ Residue by distillation, % by wt. Oil portion of distillate, % by vol. | T 59 | 63 | 0.5 |
| Test on Residue from Distillation | | | |
| Elastic Recovery @ 50°F, 50 mm/min., % | Tex-539-C | 60 | – |
| Penetration @ 77°F, 100 g, 5 sec., 0.1 mm | T 49 | 80 | 130 |

1. After standing undisturbed for 24 hr., the surface must be smooth, must not exhibit a white or milky colored substance, and must be a homogeneous color throughout.
2. Material must meet demulsibility test for emulsions.
3. May be required by the Engineer only when the emulsion cannot be easily applied in the field.
4. The temperature on the lower thermometer should be brought slowly to 350°F ± 10°F and maintained at this temperature for 20 min. The total distillation should be completed in 60 ± 5 min. from the first application of heat.

Table 10C
Full-Depth Reclamation Emulsion (FDR EM)

| Property | Test Procedure | Standard Yield (SY) | | High Yield (HY) | |
|---|----------------|---------------------|-----|-----------------|-----|
| | | Min | Max | Min | Max |
| Sieve test, % | T 59 | – | 0.1 | – | 0.1 |
| Viscosity Saybolt Furol @ 77°F, sec. | T 59 | 20 | 100 | 20 | 100 |
| Distillation test ¹ : Residue by distillation, % by wt. Oil portion of distillate, % by vol. | T 59 | 60 | – | 63 | – |
| | | – | 0.5 | – | 0.5 |
| Test on residue from distillation: Penetration @ 77°F, dmm | T 49 | 55 | 95 | 120 | – |
| Test on rejuvenating agent: | | | | | |
| BWOA, % ² | *** | – | – | 2 | – |
| Viscosity @ 140°F, cSt | T 201 | – | – | 50 | 175 |
| Flash Point, COC, °F | T 48 | – | – | 380 | – |
| Solubility in n-pentane, % by wt. | D2007 | – | – | 99 | – |

1. The temperature on the lower thermometer should be brought slowly to 350°F ± 10°F and maintained at this temperature for 20 min. The total distillation should be completed in 60 ± 5 min. from the first application of heat.
2. BWOA = By weight of asphalt. Provide a manufacturer's certificate of analysis (COA) with the percent of rejuvenator added.

2.5.

Specialty Emulsions. Provide specialty emulsion that is either asphalt-based or resin-based and meets the requirements of Table 11 or Table 11A.

Table 11
Specialty Emulsions

| Property | Test Procedure | Type-Grade | | | | | |
|---|---------------------------------------|----------------|-----|-------|-----|------------------|-----|
| | | Medium-Setting | | | | Slow-Setting | |
| | | AE-P | | EAP&T | | PCE ¹ | |
| | | Min | Max | Min | Max | Min | Max |
| Viscosity, Saybolt Furol 77°F, sec. 122°F, sec. | T 72 | – | – | – | – | 10 | 100 |
| Sieve test, % | T 59 | – | 0.1 | – | 0.1 | – | 0.1 |
| Miscibility ² | T 59 | – | – | Pass | – | Pass | – |
| Demulsibility, 35 mL of 0.10 N CaCl ₂ , % | T 59 | – | 70 | – | – | – | – |
| Storage stability, 1 day, % | T 59 | – | 1 | – | 1 | – | – |
| Particle size, ⁵ % by volume < 2.5 μm | Tex-238-F³ | – | – | 90 | – | 90 | – |
| Asphalt emulsion distillation to 500°F followed by Cutback asphalt distillation of residue to 680°F: Residue after both distillations, % by wt. Total oil distillate from both distillations, % by volume of emulsion | T 59 & T 78 | 40 | – | – | – | – | – |
| | | 25 | 40 | – | – | – | – |
| Residue by distillation, % by wt. | T 59 | – | – | 60 | – | – | – |
| Residue by evaporation, ⁴ % by wt. | T 59 | – | – | – | – | 60 | – |
| Tests on residue after all distillations: | | | | | | | |
| Viscosity, 140°F, poise | T 202 | – | – | 800 | – | – | – |
| Kinematic viscosity, ⁵ 140°F, cSt | T 201 | – | – | – | – | 100 | 350 |
| Flash point C.O.C., °F | T 48 | – | – | – | – | 400 | – |
| Solubility in trichloroethylene, % | T 44 | 97.5 | – | – | – | – | – |
| Float test, 122°F, sec. | T 50 | 50 | 200 | – | – | – | – |

1. Supply with each shipment of PCE:

- a copy of a lab report from an approved analytical lab, signed by a lab official, indicating the PCE formulation does not meet any characteristics of a Resource Conservation Recovery Act (RCRA) hazardous waste;
- a certification from the producer that the formulation supplied does not differ from the one tested and that no listed RCRA hazardous wastes or Polychlorinated Biphenyls (PCBs) have been mixed with the product; and
- a Safety Data Sheet.

2. Exception to T 59: In dilution, use 350 mL of distilled or deionized water and a 1,000-mL beaker.
3. Use [Tex-238-F](#), beginning at "Particle Size Analysis by Laser Diffraction," with distilled or deionized water as a medium and no dispersant, or use another approved method.
4. Exception to T 59: Leave sample in the oven until foaming ceases, then cool and weigh.
5. PCE must meet either the kinematic viscosity requirement or the particle size requirement.

Table 11A
Hard Residue Surface Sealant

| Property | Test Procedure | Min | Max |
|---|--|-------------------|-----|
| Viscosity, Krebs unit, 77°F, Krebs units | D 562 | 45 | 75 |
| Softening point, °F | Tex-505-C ¹ | 250 | – |
| Uniformity | D 2939 | Pass ² | |
| Resistance to heat | D 2939 | Pass ³ | |
| Resistance to water | D 2939 | Pass ⁴ | |
| Wet flow, mm | D 2939 | – | 0 |
| Resistance to Kerosene (optional) ⁵ | D 2939 | Pass ⁶ | |
| Ultraviolet exposure, UVA-340, 0.77 W/m ² , 50°C chamber, 8 hr. UV lamp, 5 min. spray, 3 hr. 55 min. condensation, 1,000 hr. total exposure ⁷ | G 154 | Pass ⁸ | |
| Abrasion loss, 1.6 mm thickness, liquid only, % | ISSA TB-100 | – | 1.0 |
| Residue by evaporation, % by weight | D 2939 | 33 | – |
| Tests on residue from evaporation: Penetration, 77°F, 100 g, 5 sec. Flash point, Cleveland open cup, °F | T 49 T 48 | 15 500 | 30 |
| Tests on base asphalt before emulsification Solubility in trichloroethylene, % | T 44 | 98 | – |

1. Cure the emulsion in the softening point ring in a 200°F ± 5°F oven for 2 hr.
2. Product must be homogenous and show no separation or coagulation that cannot be overcome by moderate stirring.
3. No sagging or slippage of film beyond the initial reference line.
4. No blistering or re-emulsification.
5. Recommended for airport applications or where fuel resistance is desired.
6. No absorption of Kerosene into the clay tile past the sealer film. Note sealer surface condition and loss of adhesion.
7. Other exposure cycles with similar levels of irradiation and conditions may be used with Department approval.
8. No cracking, chipping, surface distortion, or loss of adhesion. No color fading or lightening.

2.6.

Recycling Agent. Recycling agent and emulsified recycling agent must meet the requirements in Table 12. Additionally, recycling agent and residue from emulsified recycling agent, when added in the specified proportions to the recycled asphalt, must meet the properties specified on the plans.

Table 12
Recycling Agent and Emulsified Recycling Agent

| Property | Test Procedure | Recycling Agent | | Emulsified Recycling Agent (ARA-1) | | Polymer Modified Emulsified Recycling Agent (ARA-1P) | |
|--|----------------|-----------------|------------------|------------------------------------|------------------|--|---------|
| | | Min | Max | Min | Max | Min | Max |
| Viscosity, Saybolt Furol, 77°F, sec. | T 72 | – | – | 15 | 100 | 15 | 110 |
| Sieve test, % | T 59 | – | – | – | 0.1 | – | 0.1 |
| Miscibility ¹ | T 59 | – | | No coagulation | | | |
| Residue by evaporation, ² % by wt. | T 59 | – | – | 60 | – | – | – |
| Distillation test: Residue by distillation, % by wt. Oil distillate, % by volume of emulsion | T 59 | | | | | 60 – | 65 2 |
| Penetration of Distillation Residue at 39.2°F, 100 g, 5 sec. | T 49 | | | | | 110 | 190 |
| Tests on recycling agent or residue from evaporation: Flash point, C.O.C., °F Kinematic viscosity, 140°F, cSt 275°F, cSt | T 48 T 201 | 400 75 – | – 200 10.0 | 400 75 – | – 200 10.0 | 400 | – |

- Exception to T 59: Use 0.02 N CaCl₂ solution in place of water.
- Exception to T 59: Maintain sample at 300°F until foaming ceases, then cool and weigh.

2.7. **Crumb Rubber Modifier.** Crumb rubber modifier (CRM) consists of automobile and truck tires processed by ambient temperature grinding.

CRM must be:

- free from contaminants including fabric, metal, and mineral and other nonrubber substances;
- free-flowing; and
- nonfoaming when added to hot asphalt binder.

Ensure rubber gradation meets the requirements of the grades in Table 13 when tested in accordance with [Tex-200-F](#), Part I, using a 50-g sample.

Table 13
CRM Gradations

| Sieve Size (% Passing) | Grade A | | Grade B | | Grade C | | Grade D | Grade E |
|---------------------------|---------|-----|---------|-----|---------|-----|--------------------------|-------------|
| | Min | Max | Min | Max | Min | Max | | |
| #8 | 100 | – | – | – | – | – | As shown on the plans | As approved |
| #10 | 95 | 100 | 100 | – | – | – | | |
| #16 | – | – | 70 | 100 | 100 | – | | |
| #30 | – | – | 25 | 60 | 90 | 100 | | |
| #40 | – | – | – | – | 45 | 100 | | |
| #50 | 0 | 10 | – | – | – | – | | |
| #200 | – | – | 0 | 5 | – | – | | |

2.8. **Crack Sealer.** Provide polymer-modified asphalt-emulsion crack sealer meeting the requirements of Table 14. Provide rubber-asphalt crack sealer meeting the requirements of Table 15.

Table 14
Polymer-Modified Asphalt-Emulsion Crack Sealer

| Property | Test Procedure | Min | Max |
|------------------------------------|---------------------------|--------|--------|
| Rotational viscosity, 77°F, cP | D 2196, Method A | 10,000 | 25,000 |
| Sieve test, % | T 59 | – | 0.1 |
| Storage stability, 1 day, % | T 59 | – | 1 |
| Evaporation | Tex-543-C | | |
| Residue by evaporation, % by wt. | | 65 | – |
| Tests on residue from evaporation: | | | |
| Penetration, 77°F, 100 g, 5 sec. | T 49 | 35 | 75 |
| Softening point, °F | T 53 | 140 | – |
| Ductility, 39.2°F, 5 cm/min., cm | T 51 | 100 | – |

Table 15
Rubber-Asphalt Crack Sealer

| Property | Test Procedure | Class A | | Class B | |
|--|---------------------------|---------|-----|---------|------|
| | | Min | Max | Min | Max |
| CRM content, Grade A or B, % by wt. | Tex-544-C | 22 | 26 | – | – |
| CRM content, Grade B, % by wt. | Tex-544-C | – | – | 13 | 17 |
| Virgin rubber content, ¹ % by wt. | | – | – | 2 | – |
| Flash point, ² C.O.C., °F | T 48 | 400 | – | 400 | – |
| Penetration, ³ 77°F, 150 g, 5 sec. | T 49 | 30 | 50 | 30 | 50 |
| Penetration, ³ 32°F, 200 g, 60 sec. | T 49 | 12 | – | 12 | – |
| Softening point, °F | T 53 | – | – | 170 | – |
| Bond Test, non-immersed, 0.5 in specimen, 50% extension, 20°F ⁴ | D5329 | – | – | – | Pass |

1. Provide certification that the Min % virgin rubber was added.
2. Agitate the sealing compound with a 3/8- to 1/2 in. (9.5- to 12.7 mm) wide, square-end metal spatula to bring the material on the bottom of the cup to the surface (i.e., turn the material over) before passing the test flame over the cup. Start at one side of the thermometer, move around to the other, and then return to the starting point using 8 to 10 rapid circular strokes. Accomplish agitation in 3 to 4 sec. Pass the test flame over the cup immediately after stirring is completed.
3. Exception to T 49: Substitute the cone specified in D 217 for the penetration needle.
4. Allow no crack in the crack sealing materials or break in the bond between the sealer and the mortar blocks over 1/4 in. deep for any specimen after completion of the test.

- 2.9. **Asphalt-Rubber Binders.** Provide asphalt-rubber (A-R) binders that are mixtures of asphalt binder and CRM, which have been reacted at elevated temperatures. Provide A-R binders meeting D6114 and containing a minimum of 15% CRM by weight. Provide Types I or II, containing CRM Grade C, for use in hot-mixed aggregate mixtures. Provide Types II or III, containing CRM Grade B, for use in surface treatment binder. Ensure binder properties meet the requirements of Table 16.

Table 16
A-R Binders

| Property | Test Procedure | Binder Type | | | | | |
|---|-----------------|-------------|-------|---------|-------|----------|-------|
| | | Type I | | Type II | | Type III | |
| | | Min | Max | Min | Max | Min | Max |
| Apparent viscosity, 347°F, cP | D2196, Method A | 1,500 | 5,000 | 1,500 | 5,000 | 1,500 | 5,000 |
| Penetration, 77°F, 100 g, 5 sec. | T 49 | 25 | 75 | 25 | 75 | 50 | 100 |
| Penetration, 39.2°F, 200 g, 60 sec. | T 49 | 10 | – | 15 | – | 25 | – |
| Softening point, °F | T 53 | 135 | – | 130 | – | 125 | – |
| Resilience, 77°F, % | D5329 | 25 | – | 20 | – | 10 | – |
| Flash point, C.O.C., °F | T 48 | 450 | – | 450 | – | 450 | – |
| Tests on residue from Thin-Film Oven Test: | T 179 | | | | | | |
| Retained penetration ratio, 39.2°F, 200 g, 60 sec., % of original | T 49 | 75 | – | 75 | – | 75 | – |

- 2.10. **Performance-Graded Binders.** Provide PG binders that are smooth and homogeneous, show no separation when tested in accordance with [Tex-540-C](#), and meet the requirements of Table 17.

Separation testing is not required if:

- a modifier is introduced separately at the mix plant either by injection in the asphalt line or mixer,
- the binder is blended on site in continuously agitated tanks, or
- binder acceptance is based on field samples taken from an in-line sampling port at the hot-mix plant after the addition of modifiers.

Table 17
Performance-Graded Binders

| Property and Test Method | Performance Grade | | | | | | | | | | | | | | | | | |
|---|-------------------|-----|-----|-------|-----|-----|-----|-------|-----|-----|-----|-------|-----|-----|-----|-------|-----|-----|
| | PG 58 | | | PG 64 | | | | PG 70 | | | | PG 76 | | | | PG 82 | | |
| | -22 | -28 | -34 | -16 | -22 | -28 | -34 | -16 | -22 | -28 | -34 | -16 | -22 | -28 | -34 | -16 | -22 | -28 |
| Average 7-day max pavement design temperature, °C ¹ | 58 | | | 64 | | | | 70 | | | | 76 | | | | 82 | | |
| Min pavement design temperature, °C ¹ | -22 | -28 | -34 | -16 | -22 | -28 | -34 | -16 | -22 | -28 | -34 | -16 | -22 | -28 | -34 | -16 | -22 | -28 |
| Original Binder | | | | | | | | | | | | | | | | | | |
| Flash point, T 48, Min, °C | 230 | | | | | | | | | | | | | | | | | |
| Viscosity, T 316 ^{2,3} : Max, 3.0 Pa s, test temperature, °C | 135 | | | | | | | | | | | | | | | | | |
| Dynamic shear, T 315 ⁴ : G*/sin(δ), Min, 1.00 kPa, Max, 2.00 kPa ⁷ , Test temperature @ 10 rad/sec., °C | 58 | | | 64 | | | | 70 | | | | 76 | | | | 82 | | |
| Elastic recovery, D6084, 50°F, % Min ⁸ | - | - | 30 | - | - | 30 | 50 | - | 30 | 50 | 60 | 30 | 50 | 60 | 70 | 50 | 60 | 70 |
| Rolling Thin-Film Oven (Tex-506-C) | | | | | | | | | | | | | | | | | | |
| Mass change, T 240, Max, % | 1.0 | | | | | | | | | | | | | | | | | |
| Dynamic shear, T 315: G*/sin(δ), Min, 2.20 kPa, Max, 5.00 kPa ⁷ , Test temperature @ 10 rad/sec., °C | 58 | | | 64 | | | | 70 | | | | 76 | | | | 82 | | |
| MSCR, T350, Recovery, 0.1 kPa, High Temperature, % Min ⁸ | - | - | 20 | - | - | 20 | 30 | - | 20 | 30 | 40 | 20 | 30 | 40 | 50 | 30 | 40 | 50 |
| Pressure Aging Vessel (PAV) Residue (R 28) | | | | | | | | | | | | | | | | | | |
| PAV aging temperature, °C | 100 | | | | | | | | | | | | | | | | | |
| Dynamic shear, T 315: G*/sin(δ), Max, 5,000 kPa Test temperature @ 10 rad/sec., °C | 25 | 22 | 19 | 28 | 25 | 22 | 19 | 28 | 25 | 22 | 19 | 28 | 25 | 22 | 19 | 28 | 25 | 22 |
| Creep stiffness, T 313 ^{5,6} : S, max, 300 MPa, m-value, Min, 0.300 Test temperature @ 60 sec., °C | -12 | -18 | -24 | -6 | -12 | -18 | -24 | -6 | -12 | -18 | -24 | -6 | -12 | -18 | -24 | -6 | -12 | -18 |
| Direct tension, T 314 ⁶ : Failure strain, min, 1.0% Test temperature @ 1.0 mm/min., °C | -12 | -18 | -24 | -6 | -12 | -18 | -24 | -6 | -12 | -18 | -24 | -6 | -12 | -18 | -24 | -6 | -12 | -18 |

- Pavement temperatures are estimated from air temperatures and using an algorithm contained in a Department-supplied computer program, may be provided by the Department, or by following the procedures outlined in AASHTO MP 2 and PP 28.
- This requirement may be waived at the Department's discretion if the supplier warrants that the asphalt binder can be adequately pumped, mixed, and compacted at temperatures that meet all applicable safety, environmental, and constructability requirements. At test temperatures where the binder is a Newtonian fluid, any suitable standard means of viscosity measurement may be used, including capillary (T 201 or T 202) or rotational viscometry (T 316).
- Viscosity at 135°C is an indicator of mixing and compaction temperatures that can be expected in the lab and field. High values may indicate high mixing and compaction temperatures. Additionally, significant variation can occur from batch to batch. Contractors should be aware that variation could significantly impact their mixing and compaction operations. Contractors are therefore responsible for addressing any constructability issues that may arise.
- For quality control of unmodified asphalt binder production, measurement of the viscosity of the original asphalt binder may be substituted for dynamic shear measurements of G*/sin(δ) at test temperatures where the asphalt is a Newtonian fluid. Any suitable standard means of viscosity measurement may be used, including capillary (T 201 or T 202) or rotational viscometry (T 316).
- Silicone beam molds, as described in AASHTO TP 1-93, are acceptable for use.
- If creep stiffness is below 300 MPa, direct tension test is not required. If creep stiffness is between 300 and 600 MPa, the direct tension failure strain requirement can be used instead of the creep stiffness requirement. The m value requirement must be satisfied in both cases.
- Maximum values for unaged and RTFO aged dynamic shear apply only to materials used as substitute binders, as described in Item 340, "Dense-Graded Hot-Mix Asphalt (Small Quantity)", Item 341, "Dense-Graded Hot-Mix Asphalt, and Item 344, "Superpave Mixtures."
- Elastic Recovery (ASTM D6084) is not required unless MSCR (AASHTO T 350) is less than the minimum % recovery. Elastic Recovery must be used for the acceptance criteria in this instance.

3. EQUIPMENT

Provide all equipment necessary to transport, store, sample, heat, apply, and incorporate asphalts, oils, and emulsions.

4. CONSTRUCTION

Typical Material Use. Use materials shown in Table 18, unless otherwise determined by the Engineer.

Table 18
Typical Material Use

| Material Application | Typically Used Materials |
|---------------------------------------|--|
| Hot-mixed, hot-laid asphalt mixtures | PG binders, A-R binders Types I and II |
| Surface treatment | AC-5, AC-10, AC-15P, AC-20XP, AC-10-2TR, AC-20-5TR, HFRS-2, MS-2, CRS-2, CRS-2H, CRS-2TR, CMS-2P HFRS-2P, CRS-2P, CHFRS-2P, A-R binders Types II and III |
| Surface treatment (cool weather) | AC12-5TR, RC-250, RC-800, RC-3000, MC-250, MC-800, MC-3000, MC-2400L, CMS-2P |
| Precoating | AC-5, AC-10, PG 64-22, SS-1, SS-1H, CSS-1, CSS-1H |
| Tack coat | PG Binders, SS-1H, CSS-1H, EAP&T, TRAIL, EBL |
| Fog seal | SS-1, SS-1H, CSS-1, CSS-1H, CMS-1P |
| Hot-mixed, cold-laid asphalt mixtures | AC-0.6, AC-1.5, AC-3, AES-300, AES-300P, CMS-2, CMS-2S |
| Patching mix | MC-800, SCM I, SCM II, AES-300S |
| Recycling | AC-0.6, AC-1.5, AC-3, AES-150P, AES-300P, recycling agent, emulsified recycling agent |
| Crack sealing | SS-1P, polymer mod AE crack sealant, rubber asphalt crack sealers (Class A, Class B) |
| Microsurfacing | CSS-1P |
| Prime | MC-30, AE-P, EAP&T, PCE |
| Curing membrane | SS-1, SS-1H, CSS-1, CSS-1H, PCE |
| Erosion control | SS-1, SS-1H, CSS-1, CSS-1H, PCE |
| FDR -Foaming | PG 64-22, FDR EM-SY, FDR EM-HY |

- 4.1. **Storage and Application Temperatures.** Use storage and application temperatures in accordance with Table 19. Store and apply materials at the lowest temperature yielding satisfactory results. Follow the manufacturer's instructions for any agitation requirements in storage. Manufacturer's instructions regarding recommended application and storage temperatures supersede those of Table 19.

Table19
Storage and Application Temperatures

| Type-Grade | Application | | Storage Max (°F) |
|---|------------------------|--------------------|------------------|
| | Recommended Range (°F) | Max Allowable (°F) | |
| AC-0.6, AC-1.5, AC-3 | 200–300 | 350 | 350 |
| AC-5, AC-10 | 275–350 | 350 | 350 |
| AC-15P, AC-20-5TR, AC12-5TR and AC10-2TR | 300–375 | 375 | 360 |
| RC-250 | 125–180 | 200 | 200 |
| RC-800 | 170–230 | 260 | 260 |
| RC-3000 | 215–275 | 285 | 285 |
| MC-30, AE-P | 70–150 | 175 | 175 |
| MC-250 | 125–210 | 240 | 240 |
| MC-800, SCM I, SCM II | 175–260 | 275 | 275 |
| MC-3000, MC-2400L | 225–275 | 290 | 290 |
| HFRS-2, MS-2, CRS-2, CRS-2H, HFRS-2P, CRS-2P, CMS-2, CMS-2S, AES-300, AES-300S, AES-150P, AES-300P, CRS-2TR | 120–160 | 180 | 180 |
| SS-1, SS-1H, CSS-1, CSS-1H, PCE, EAP&T, SS-1P, RS-1P, CRS-1P, CSS-1P, recycling agent, emulsified recycling agent, polymer mod AE crack sealant | 50–130 | 140 | 140 |
| PG binders | 275–350 | 350 | 350 |
| Rubber asphalt crack sealers (Class A, Class B) | 350–375 | 400 | – |
| A-R binders Types I, II, and III | 325–425 | 425 | 425 |

5. MEASUREMENT AND PAYMENT

The work performed, materials furnished, equipment, labor, tools, and incidentals will not be measured or paid for directly but is subsidiary or is included in payment for other pertinent items.

Special Specification 6001

Portable Changeable Message Sign



1. DESCRIPTION

Furnish, operate, and maintain portable trailer mounted changeable message sign (PCMS) units.

2. MATERIALS

Furnish new or used material in accordance with the requirements of this Item and the details shown on the plans. Provide a self-contained PCMS unit with the following:

- Sign controller
- Changeable Message Sign
- Trailer
- Power source

Paint the exterior surfaces of the power supply housing, supports, trailer, and sign with Federal Orange No. 22246 or Federal Yellow No. 13538 of Federal Standard 595C, except paint the sign face assembly flat black.

- 2.1. **Sign Controller.** Provide a controller with permanent storage of a minimum of 75 pre-programmed messages. Provide an external input device for random programming and storage of a minimum of 75 additional messages. Provide a controller capable of displaying up to 3 messages sequentially. Provide a controller with adjustable display rates. Enclose sign controller equipment in a lockable enclosure.
- 2.2. **Changeable Message Sign.** Provide a sign capable of being elevated to at least 7 ft. above the roadway surface from the bottom of the sign. Provide a sign capable of being rotated 360° and secured against movement in any position.
- Provide a sign with 3 separate lines of text and 8 characters per line minimum. Provide a minimum 18 in. character height. Provide a 5 × 7 character pixel matrix. Provide a message legibility distance of 600 ft. for nighttime conditions and 800 ft. for normal daylight conditions. Provide for manual and automatic dimming light sources.
- The following are descriptions for 3 screen types of PCMS:
- **Character Modular Matrix.** This screen type comprises of character blocks.
 - **Continuous Line Matrix.** This screen type uses proportionally spaced fonts for each line of text.
 - **Full Matrix.** This screen type uses proportionally spaced fonts, varies the height of characters, and displays simple graphics on the entire sign.
- 2.3. **Trailer.** Provide a 2 wheel trailer with square top fenders, 4 leveling jacks, and trailer lights. Do not exceed an overall trailer width of 96 in. Shock mount the electronics and sign assembly.
- 2.4. **Power Source.** Provide a diesel generator, solar powered power source, or both. Provide a backup power source as necessary.
- 2.5. **Cellular Telephone.** When shown on the plans, provide a cellular telephone connection to communicate with the PCMS unit remotely.

3. CONSTRUCTION

Place or relocate PCMS units as shown on the plans or as directed. The plans will show the number of PCMS units needed, for how many days, and for which construction phases.

Maintain the PCMS units in good working condition. Repair damaged or malfunctioning PCMS units as soon as possible. PCMS units will remain the property of the Contractor.

4. MEASUREMENT

This Item will be measured by each PCMS or by the day used. All PCMS units must be set up on a work area and operational before a calendar day can be considered measurable. When measurement by the day is specified, a day will be measured for each PCMS set up and operational on the worksite.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Portable Changeable Message Sign." This price is full compensation for PCMS units; set up; relocating; removing; replacement parts; batteries (when required); fuel, oil, and oil filters (when required); cellular telephone charges (when required); software; and equipment, materials, tools, labor, and incidentals.

Special Specification 6185

Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA)



1. DESCRIPTION

Furnish, operate, maintain and remove upon completion of work, Truck Mounted Attenuator (TMA) or Trailer Attenuator (TA).

2. MATERIALS

Furnish, operate and maintain new or used TMAs or TAs. Assure used attenuators are in good working condition and are approved for use. A list of approved TMA/TA units can be found in the Department's Compliant Work Zone Traffic Control Devices List. The host vehicle for the TMA and TA must weigh a minimum of 19,000 lbs. Host vehicles may be ballasted to achieve the required weight. Any weight added to the host vehicle must be properly attached or contained within it so that it does not present a hazard and that proper energy dissipation occurs if the attenuator is impacted from behind by a large truck. The weight of a TA will not be considered in the weight of the host vehicle but the weight of a TMA may be included in the weight of the host vehicle. Upon request, provide either a manufacturer's curb weight or a certified scales weight ticket to the Engineer.

3. CONSTRUCTION

Place or relocate TMA/TAs as shown on the plans or as directed. The plans will show the number of TMA/TAs needed, for how many days or hours, and for which construction phases.

Maintain the TMA/TAs in good working condition. Replace damaged TMA/TAs as soon as possible.

4. MEASUREMENT

4.1. **Truck Mounted Attenuator/Trailer Attenuator (Stationary).** This Item will be measured by the each or by the day. TMA/TAs must be set up in a work area and operational before a calendar day can be considered measurable. When measurement by the day is specified, a day will be measured for each TMA/TA set up and operational on the worksite.

4.2. **Truck Mounted Attenuator/Trailer Attenuator (Mobile Operation).** This Item will be measured by the hour. The time begins once the TMA/TA is ready for operation at the predetermined site and stops when notified by the Engineer. A minimum of 4 hr. will be paid each day for each operating TMA/TA used in a mobile operation.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Truck Mounted Attenuators/Trailer Attenuators (Stationary)," or "Truck Mounted Attenuators/Trailer Attenuators (Mobile Operation)." This price is full compensation for furnishing TMA/TA: set up; relocating; removing; operating; fuel; and equipment, materials, tools, labor, and incidentals.