

| | |
|---------|--------------|
| Control | 0908-00-119 |
| Project | C 908-00-119 |
| Highway | VA |
| County | TAYLOR |

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 | <input type="checkbox"/> |
| ADDENDUM NO. 2 | <input type="checkbox"/> |
| ADDENDUM NO. 3 | <input type="checkbox"/> |
| ADDENDUM NO. 4 | <input type="checkbox"/> |
| ADDENDUM NO. 5 | <input type="checkbox"/> |

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 BRIDGE MAINTENANCE TAYLOR 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 171 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:

TWENTY-SEVEN THOUSAND (Dollars) (\$27,000)

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)

Impressed
Surety Seal
Only

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

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):

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

| | |
|----------------|---------------------|
| Control | 0908-00-119 |
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| County | TAYLOR |

IMPORTANT

PLEASE RETURN THIS SHEET IN ITS ENTIRETY

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

Check Received By: _____ Date: _____

Title: _____

For (Contractor's Name): _____

Project _____ County _____

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NOTICE TO THE BIDDER

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

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

\$ _____

Total Bid Amount

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

| ALT | ITEM | DESC | SP | Bid Item Description | Unit | Quantity | Bid Price | Amount | Seq |
|------------------|------|------|----|----------------------|------|----------|-----------|------------|-----|
| | 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 |
| | | | | | L | E | |

Unit price for each plant in place

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

Unit price for each ton of Flexible Base

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

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 |
| | | | | | L | E | |

Unit price of each Roadway Illumination Assembly

EXAMPLE

EXAMPLE

EXAMPLE

EXAMPLE

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PROJECT C 908-00-119
COUNTY TAYLOR

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. | | | | |
| | 104 | 6009 | | REMOVING CONC (RIPRAP) DOLLARS and CENTS | SY | 45.000 | 1 |
| | 401 | 6001 | | FLOWABLE BACKFILL DOLLARS and CENTS | CY | 20.000 | 2 |
| | 427 | 6007 | 003 | EPOXY WATERPROOF FINISH (TY X) DOLLARS and CENTS | SF | 3,197.000 | 3 |
| | 429 | 6003 | | CONC STR REPAIR(DECK REP(PART DEPTH)) DOLLARS and CENTS | SF | 20.000 | 4 |
| | 429 | 6007 | | CONC STR REPAIR (VERTICAL & OVER- HEAD) DOLLARS and CENTS | SF | 1,758.000 | 5 |
| | 432 | 6009 | | RIPRAP (CONC) (CL B) (4") DOLLARS and CENTS | CY | 5.000 | 6 |
| | 432 | 6031 | | RIPRAP (STONE PROTECTION)(12 IN) DOLLARS and CENTS | CY | 45.000 | 7 |
| | 434 | 6003 | 004 | ELASTOMERIC BEARING (SPECIAL) DOLLARS and CENTS | EA | 8.000 | 8 |
| | 438 | 6002 | | CLEANING AND SEALING EXIST JOINTS(CL3) DOLLARS and CENTS | LF | 128.000 | 9 |
| | 438 | 6008 | | CLEANING AND SEALING JOINTS (CL 7) DOLLARS and CENTS | LF | 117.000 | 10 |
| | 438 | 6016 | | CLEAN AND SEAL EXIST JTS (STRIP SEAL) DOLLARS and CENTS | LF | 38.000 | 11 |

| ALT | ITEM-CODE | | | UNIT BID PRICE ONLY. WRITTEN IN WORDS | UNIT | APPROX QUANTITIES | DEPT USE ONLY |
|-----|------------|--------------|-------------|--|------|----------------------|---------------------|
| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 442 | 6011 | 001 | STR STEEL (PEDESTAL) DOLLARS and CENTS | LB | 1,390.000 | 12 |
| | 446 | 6051 | 005 | SPOT CLEAN & PAINT EXT STR(SPL PRT SYS) DOLLARS and CENTS | EA | 1.000 | 13 |
| | 495 | 6001 | | RAISING EXIST STRUCT DOLLARS and CENTS | LS | 1.000 | 14 |
| | 496 | 6043 | | REMOV STR (SMALL FENCE) DOLLARS and CENTS | LF | 33.000 | 15 |
| | 500 | 6001 | | MOBILIZATION DOLLARS and CENTS | LS | 1.000 | 16 |
| | 502 | 6001 | 008 | BARRICADES, SIGNS AND TRAFFIC HAN- DLING DOLLARS and CENTS | MO | 9.000 | 17 |
| | 506 | 6041 | 002 | BIODEG EROSN CONT LOGS (INSTL) (12") DOLLARS and CENTS | LF | 1,200.000 | 18 |
| | 506 | 6043 | 002 | BIODEG EROSN CONT LOGS (REMOVE) DOLLARS and CENTS | LF | 1,200.000 | 19 |
| | 552 | 6001 | | WIRE FENCE (TY A) DOLLARS and CENTS | LF | 33.000 | 20 |
| | 636 | 6011 | 001 | REPLACE EXISTING ALUMINUM SIGNS (TY O) DOLLARS and CENTS | EA | 1.000 | 21 |
| | 644 | 6064 | | IN BRIDGE MNT CLEARANCE SGN ASSM(TY N) DOLLARS and CENTS | EA | 1.000 | 22 |

| ALT | ITEM-CODE | | | UNIT BID PRICE ONLY. WRITTEN IN WORDS | UNIT | APPROX QUANTITIES | DEPT USE ONLY |
|-----|------------|--------------|-------------|---|------|----------------------|---------------------|
| | ITEM NO | DESC CODE | S.P. NO. | | | | |
| | 644 | 6077 | | REMOVE BRDG MNT CLEARANCE SIGN ASSM DOLLARS and CENTS | EA | 1.000 | 23 |
| | 662 | 6016 | | WK ZN PAV MRK NON-REMOV (W)24"(SLD) DOLLARS and CENTS | LF | 288.000 | 24 |
| | 677 | 6007 | | ELIM EXT PAV MRK & MRKS (24") DOLLARS and CENTS | LF | 288.000 | 25 |
| | 738 | 6010 | | CLEANING / SWEEPING (SPOT) DOLLARS and CENTS | MI | .200 | 26 |
| | 784 | 6003 | | REP STL BRIDGE MEMBER (DIAPHRAGM) DOLLARS and CENTS | EA | 2.000 | 27 |
| | 784 | 6034 | | REP STL BRIDGE MEMBER(STRAIGHTEN MEMB) DOLLARS and CENTS | EA | 1.000 | 28 |
| | 785 | 6001 | | BRIDGE JOINT REPAIR (CONCRETE) DOLLARS and CENTS | LF | 43.000 | 29 |
| | 785 | 6011 | | BRIDGE JOINT REPLACEMENT (SEJ) DOLLARS and CENTS | LF | 12.000 | 30 |
| | 786 | 6001 | | CARBON FIBER REINF POLYMER PROTEC- TION DOLLARS and CENTS | SF | 132.000 | 31 |
| | 4002 | 6001 | | REPLACE ELASTOMERIC BEARING PADS DOLLARS and CENTS | EA | 22.000 | 32 |
| | 6001 | 6002 | | PORTABLE CHANGEABLE MESSAGE SIGN DOLLARS and CENTS | EA | 4.000 | 33 |

PROJECT C 908-00-119
 COUNTY TAYLOR

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. | | | | |
| | 6185 | 6002 | 002 | TMA (STATIONARY) DOLLARS and CENTS | DAY | 169.000 | 34 |
| | 7309 | 6002 | | CLEANING STRUCTURE (ABUTMENT) DOLLARS and CENTS | EA | 6.000 | 35 |

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

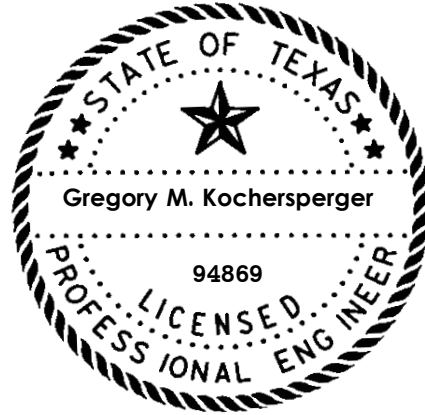
- B. If this proposal is the low bid, the bidder agrees to provide the following information prior to award of the contract.

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 0908-00-119
Project C 908-00-119
Highway VA
County TAYLOR

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
Gregory M. Kochersperger, P.E.
FEBRUARY 12, 2024

CCSJ: 0908-00-119
County: Taylor, Etc
Highway: Various

ABILENE DISTRICT GENERAL NOTES 2014 SPECIFICATIONS

General

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

Bryce Turentine, P.E. / Phone: 325-690-9821 / Bryce.Turentine@txdot.gov
Chad Carter, P.E. / Phone: 325-676-6850 / Chad.W.Carter@txdot.gov
(Abilene Area Office)

Ryan R. Sayles, P.E. / Phone: 432-263-4768 / Ryan.Sayles@txdot.gov
LaRissa Halford, E.I.T. / Phone: 806-356-3226 / larissa.halford@txdot.gov
(Big Spring Area Office)

Stewart Chapman, P.E. / Phone: 325-573-0143 / Stewart.Chapman@txdot.gov
Maxie Allen, P.E. / Phone: 325-573-0142 / Maxie.Allen@txdot.gov
Jose Cabrera, P.E. / Phone: 325-573-0143 / Jose.Cabrera@txdot.gov
(Snyder Area Office)

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

For Q&A's on Proposals navigate to

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

Use the dashboard to navigate to the project you are interested in by scrolling or filtering the dashboard using the controls on the left. Hover over the blue hyperlink for the project you want to view the Q&A for and click on the link in the window that pops up.

All relevant project documentation including contract time, cross sections, etc will be posted on the districts FTP website. <https://ftp.dot.state.tx.us/pub/txdot-info/Pre-Letting%20Responses/>

Failure to make necessary corrections to SWP3 based on SWP3 inspections will be cause for withholding the monthly estimate until such corrections have been made.

Failure to make necessary corrections to traffic control items based on barricade inspections will be cause for withholding the monthly estimate until such corrections have been made.

Provide ingress/egress to the adjacent properties in areas under construction. Phased construction of driveways and streets shall be required to provide uninterrupted access to adjacent properties. Coordinate work with the property owners before beginning any construction in the vicinity of the drive.

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Cut neat, straight lines with vertical faces along pavement edges or along joints between existing asphalt or concrete pavement and new pavement perpendicular or parallel to the direction of traffic by methods described in applicable bid items, or as directed. Provide clean edges or joints without jagged appearance or chunks broken out. This work is considered subsidiary to various bid items.

Environmental

Endangered and Protected Species

1. Migratory Birds

- a. **Bird nesting season is typically 15Feb through 15Sep annually.**
- b. The Contractor will avoid disturbing, destroying, removing, or relocating migratory birds and active nests found in trees, culverts, bridges, on the ground, or anywhere they are encountered.
- c. Perform all tree trimming and other vegetation clearing activities during the non-breeding season (typically 15Sep-15Feb annually). Perform any inactive nest removal and bird exclusion methods to prevent birds from establishing nests. Phasing of work during construction may be necessary to stay in compliance.
- d. When active nests are unexpectedly encountered on-site during construction, the Contractor will stop work and immediately notify the Engineer. Take measures to avoid disturbance of these birds, their occupied nest, eggs, and/or young, in accordance with the Migratory Bird Treaty Act, Texas Parks and Wildlife Code, and TxDOT policy.
- e. The Engineer will notify the Contractor when work may resume.
- f. The Contractor should be prepared to prevent migratory birds from building nests by utilizing nest prevention methods, such as bird-deterrent netting and bird-repelling sprays and/or gels, between 15Feb and 15Sep. The Contractor can discuss other preventative measures with the Engineer and/or District Environmental Staff.

Best Management Practices

1. Bird BMPs

- a. Not disturbing, destroying, or removing active nests, including ground nesting birds, during the nesting season.
- b. Avoiding the removal of unoccupied, inactive nests, as practicable.
- c. Preventing the establishment of active nests during the nesting season on TxDOT owned and operated facilities and structures proposed for replacement or repair.
- d. Not collecting, capturing, relocating, or transporting birds, eggs, young, or active nests without a permit.

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Item 5, “Control of Work”

Use Method C for construction surveying.

All known utilities are identified in the plans, including the crossing of power lines. Use this information to identify potential issues with power poles and power lines prior to bidding.

Make necessary arrangements with utility owners regarding temporary protections such as bracing power poles, and de-energizing power lines. The Department will not reimburse the cost of such temporary protections to the Contractor, unless the Engineer determines that inadequate information was available at the time the project was bid. **“Call Before You Dig” “Call 811”**

Provide notification to the District Traffic Engineering Section by telephone at 325-676-6991 and by email at ABL_TrafficFix@txdot.gov when planning drilling or excavation work in areas where existing TxDOT underground utilities exist. Visual evidence of TxDOT underground utilities in the area include illumination poles, ground boxes, flashing beacons, traffic signals, etc. This notification must be provided 72 hours in advance of performing the work.

Drilled shaft locations or excavation areas must be staked prior to the notification so that the underground utilities can be located in relationship to the proposed work. Preserve and document the marked utility locations to prevent unnecessary secondary notifications. Notify the Engineer of conflicts between proposed work and underground utilities.

Item 7, “Legal Relations and Responsibilities”

The total area disturbed for this project is **0.1** acres. The disturbed area in this project, all project locations in the Contract, and the Contractor project specific locations (PSLs), within 1 mile of the project limits, for the Contract will further establish the authorization requirements for storm water discharges. The Department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction activities shown on the plans. The Contractor is to obtain required authorization from the TCEQ for Contractor PSLs for construction support activities on or off the ROW. When the total area disturbed in the Contract and PSLs within 1 mile of the project limits exceeds 5 acres, provide a copy of the Contractor NOI for PSLs on the ROW to the Engineer and to the government that operates a separate storm sewer system.

Provide one SW3P Notification Board for this project. Notification Boards are to be placed at locations within the right-of-way but outside the clear zone as directed by the Engineer. Consider this work to be subsidiary to the various bid items of the contract.

No significant traffic generator events identified.

Hard hats are required at all times during construction when construction personnel are in TxDOT Right-of-Way.

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Patrol vehicles must be clearly marked to correspond with the officer’s agency and equipped with appropriate lights to identify them as law enforcement. For patrol vehicles not owned by a law enforcement agency, markings will be retroreflective and legible from 100 ft. from both sides and the rear of the vehicle. Lights will be high intensity and visible from all angles.

LIGHTING STANDARDS FOR HIGHWAY MAINTENANCE OR CONSTRUCTION VEHICLES AND SERVICE VEHICLES

VEHICLE LIGHTING SUMMARY

| Vehicle | Color of Flashing Lights | Transportation Code |
|---|---------------------------------|------------------------------------|
| Police Vehicles | Red/Blue/White/Amber | 547.305 & 547.702 |
| Fire/EMS Vehicles | Red/Blue/White/Amber | 547.305 & 547.702 |
| Volunteer Fire/EMS | Red/Blue/White/Amber | 547.305 & 547.702 |
| | | |
| School | Bus Red/White (rooftop) /Amber | 547.305 & 547.701 |
| Highway Maintenance or Construction Vehicles and Service Vehicles | Amber/Blue | 547.105 & TxDOT Lighting Standards |

Item 8 “Prosecution and Progress”

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 at the same time.

Coordinate and update the work schedule with the project inspector daily. Give a minimum of 24 hours of notice to project inspector if work requiring inspection or testing is to be performed. Failure to do so may cause that work to be delayed or postponed if TxDOT personnel are not available. Work performed without suitable inspection, as determined by the Engineer, may be ordered removed and replaced at Contractor’s expense.

Prepare the progress schedule as a Critical Path Method (CPM).

Item 9, “Measurement and Payment”

The progress payment period shall end on the 25th of each month, unless directed by the Area Office Engineer. Material on Hand (MOH) is due two business days before estimate cut off.

Item 429, "Concrete Structure Repair"

Areas to be repaired at each location shall be marked in the field by the Engineer.

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Areas to be repaired at each location shall be repaired in accordance with the Department's Concrete Repair Manual. The Contractor must prepare and submit formal procedures outlining repair plans and which proprietary implementation so the Engineer has sufficient time to review. The Engineer must approve in writing any procedures that differ from those in the Concrete Repair Manual or materials that are not included in one of TxDOT's MPLS materials they plan to utilize. Submit the package a minimum of two weeks prior to.

For Vertical and Overhead repairs use preapproved Type C Repair Material. For Deck repairs use preapproved Type B Ultra-Rapid Extended Repair Material.

Item 446, "Cleaning and Painting Steel"

Provide a System I-B Overcoat Paint with a Federal Standard 595B #35630 color.

The existing coating to be removed contains lead or other hazardous materials.

Item 502, "Barricades, Signs and Traffic Handling"

Provide the Engineer with written notification seven (7) days in advance of major traffic changes. A major traffic change is defined as the temporary (greater than one day) or permanent relocation of traffic lanes typically in an urban setting. The notice will, at a minimum, include the expected date, time and scope of the traffic change. The Department will utilize the information provided to inform the traveling public of the changes. Failure to provide advance notice, or to provide accurate information, will result in delaying the work until such time that the public has been notified.

Additional signs, barricades and traffic handling may be necessary to complete the work shown herein and will be provided by the contractor as required and will be considered subsidiary to this item.

Provide separate attenuators for each work area within a common lane closure as approved or directed by the Engineer.

In sections where traffic is restricted to one lane, two-way traffic, flaggers will be stationed at each end of that section with two-way communication devices and a pilot car will control operations.

Pilot car is subsidiary to item 502.

Relocate existing roadside signs to temporary supports as approved by the engineer.

All safety appurtenances such as signs, delineators, object markers and route markers will be in place prior to opening each phase of the construction to traffic, unless otherwise directed.

During construction on all underpass structures erect and maintain accurate clearance signs in accordance with the "Texas Manual on Uniform Traffic Control Device for Streets and

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Highways”. The mounting method for the temporary clearance sign is subject to approval of the Engineer. Temporary clearance signs are considered subsidiary to the various bid items. Movement of construction equipment and haul trucks will be prohibited from crossing the median unless specifically authorized by the Engineer. Ingress and egress to main lanes will be at entrance and exit ramps.

The Contractor Force Account “Safety Contingency” that has been established for this project is intended to be utilized for work zone enhancements, to improve the effectiveness of the Traffic Control Plan, that could not be foreseen in the project planning and design stage. These enhancements will be mutually agreed upon by the Engineer and the Contractor’s Responsible Person based on weekly or more frequent traffic management reviews on the project. The Engineer may choose to use existing bid items if it does not slow the implementation of enhancement.

The Contractor's person responsible for TCP compliance must be available by local telephone and have a response time within 45 minutes.

Work will not be allowed on both sides of the roadbed at the same time.

Equip all work vehicles within 30 feet of the traveled way with a functioning amber strobe light or rotating beacon visible from all directions.

Repair barricades within the timeline shown on the barricade inspection report. Failure to comply will cease all work until barricades are repaired to the satisfaction of the Department. Replace all damaged traffic control devices immediately. Remove any damaged traffic control devices from the project within 24 hours.

Conflicting guide signs shall be covered as approved by the Engineer. This work shall be subsidiary to Item 502.

Reduced regulatory speed limit signs should only be posted in the vicinity of ongoing work activity as shown on BC (3)-21 and not throughout the entire project. Removing, relocating or covering speed limit signs shall be considered subsidiary to item 502.

Item 506, “Temporary Erosion, Sedimentation, and Environmental Controls”

On site concrete washout shall not be allowed on this project.

The Storm Water Pollution Prevention Plan (SWP3) consists of temporary erosion control measures needed and provided for under this Item. The disturbed area is less than one acre and minimal use of erosion control measures is anticipated. Place BMPs at any location where soil is disturbed by construction or access, as directed by the Engineer.

CCSJ: 0908-00-119
County: Taylor, Etc
Highway: Various

Item 510, “One-way Traffic Control”

Multiple locations of one-lane two-way control with flaggers will be required for this project. All flaggers and associated work will be considered subsidiary to other TCP items.

Item 636 “Signs”

Contractor will measure bridge height according to the TxDot Sign Guidelines and Applications Manual (Chap. 6 Sec. 2) and the Engineer or his representative will verify this information for sign manufacturing.

Item 644, “Small Roadside Sign Supports and Assemblies”

Use the latest edition of the “Standard Highway Sign Designs for Texas” for Sign types for which design details are not shown on the plans.

Sign placement shall be in accordance with the latest edition of the TMUTCD & TxDOT’s Sign Crew Field Book located at the following addresses.

TMUTCD - <https://www.txdot.gov/business/resources/signage/tmutcd.html>

TxDOT’s Sign Crew Field Book - <http://onlinemanuals.txdot.gov/txdotmanuals/sfb/index.htm>

Before final sign installation, stake all sign locations for approval by the engineer.

Deliver and stockpile all signs to be salvaged to the Sweetwater Maintenance Facility, located approximately 4 miles from the IH20 over Hopkins Rd bridge location.

Item 6185, “Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA)”

Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA) will not be considered a major item of work on this project.

TMA,s will only be paid while workers are present or to protect a blunt object.

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 TMAs needed for the project. The Contractor must get approval from the Engineer for any changes in the number of TMA as shown in the plans.

If a TMA is used for both mobile and stationary traffic control on the same day, it will be paid for as stationary for that day.

CCSJ: 0908-00-119
County: Taylor, Etc
Highway: Various

| | | BASIS OF ESTIMATE FOR STATIONARY TMAs | | | |
|----------|-------|---------------------------------------|----------|------------|-------|
| | | TMA (Stationary) | | | |
| Location | Phase | Standard | Required | Additional | TOTAL |
| REF 01 | 1 | TCP(5-1)-18 | 1 | 0 | 1 |
| REF 02 | 1 | TCP(6-1)-12 | 1 | 0 | 1 |
| REF 03 | 1 | TCP(6-1)-12 | 1 | 0 | 1 |
| REF 04 | 1 | TCP(6-1)-12 | 1 | 0 | 1 |
| REF 05 | 1 | TCP(2-2)-18 | 1 | 0 | 1 |
| REF 06 | 1 | TCP(5-1)-18 | 1 | 0 | 1 |
| REF 07 | 1 | TCP(6-1)-12 | 1 | 0 | 1 |
| REF 08 | 1 | TCP(6-6)-12 | 1 | 0 | 1 |
| REF 09 | 1 & 2 | TCP(2-2)-18 | 1 | 0 | 1 |
| REF 10 | 1 & 2 | TCP(6-4)-12 | 1 | 0 | 1 |
| REF 11 | 1 | TCP(6-1)-12 | 1 | 0 | 1 |
| REF 12 | 1 & 2 | TCP(1-5)-18 | 1 | 0 | 1 |
| | 1 & 2 | TCP(6-1)-12 | 1 | 0 | 1 |
| REF 13 | 1 | TCP(6-1)-12 | 1 | 0 | 1 |
| REF 14 | 1 | TCP(2-2)-18 | 1 | 0 | 1 |
| REF 15 | 1 | TCP(6-1)-12 | 1 | 0 | 1 |
| REF 16 | 1 | TCP(6-1)-12 | 1 | 0 | 1 |
| REF 17 | 1 | TCP(2-2)-18 | 1 | 0 | 1 |
| REF 18 | 1 | TCP(2-2)-18 | 1 | 0 | 1 |
| REF 19 | 1 | TCP(2-2)-18 | 1 | 0 | 1 |
| REF 20 | 1 | TCP(5-1)-18 | 1 | 0 | 1 |
| REF 21 | 1 | TCP(5-1)-18 | 1 | 0 | 1 |

CONTROL : 0908-00-119
PROJECT : C 908-00-119
HIGHWAY : VA
COUNTY : TAYLOR

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 104 REMOVING CONCRETE
ITEM 401 FLOWABLE BACKFILL (421)
ITEM 427 SURFACE FINISHES FOR CONCRETE (420)
ITEM 429 CONCRETE STRUCTURE REPAIR (421)(431)(440)(780)
ITEM 432 RIPRAP (247)(420)(421)(431)(440)
ITEM 434 BRIDGE BEARINGS (420)(441)(442)(445)(446)(449)
ITEM 438 CLEANING AND SEALING JOINTS
ITEM 442 METAL FOR STRUCTURES (441)(445)(446)(447)(448)
ITEM 446 FIELD CLEANING AND PAINTING STEEL (441)(445)
ITEM 495 RAISING EXISTING STRUCTURES (420)(421)(434)(442)(448)
ITEM 496 REMOVING STRUCTURES
ITEM 500 MOBILIZATION
ITEM 502 BARRICADES, SIGNS, AND TRAFFIC HANDLING
ITEM 506 TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL
CONTROLS (161)(432)(556)
ITEM 552 WIRE FENCE (445)(492)
ITEM 636 SIGNS (643)
ITEM 644 SMALL ROADSIDE SIGN ASSEMBLIES (421)(440)(441)(442)(445)
(636)(643)(656)
ITEM 662 WORK ZONE PAVEMENT MARKINGS (666)(668)(672)(677)
ITEM 666 RETROREFLECTORIZED PAVEMENT MARKINGS (316)(502)(662)(677)
(678)<6438>
ITEM 672 RAISED PAVEMENT MARKERS (677)(678)
ITEM 677 ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS (300)
(302)(316)<3096>
ITEM 738 CLEANING AND SWEEPING HIGHWAYS
ITEM 784 STEEL MEMBER REPAIR (421)(441)(442)(446)(448)(780)
ITEM 785 BRIDGE JOINT REPAIR OR REPLACEMENT (429)(438)(448)(449)
(454)

ITEM 786 CARBON FIBER REINFORCED POLYMER (CFRP) (429)

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

SPECIAL LABOR PROVISIONS FOR STATE PROJECTS (000---008)

WAGE RATES

SPECIAL PROVISION "NONDISCRIMINATION" (000---002)

SPECIAL PROVISION "SMALL BUSINESS ENTERPRISE IN STATE FUNDED PROJECTS
" (000---009)

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---013) (002---014) (002---015)

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) (006---040)

SPECIAL PROVISIONS TO ITEM 7 (007---004) (007---008) (007---010)
(007---011) (007---013)

SPECIAL PROVISIONS TO ITEM 8 (008---030) (008---033) (008---054)

SPECIAL PROVISIONS TO ITEM 9 (009---010) (009---016)

SPECIAL PROVISION TO ITEM 247 (247---005)

SPECIAL PROVISION TO ITEM 300 (300---020)

SPECIAL PROVISION TO ITEM 302 (302---003)

SPECIAL PROVISION TO ITEM 316 (316---002)

SPECIAL PROVISION TO ITEM 420 (420---001)

SPECIAL PROVISION TO ITEM 421 (421---012)

SPECIAL PROVISION TO ITEM 427 (427---003)

SPECIAL PROVISION TO ITEM 434 (434---004)

SPECIAL PROVISION TO ITEM 440 (440---005)

SPECIAL PROVISION TO ITEM 441 (441---004)

SPECIAL PROVISION TO ITEM 442 (442---001)

SPECIAL PROVISION TO ITEM 446 (446---005)

SPECIAL PROVISION TO ITEM 447 (447---001)

SPECIAL PROVISION TO ITEM 448 (448---001)

SPECIAL PROVISION TO ITEM 449 (449---002)

SPECIAL PROVISION TO ITEM 502 (502---008)

SPECIAL PROVISION TO ITEM 506 (506---002)

SPECIAL PROVISION TO ITEM 636 (636---001)

SPECIAL PROVISION TO ITEM 643 (643---001)

SPECIAL PROVISION TO ITEM 656 (656---001)

SPECIAL PROVISION TO ITEM 666 (666---007)

SPECIAL PROVISION TO SPECIAL SPECIFICATION ITEM 3096 (3096--003)

SPECIAL PROVISION TO SPECIAL SPECIFICATION ITEM 6185 (6185--002)

SPECIAL SPECIFICATIONS:

ITEM 3096 ASPHALTS, OILS, AND EMULSIONS
ITEM 4002 REPLACING ELASTOMERIC BEARING PADS
ITEM 6001 PORTABLE CHANGEABLE MESSAGE SIGN
ITEM 6185 TRUCK MOUNTED ATTENUATOR (TMA) AND TRAILER ATTENUATOR (TA)
ITEM 6438 MOBILE RETROREFLECTIVITY DATA COLLECTION FOR PAVEMENT
MARKINGS
ITEM 7309 BRIDGE STRUCTURE CLEANING

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.

Control **0908-00-119**
Project **C 908-00-119**
Highway **VA**
County **TAYLOR**

SMALL BUSINESS ENTERPRISE REQUIREMENTS

The following goal for small business enterprises is established:

SBE
0.0%

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.

PROHIBITION ON CERTAIN TELECOMMUNICATIONS EQUIPMENT OR SERVICES

The Federal Register Notice issued the Final Rule and states that the amendment to 2 CFR 200.216 is effective on August 13, 2020. The new 2 CFR 200.471 regulation provides clarity that the telecommunications and video surveillance costs associated with 2 CFR 200.216 are unallowable for services and equipment from these specific providers. OMB's Federal Register Notice includes the new 2 CFR 200.216 and 2 CFR 200.471 regulations.

<https://www.federalregister.gov/documents/2020/08/13/2020-17468/guidance-for-grants-and-agreements>

Per the Federal Law referenced above, use of services, systems, or services or systems that contain components produced by any of the following manufacturers is strictly prohibited for use on this project. Therefore, for any telecommunications, CCTV, or video surveillance equipment, services or systems cannot be manufactured by, or have components manufactured by:

- Huawei Technologies Company,
- ZTE Corporation (any subsidiary and affiliate of such entities),
- Hytera Communications Corporation,
- Hangzhou Hikvision Digital Technology Company,
- Dahua Technology Company (any subsidiary and affiliate of such entities).

Violation of this prohibition will require replacement of the equipment at the contractor's expense.

Special Provision to Item 000

Special Labor Provisions for State Projects



1. GENERAL

This is a "Public Works" Project, as provided under Government Code Title 10, Chapter 2258, "Prevailing Wage Rates," and is subject to the provisions of the Statute. No provisions in the Contract are intended to be in conflict with the provisions of the Statute.

The Texas Transportation Commission has ascertained and indicated in the special provisions the regular rate of per diem wages prevailing in each locality for each craft or type of worker. Apply the wage rates contained in the specifications as minimum wage rates for the Contract.

2. MINIMUM WAGES, HOURS AND CONDITIONS OF EMPLOYMENT

All workers necessary for the satisfactory completion of the work are within the purview of the Contract.

Whenever and wherever practical, give local citizens preference in the selection of labor.

Do not require any worker to lodge, board or trade at a particular place, or with a particular person as a condition of employment.

Do not charge or accept a fee of any from any person who obtains work on the project. Do not require any person who obtains work on the project to pay any fee to any other person or agency obtaining employment for the person on the project.

Do not charge for tools or equipment used in connection with the duties performed, except for loss or damage of property. Do not charge for necessary camp water.

Do not charge for any transportation furnished to any person employed on the project.

The provisions apply where work is performed by piece work, station work, etc. The minimum wage paid will be exclusive of equipment rental on any shipment which the worker or subcontractor may furnish in connection with his work.

Take responsibility for carrying out the requirements of this specification and ensure that each subcontractor working on the project complies with its provisions.

Any form of subterfuge, coercion or deduction designed to evade, reduce or discount the established minimum wage scales will be considered a violation of the Contract.

The Fair Labor Standards Acts (FLSA) established one and one-half (1-1/2) pay for overtime in excess of 40 hours worked in 1 week. Do not consider time consumed by the worker in going to and returning from the place of work as part of the hours of work. Do not require or permit any worker to work in excess of 40 hours in 1 week, unless the worker receives compensation at a rate not less than 1-1/2 times the basic rate of pay for all hours worked in excess of 40 hours in the workweek.

The general rates of per diem wages prevailing in this locality for each class and type of workers whose services are considered necessary to fulfill the Contract are indicated in the special provisions, and these rates govern as minimum wage rates on this Contract. A penalty of \$60.00 per calendar day or portion of a calendar day for each worker that is paid less than the stipulated general rates of per diem wages for any work done under the Contract will be deducted. The Department, upon receipt of a complaint by a worker,

will determine within 30 days whether good cause exists to believe that the Contractor or a subcontractor has violated wage rate requirements and notify the parties involved of the findings. Make every effort to resolve the alleged violation within 14 days after notification. The next alternative is submittal to binding arbitration in accordance with the provisions of the Texas General Arbitration Act (Art. 224 et seq., Revised Statutes).

Notwithstanding any other provision of the Contract, covenant and agree that the Contractor and its subcontractors will pay each of their employees and contract labor engaged in any way in work under the Contract, a wage not less than what is generally known as the "federal minimum wage" as set out in 29 U.S.C. 206 as that Statute may be amended from time to time.

Pay any worker employed whose position is not listed in the Contract, a wage not less than the per diem wage rate established in the Contract for a worker whose duties are most nearly comparable.

3. RECORD AND INSPECTIONS

Keep copies of weekly payrolls for review. Require subcontractors to keep copies of weekly payrolls for review. Show the name, occupation, number of hours worked each day and per diem wage paid each worker together with a complete record of all deductions made from such wages. Keep records for a period of 3 years from the date of completion of the Contract.

Where the piece-work method is used, indicate on the payroll for each person involved:

- Quantity of piece work performed.
- Price paid per piece-work unit.
- Total hours employed.

The Engineer may require the Contractor to file an affidavit for each payroll certifying that payroll is a true and accurate report of the full wages due and paid to each person employed.

Post or make available to employees the prevailing wage rates from the Contract. Require subcontractors to post or make available to employees the prevailing wage rates from the Contract.

The wage rates listed herein are those predetermined by the Secretary of Labor and State Statute and listed in the United States Department of Labor's (USDOL) General Decisions dated 01-05-2024 and are the minimum wages to be paid accordingly for each specified classification. To determine the applicable wage rate zone, a list entitled "TEXAS COUNTIES IDENTIFIED BY WAGE RATE ZONES" is provided in the contract. Any wage rate that is not listed herein and not in the USDOL's general decision, must be requested by the contractor through the completion of an Additional Classification and Wage Rate Request and be submitted for approval. IMPORTANT NOTICE FOR STATE PROJECTS: only the controlling wage rate zone applies to the contract. Effective 01-05-2024.

| CLASS. # | CLASSIFICATION DESCRIPTION | ZONE TX02 *(TX20240002) | ZONE TX03 *(TX20240003) | ZONE TX04 *(TX20240004) | ZONE TX05 *(TX20240005) | ZONE TX06 *(TX20240006) | ZONE TX07 *(TX20240007) | ZONE TX08 *(TX20240008) | ZONE TX24 *(TX20240024) | ZONE TX25 *(TX20240025) | ZONE TX27 *(TX20240027) | ZONE TX28 *(TX20240028) | ZONE TX29 *(TX20240029) | ZONE TX30 *(TX20240030) | ZONE TX37 *(TX20240037) | ZONE TX38 *(TX20240038) | ZONE TX42 *(TX20240042) |
|----------|--|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| 1428 | Agricultural Tractor Operator | | | | | | \$12.69 | | | | | \$12.35 | | | \$11.75 | | |
| 1300 | Asphalt Distributor Operator | \$14.87 | \$13.48 | \$13.88 | \$15.72 | \$15.58 | \$15.55 | \$15.72 | \$13.28 | \$15.32 | \$15.62 | \$14.36 | \$14.25 | \$14.03 | \$13.75 | \$14.06 | \$14.40 |
| 1303 | Asphalt Paving Machine Operator | \$13.40 | \$12.25 | \$12.35 | \$13.87 | \$14.05 | \$14.36 | \$14.20 | \$13.26 | \$13.99 | \$14.68 | \$12.92 | \$13.44 | \$12.53 | \$14.00 | \$14.32 | \$12.99 |
| 1106 | Asphalt Raker | \$12.28 | \$10.61 | \$12.02 | \$14.21 | \$11.65 | \$12.12 | \$11.64 | \$11.44 | \$12.69 | \$12.05 | \$11.34 | \$11.67 | \$11.40 | \$12.59 | \$12.36 | \$11.78 |
| 1112 | Batching Plant Operator, Asphalt | | | | | | | | | | | | | | | | |
| 1115 | Batching Plant Operator, Concrete | | | | | | | | | | | | | | | | |
| 1214 | Blaster | | | | | | | | | | | | | | | | |
| 1615 | Boom Truck Operator | | | | | | \$18.36 | | | | | | | | | | |
| 1444 | Boring Machine Operator | | | | | | | | | | | | | | | | |
| 1305 | Broom or Sweeper Operator | \$11.21 | \$10.33 | \$10.08 | \$11.99 | | \$11.04 | \$11.62 | | \$11.74 | \$11.41 | \$10.30 | | \$10.23 | \$10.60 | \$12.68 | \$11.05 |
| 1144 | Communications Cable Installer | | | | | | | | | | | | | | | | |
| 1124 | Concrete Finisher, Paving and Structures | \$13.55 | \$12.46 | \$13.16 | \$12.85 | \$12.64 | \$12.56 | \$12.77 | \$12.44 | \$14.12 | \$13.04 | \$13.38 | \$12.64 | \$12.80 | \$12.79 | \$12.98 | \$13.32 |
| 1318 | Concrete Pavement Finishing Machine Operator | | | | \$16.05 | | \$15.48 | | | \$16.05 | | \$19.31 | | | | \$13.07 | |
| 1315 | Concrete Paving, Curing, Float, Texturing Machine Operator | | | | | | | | | | | \$16.34 | | | | \$11.71 | |
| 1333 | Concrete Saw Operator | | | | \$14.67 | | | | | \$14.48 | \$17.33 | | | | | \$13.99 | |
| 1399 | Concrete/Gunite Pump Operator | | | | | | | | | | | | | | | | |
| 1344 | Crane Operator, Hydraulic 60 tons or less | | | | \$18.22 | | \$18.36 | | | \$18.12 | \$18.04 | \$20.21 | | | \$18.63 | \$13.86 | |
| 1345 | Crane Operator, Hydraulic Over 80 Tons | | | | | | | | | | | | | | | | |
| 1342 | Crane Operator, Lattice Boom 80 Tons or Less | \$16.82 | \$14.39 | \$13.85 | \$17.27 | | \$15.87 | | | \$17.27 | | \$14.67 | | | \$16.42 | \$14.97 | \$13.87 |
| 1343 | Crane Operator, Lattice Boom Over 80 Tons | | | | \$20.52 | | \$19.38 | | | \$20.52 | | \$17.49 | | | \$25.13 | \$15.80 | |
| 1306 | Crawler Tractor Operator | \$13.96 | \$16.63 | \$13.62 | \$14.26 | | \$15.67 | | | \$14.07 | \$13.15 | \$13.38 | | | \$14.60 | \$13.68 | \$13.50 |
| 1351 | Crusher or Screen Plant Operator | | | | | | | | | | | | | | | | |
| 1446 | Directional Drilling Locator | | | | | | \$11.67 | | | | | | | | | | |
| 1445 | Directional Drilling Operator | | | | \$20.32 | | \$17.24 | | | | | | | | | | |
| 1139 | Electrician | \$20.96 | | \$19.87 | \$19.80 | | \$26.35 | | \$20.27 | \$19.80 | | \$20.92 | | | | \$27.11 | \$19.87 |
| 1347 | Excavator Operator, 50,000 pounds or less | \$13.46 | \$12.56 | \$13.67 | \$17.19 | | \$12.88 | \$14.38 | \$13.49 | \$17.19 | | \$13.88 | | | \$14.09 | \$12.71 | \$14.42 |
| 1348 | Excavator Operator, Over 50,000 pounds | | \$15.23 | \$13.52 | \$17.04 | | \$17.71 | | | \$16.99 | \$18.80 | \$16.22 | | | | \$14.53 | \$13.52 |
| 1150 | Flagger | \$9.30 | \$9.10 | \$8.50 | \$10.28 | \$8.81 | \$9.45 | \$8.70 | | \$10.06 | \$9.71 | \$9.03 | \$8.81 | \$9.08 | \$9.90 | \$10.33 | \$8.10 |
| 1151 | Form Builder/Setter, Structures | \$13.52 | \$12.30 | \$13.38 | \$12.91 | \$12.71 | \$12.87 | \$12.38 | \$12.26 | \$13.84 | \$12.98 | \$13.07 | \$13.61 | \$12.82 | \$14.73 | \$12.23 | \$12.25 |
| 1160 | Form Setter, Paving & Curb | \$12.36 | \$12.16 | \$13.93 | \$11.83 | \$10.71 | \$12.94 | | | \$13.16 | \$12.54 | \$11.33 | \$10.69 | | \$13.33 | \$12.34 | \$13.93 |
| 1360 | Foundation Drill Operator, Crawler Mounted | | | | \$17.99 | | | | | \$17.99 | | | | | | \$17.43 | |
| 1363 | Foundation Drill Operator, Truck Mounted | | \$16.86 | \$22.05 | \$21.51 | | \$16.93 | | | \$21.07 | \$20.20 | \$20.76 | | \$17.54 | \$21.39 | \$15.89 | \$22.05 |
| 1369 | Front End Loader Operator, 3 CY or Less | \$12.28 | \$13.49 | \$13.40 | \$13.85 | | \$13.04 | \$13.15 | \$13.29 | \$13.69 | \$12.64 | \$12.89 | | | \$13.51 | \$13.32 | \$12.17 |
| 1372 | Front End Loader Operator, Over 3 CY | \$12.77 | \$13.69 | \$12.33 | \$14.96 | | \$13.21 | \$12.86 | \$13.57 | \$14.72 | \$13.75 | \$12.32 | | | \$13.19 | \$13.17 | \$13.02 |
| 1329 | Joint Sealer | | | | | | | | | | | | | | | | |
| 1172 | Laborer, Common | \$10.30 | \$9.86 | \$10.08 | \$10.51 | \$10.71 | \$10.50 | \$10.24 | \$10.58 | \$10.72 | \$10.45 | \$10.30 | \$10.25 | \$10.03 | \$10.54 | \$11.02 | \$10.15 |
| 1175 | Laborer, Utility | \$11.80 | \$11.53 | \$12.70 | \$12.17 | \$11.81 | \$12.27 | \$12.11 | \$11.33 | \$12.32 | \$11.80 | \$11.53 | \$11.23 | \$11.50 | \$11.95 | \$11.73 | \$12.37 |
| 1346 | Loader/Backhoe Operator | \$14.18 | \$12.77 | \$12.97 | \$15.68 | | \$14.12 | | | \$15.18 | \$13.58 | \$12.87 | | \$13.21 | \$14.13 | \$14.29 | \$12.90 |
| 1187 | Mechanic | \$20.14 | \$15.47 | \$17.47 | \$17.74 | \$17.00 | \$17.10 | | | \$17.68 | \$18.94 | \$18.58 | \$17.00 | \$16.61 | \$18.46 | \$16.96 | \$17.47 |

| CLASS. # | CLASSIFICATION DESCRIPTION | ZONE TX02 *(TX20240002) | ZONE TX03 *(TX20240003) | ZONE TX04 *(TX20240004) | ZONE TX05 *(TX20240005) | ZONE TX06 *(TX20240006) | ZONE TX07 *(TX20240007) | ZONE TX08 *(TX20240008) | ZONE TX24 *(TX20240024) | ZONE TX25 *(TX20240025) | ZONE TX27 *(TX20240027) | ZONE TX28 *(TX20240028) | ZONE TX29 *(TX20240029) | ZONE TX30 *(TX20240030) | ZONE TX37 *(TX20240037) | ZONE TX38 *(TX20240038) | ZONE TX42 *(TX20240042) |
|----------|--|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| 1380 | Milling Machine Operator Motor Grader Operator, | \$15.54 | \$14.64 | \$12.22 | \$14.29 | | \$14.18 | | | \$14.32 | \$14.35 | \$12.86 | | | \$14.75 | \$13.53 | \$12.80 |
| 1390 | Fine Grade | \$17.49 | \$16.52 | \$16.88 | \$17.12 | \$18.37 | \$18.51 | \$16.69 | \$16.13 | \$17.19 | \$18.35 | \$17.07 | \$17.74 | \$17.47 | \$17.08 | \$15.69 | \$20.01 |
| 1393 | Motor Grader Operator, Rough | \$16.15 | \$14.62 | \$15.83 | \$16.20 | \$17.07 | \$14.63 | \$18.50 | | \$16.02 | \$16.44 | \$15.12 | \$16.85 | \$14.47 | \$17.39 | \$14.23 | \$15.53 |
| 1413 | Off Road Hauler | | | \$10.08 | \$12.26 | | \$11.88 | | | \$12.25 | | \$12.23 | | | \$13.00 | \$14.60 | |
| 1196 | Painter, Structures | | | | | \$21.29 | \$18.34 | | | | | | \$21.29 | | | \$18.62 | |
| 1396 | Pavement Marking Machine Operator | \$16.42 | | \$13.10 | \$13.55 | | \$19.17 | \$12.01 | | \$13.63 | \$14.60 | \$13.17 | | \$16.65 | \$10.54 | \$11.18 | \$13.10 |
| 1443 | Percussion or Rotary Drill Operator | | | | | | | | | | | | | | | | |
| 1202 | Piledriver | | | | | | | | | | | | | | | \$14.95 | |
| 1205 | Pipelayer | | \$11.87 | \$14.64 | \$13.17 | \$11.17 | \$12.79 | | \$11.37 | \$13.24 | \$12.66 | \$13.24 | \$11.17 | \$11.67 | | \$12.12 | \$14.64 |
| 1384 | Reclaimer/Pulverizer Operator | \$12.85 | | | \$11.90 | | \$12.88 | | | \$11.01 | | \$10.46 | | | | | |
| 1500 | Reinforcing Steel Worker | \$13.50 | \$14.07 | \$17.53 | \$16.17 | | \$14.00 | | | \$16.18 | \$12.74 | \$15.83 | | \$17.10 | | \$15.15 | \$17.72 |
| 1402 | Roller Operator, Asphalt | \$10.95 | | \$11.96 | \$13.29 | | \$12.78 | \$11.61 | | \$13.08 | \$12.36 | \$11.68 | | | \$11.71 | \$11.95 | \$11.50 |
| 1405 | Roller Operator, Other | \$10.36 | | \$10.44 | \$11.82 | | \$10.50 | \$11.64 | | \$11.51 | \$10.59 | \$10.30 | | \$12.04 | \$12.85 | \$11.57 | \$10.66 |
| 1411 | Scraper Operator | \$10.61 | \$11.07 | \$10.85 | \$12.88 | | \$12.27 | | \$11.12 | \$12.96 | \$11.88 | \$12.43 | | \$11.22 | \$13.95 | \$13.47 | \$10.89 |
| 1417 | Self-Propelled Hammer Operator | | | | | | | | | | | | | | | | |
| 1194 | Servicer | \$13.98 | \$12.34 | \$14.11 | \$14.74 | | \$14.51 | \$15.56 | \$13.44 | \$14.58 | \$14.31 | \$13.83 | | \$12.43 | \$13.72 | \$13.97 | \$14.11 |
| 1513 | Sign Erector | | | | | | | | | | | | | | | | |
| 1708 | Slurry Seal or Micro-Surfacing Machine Operator | | | | | | | | | | | | | | | | |
| 1341 | Small Slipform Machine Operator | | | | | | | | | \$15.96 | | | | | | | |
| 1515 | Spreader Box Operator | \$12.60 | | \$13.12 | \$14.71 | | \$14.04 | | | \$14.73 | \$13.84 | \$13.68 | | \$13.45 | \$11.83 | \$13.58 | \$14.05 |
| 1705 | Structural Steel Welder | | | | | | | | | | | | | | | \$12.85 | |
| 1509 | Structural Steel Worker | | | | | | \$19.29 | | | | | | | | | \$14.39 | |
| 1339 | Subgrade Trimmer | | | | | | | | | | | | | | | | |
| 1143 | Telecommunication Technician | | | | | | | | | | | | | | | | |
| 1145 | Traffic Signal/Light Pole Worker | | | | | | \$16.00 | | | | | | | | | | |
| 1440 | Trenching Machine Operator, Heavy | | | | | | \$18.48 | | | | | | | | | | |
| 1437 | Trenching Machine Operator, Light | | | | | | | | | | | | | | | | |
| 1609 | Truck Driver Lowboy-Float | \$14.46 | \$13.63 | \$13.41 | \$15.00 | \$15.93 | \$15.66 | | | \$16.24 | \$16.39 | \$14.30 | \$16.62 | \$15.63 | \$14.28 | \$16.03 | \$13.41 |
| 1612 | Truck Driver Transit-Mix | | | | \$14.14 | | | | | \$14.14 | | | | | | | |
| 1600 | Truck Driver, Single Axle | \$12.74 | \$10.82 | \$10.75 | \$13.04 | \$11.61 | \$11.79 | \$13.53 | \$13.16 | \$12.31 | \$13.40 | \$10.30 | \$11.61 | | \$11.97 | \$11.46 | \$10.75 |
| 1606 | Truck Driver, Single or Tandem Axle Dump Truck | \$11.33 | \$14.53 | \$11.95 | \$12.95 | | \$11.68 | | \$14.06 | \$12.62 | \$11.45 | \$12.28 | | \$13.08 | \$11.68 | \$11.48 | \$11.10 |
| 1607 | Truck Driver, Tandem Axle Tractor with Semi Trailer | \$12.49 | \$12.12 | \$12.50 | \$13.42 | | \$12.81 | \$13.16 | | \$12.86 | \$16.22 | \$12.50 | | | \$13.80 | \$12.27 | \$12.50 |
| 1441 | Tunneling Machine Operator, Heavy | | | | | | | | | | | | | | | | |
| 1442 | Tunneling Machine Operator, Light | | | | | | | | | | | | | | | | |
| 1706 | Welder | | \$14.02 | | \$14.86 | | \$15.97 | | \$13.74 | \$14.84 | | | | | \$13.78 | | |
| 1520 | Work Zone Barricade Servicer | \$10.30 | \$12.88 | \$11.46 | \$11.70 | \$11.57 | \$11.85 | \$10.77 | | \$11.68 | \$12.20 | \$11.22 | \$11.51 | \$12.96 | \$10.54 | \$11.67 | \$11.76 |

Notes:

*Represents the USDOL wage decision.

Any worker employed on this project shall be paid at the rate of one and one half (1-1/2) times the regular rate for every hour worked in excess of forty (40) hours per week.

For reference, the titles and descriptions for the classifications listed here are detailed further in the AGC of Texas' *Standard Job Classifications and Descriptions for Highway, Heavy, Utilities, and Industrial Construction in Texas* posted on the AGC's Web site for any contractor.

**TEXAS COUNTIES IDENTIFIED BY
WAGE RATE ZONES: 2, 3, 4, 5, 6, 7, 8, 24, 25, 27, 28, 29, 30, 37, 38, 42**

| County Name | Zone | County Name | Zone | County Name | Zone | County Name | Zone |
|---------------|------|-------------|------|-------------|------|---------------|------|
| Anderson | 28 | Donley | 37 | Karnes | 27 | Reagan | 37 |
| Andrews | 37 | Duval | 30 | Kaufman | 25 | Real | 37 |
| Angelina | 28 | Eastland | 37 | Kendall | 7 | Red River | 28 |
| Aransas | 29 | Ector | 2 | Kenedy | 30 | Reeves | 8 |
| Archer | 25 | Edwards | 8 | Kent | 37 | Refugio | 27 |
| Armstrong | 2 | El Paso | 24 | Kerr | 27 | Roberts | 37 |
| Atascosa | 7 | Ellis | 25 | Kimble | 37 | Robertson | 7 |
| Austin | 38 | Erath | 28 | King | 37 | Rockwall | 25 |
| Bailey | 37 | Falls | 28 | Kinney | 8 | Runnels | 37 |
| Bandera | 7 | Fannin | 28 | Kleberg | 27 | Rusk | 4 |
| Bastrop | 7 | Fayette | 27 | Knox | 37 | Sabine | 28 |
| Baylor | 37 | Fisher | 37 | Lamar | 28 | San Augustine | 28 |
| Bee | 27 | Floyd | 37 | Lamb | 37 | San Jacinto | 38 |
| Bell | 7 | Foard | 37 | Lampasas | 7 | San Patricio | 29 |
| Bexar | 7 | Fort Bend | 38 | LaSalle | 30 | San Saba | 37 |
| Blanco | 27 | Franklin | 28 | Lavaca | 27 | Schleicher | 37 |
| Borden | 37 | Freestone | 28 | Lee | 27 | Scurry | 37 |
| Bosque | 28 | Frio | 27 | Leon | 28 | Shackelford | 37 |
| Bowie | 4 | Gaines | 37 | Liberty | 38 | Shelby | 28 |
| Brazoria | 38 | Galveston | 38 | Limestone | 28 | Sherman | 37 |
| Brazos | 7 | Garza | 37 | Lipscomb | 37 | Smith | 4 |
| Brewster | 8 | Gillespie | 27 | Live Oak | 27 | Somervell | 28 |
| Briscoe | 37 | Glasscock | 37 | Llano | 27 | Starr | 30 |
| Brooks | 30 | Goliad | 29 | Loving | 37 | Stephens | 37 |
| Brown | 37 | Gonzales | 27 | Lubbock | 2 | Sterling | 37 |
| Burleson | 7 | Gray | 37 | Lynn | 37 | Stonewall | 37 |
| Burnet | 27 | Grayson | 25 | Madison | 28 | Sutton | 8 |
| Caldwell | 7 | Gregg | 4 | Marion | 28 | Swisher | 37 |
| Calhoun | 29 | Grimes | 28 | Martin | 37 | Tarrant | 25 |
| Callahan | 25 | Guadalupe | 7 | Mason | 27 | Taylor | 2 |
| Cameron | 3 | Hale | 37 | Matagorda | 27 | Terrell | 8 |
| Camp | 28 | Hall | 37 | Maverick | 30 | Terry | 37 |
| Carson | 2 | Hamilton | 28 | McCulloch | 37 | Throckmorton | 37 |
| Cass | 28 | Hansford | 37 | McLennan | 7 | Titus | 28 |
| Castro | 37 | Hardeman | 37 | McMullen | 30 | Tom Green | 2 |
| Chambers | 38 | Hardin | 38 | Medina | 7 | Travis | 7 |
| Cherokee | 28 | Harris | 38 | Menard | 37 | Trinity | 28 |
| Childress | 37 | Harrison | 42 | Midland | 2 | Tyler | 28 |
| Clay | 25 | Hartley | 37 | Milam | 28 | Upshur | 4 |
| Cochran | 37 | Haskell | 37 | Mills | 37 | Upton | 37 |
| Coke | 37 | Hays | 7 | Mitchell | 37 | Uvalde | 30 |
| Coleman | 37 | Hemphill | 37 | Montague | 37 | Val Verde | 8 |
| Collin | 25 | Henderson | 28 | Montgomery | 38 | Van Zandt | 28 |
| Collingsworth | 37 | Hidalgo | 3 | Moore | 37 | Victoria | 6 |
| Colorado | 27 | Hill | 28 | Morris | 28 | Walker | 28 |
| Comal | 7 | Hockley | 37 | Motley | 37 | Waller | 38 |
| Comanche | 37 | Hood | 28 | Nacogdoches | 28 | Ward | 37 |
| Concho | 37 | Hopkins | 28 | Navarro | 28 | Washington | 28 |
| Cooke | 37 | Houston | 28 | Newton | 28 | Webb | 3 |
| Coryell | 7 | Howard | 37 | Nolan | 37 | Wharton | 27 |
| Cottle | 37 | Hudspeth | 8 | Nueces | 29 | Wheeler | 37 |
| Crane | 37 | Hunt | 25 | Ochiltree | 37 | Wichita | 5 |
| Crockett | 8 | Hutchinson | 37 | Oldham | 37 | Wilbarger | 37 |
| Crosby | 2 | Irion | 2 | Orange | 38 | Willacy | 30 |
| Culberson | 8 | Jack | 28 | Palo Pinto | 28 | Williamson | 7 |
| Dallam | 37 | Jackson | 27 | Panola | 28 | Wilson | 7 |
| Dallas | 25 | Jasper | 28 | Parker | 25 | Winkler | 37 |
| Dawson | 37 | Jeff Davis | 8 | Parmer | 37 | Wise | 25 |
| Deaf Smith | 37 | Jefferson | 38 | Pecos | 8 | Wood | 28 |
| Delta | 25 | Jim Hogg | 30 | Polk | 28 | Yoakum | 37 |
| Denton | 25 | Jim Wells | 27 | Potter | 2 | Young | 37 |
| DeWitt | 27 | Johnson | 25 | Presidio | 8 | Zapata | 30 |
| Dickens | 37 | Jones | 25 | Rains | 28 | Zavala | 30 |
| Dimmit | 30 | | | Randall | 2 | | |

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 to Item 000

Small Business Enterprise in State Funded Projects



1. DESCRIPTION

The purpose of this Special Provision is to carry out the Texas Department of Transportation's policy of ensuring that Small Business Enterprise (SBE) has an opportunity to participate in the performance of contracts. If the SBE goal is greater than zero, Article A of this Special Provision shall apply to this Contract; otherwise, Article B of this Special Provision applies. The percentage goal for SBE participation in the work to be performed under this contract will be shown in the proposal.

2. DEFINITIONS

Small Business Enterprise (SBE) is a firm (including affiliates) certified by the Department whose annual gross receipts do not exceed the U.S. Small Business Administration's size standards for 4 consecutive years. Firms certified as Historically Underutilized Businesses (HUBs) by the Texas Comptroller of Public Accounts and as Disadvantaged Business Enterprises (DBEs) by the Texas Uniform Certification Program automatically qualify as SBEs.

2.1. Article A - SBE Goal is Greater than Zero.

2.1.1. **Policy.** The Department is committed to providing contracting opportunities for small businesses. In this regard, it is the Department's policy to develop and maintain a program in order to facilitate contracting opportunities for small businesses. Consequently, the requirements of the Department's Small Business Enterprise Program apply to this contract as follows:

2.1.1.1. The Contractor shall make a good faith effort to meet the SBE goal for this contract.

2.1.1.2. The Contractor and any Subcontractors shall not discriminate on the basis of race, color, national origin, age, disability or sex in the award and performance of this contract. These nondiscrimination requirements shall be incorporated into any subcontract and purchase order.

2.1.1.3. After a conditional award is made to the low bidder, the Department will determine the adequacy of a Contractor's efforts to meet the contract goal, as is outlined under Section 2, "Contractor's Responsibilities." If the requirements of Section 2 are met, the contract will be forwarded to the Contractor for execution.

The Contractor's performance, during the construction period of the contract in meeting the SBE goal, will be monitored by the Department.

2.1.2. **Contractor's Responsibilities.** These requirements must be satisfied by the Contractor. A SBE Contractor may satisfy the SBE requirements by performing at least 25% of the contract work with its own organization as defined elsewhere in the contract.

2.1.2.1. The Contractor shall submit a completed SBE Commitment Agreement Form for each SBE they intend to use to satisfy the SBE goal so as to arrive in the Department's Office of Civil Rights (OCR) in Austin, Texas not later than 5:00 p.m. on the 10th business day, excluding national holidays, after the conditional award of the contract. When requested, additional time, not to exceed 7 business days, excluding national holidays, may be granted based on documentation submitted by the Contractor.

2.1.2.2. A Contractor who cannot meet the contract goal, in whole or in part, shall document the good faith efforts taken to meet the SBE goal. The Department will consider as good faith efforts all documented explanations

that are submitted and that describe a Contractor's failure to meet a SBE goal or obtain SBE participation, including:

- 2.1.2.2.1. Advertising in general circulation, trade association, and/or minority/women focus media concerning subcontracting opportunities,
- 2.1.2.2.2. Dividing the contract work into reasonable portions in accordance with standard industry practices,
- 2.1.2.2.3. Documenting reasons for rejection or meeting with the rejected SBE to discuss the rejection,
- 2.1.2.2.4. Providing qualified SBEs with adequate information about bonding, insurance, plans, specifications, scope of work, and the requirements of the contract,
- 2.1.2.2.5. Negotiating in good faith with qualified SBEs, not rejecting qualified SBEs who are also the lowest responsive bidder, and;
- 2.1.2.2.6. Using the services of available minorities and women, community organizations, contractor groups, local, state and federal business assistance offices, and other organizations that provide support services to SBEs.
- 2.1.2.3. The good faith effort documentation is due at the time and place specified in Subarticle 2.(a). of this Special Provision. The Director of the DBE & SBE Programs Section will evaluate the Contractor's documentation. If it is determined that the Contractor has failed to meet the good faith effort requirements, the Contractor will be given an opportunity for reconsideration by the Department.
- 2.1.2.4. Should the bidder to whom the contract is conditionally awarded refuse, neglect or fail to meet the SBE goal and/or demonstrate to the Department's satisfaction sufficient efforts to obtain SBE participation, the proposal guaranty filed with the bid shall become the property of the State, not as a penalty, but as liquidated damages to the Department.
- 2.1.2.5. The Contractor must not terminate a SBE subcontractor submitted on a commitment agreement for a contract with an assigned goal without the prior written consent of the Department.
- 2.1.2.6. The Contractor shall designate a SBE contact person who will administer the Contractor's SBE program and who will be responsible for submitting reports, maintaining records, and documenting good faith efforts to use SBEs.
- 2.1.2.7. The Contractor must inform the Department of the representative's name, title and telephone number within 10 days of beginning work.
- 2.1.3. **Eligibility of SBEs.**
- 2.1.3.1. The Department certifies the eligibility of SBEs.
- 2.1.3.2. The Department maintains and makes available to interested parties a directory of certified SBEs.
- 2.1.3.3. Only firms certified at the time of letting or at the time the commitments are submitted are eligible to be used in the information furnished by the Contractor required under Section 2.(a) above.
- 2.1.3.4. Certified HUBs and DBEs are eligible as SBEs.
- 2.1.3.5. Small Business Size Regulations and Eligibility is referenced on e-CFR (Code of Federal Regulations), Title 13 – Business Credit and Assistance, Chapter 1 – Small Business Administration, Part 121 – Small Business Size Regulations, Subpart A – Size Eligibility Provisions and Standards.
- 2.1.4. **Determination of SBE Participation.** SBE participation shall be counted toward meeting the SBE goal in this contract in accordance with the following:

- 2.1.4.1. A Contractor will receive credit for all payments actually made to a SBE for work performed and costs incurred in accordance with the contract, including all subcontracted work.
- 2.1.4.2. A SBE Contractor or subcontractor may not subcontract more than 75% of a contract. The SBE shall perform not less than 25% of the value of the contract work with its own organization.
- 2.1.4.3. A SBE may lease equipment consistent with standard industry practice. A SBE may lease equipment from the prime contractor if a rental agreement, separate from the subcontract specifying the terms of the lease arrangement, is approved by the Department prior to the SBE starting the work in accordance with the following:
- 2.1.4.3.1. If the equipment is of a specialized nature, the lease may include the operator. If the practice is generally acceptable with the industry, the operator may remain on the lessor's payroll. The operator of the equipment shall be subject to the full control of the SBE, for a short term, and involve a specialized piece of heavy equipment readily available at the job site.
- 2.1.4.3.2. For equipment that is not specialized, the SBE shall provide the operator and be responsible for all payroll and labor compliance requirements.
- 2.1.5. **Records and Reports.**
- 2.1.5.1. The Contractor shall submit monthly reports, after work begins, on SBE payments, (including payments to HUBs and DBEs). The monthly reports are to be sent to the Area Engineer's office. These reports will be due within 15 days after the end of a calendar month.
- These reports will be required until all SBE subcontracting or supply activity is completed. The "SBE Progress Report" is to be used for monthly reporting. Upon completion of the contract and prior to receiving the final payment, the Contractor shall submit the "SBE Final Report" to the Office of Civil Rights and a copy to the Area Engineer. These forms may be obtained from the Office of Civil Rights and reproduced as necessary. The Department may verify the amounts being reported as paid to SBEs by requesting, on a random basis, copies of invoices and cancelled checks paid to SBEs. When the SBE goal requirement is not met, documentation supporting Good Faith Efforts, as outlined in Section 2.(b) of this Special Provision, must be submitted with the Final Report.
- 2.1.5.2. SBE subcontractors and/or suppliers should be identified on the monthly report by SBE certification number, name and the amount of actual payment made to each during the monthly period. **These reports are required regardless of whether or not SBE activity has occurred in the monthly reporting period.**
- 2.1.5.3. All such records must be retained for a period of 3 years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the Department.
- 2.1.6. **Compliance of Contractor.** To ensure that SBE requirements of this contract are complied with, the Department will monitor the Contractor's efforts to involve SBEs during the performance of this contract. This will be accomplished by a review of monthly reports submitted by the Contractor indicating his progress in achieving the SBE contract goal and by compliance reviews conducted by the Department.
- A Contractor's failure to comply with the requirements of this Special Provision shall constitute a material breach of this contract. In such a case, the Department reserves the right to employ remedies as the Department deems appropriate in the terms of the contract.
- 2.2. **Article B - No SBE Goal.**
- 2.2.1. **Policy.** It is the policy of the Department that SBEs shall have an opportunity to participate in the performance of contracts. Consequently, the requirements of the Department's Small Business Enterprise Program apply to this contract as specified in Section 2-5 of this Article.

- 2.2.2. **Contractor's Responsibilities.** If there is no SBE goal, the Contractor will offer SBEs an opportunity to participate in the performance of contracts and subcontracts.
- 2.2.3. **Prohibit Discrimination.** The Contractor and any subcontractor shall not discriminate on the basis of race, color, national origin, religion, age, disability or sex in the award and performance of contracts. These nondiscrimination requirements shall be incorporated into any subcontract and purchase order.
- 2.2.4. **Records and Reports.**
- 2.2.4.1. The Contractor shall submit reports on SBE (including HUB and DBE) payments. The reports are to be sent to the Area Engineer's office. These reports will be due annually by the 31st of August or at project completion, whichever comes first.
- These reports will be required until all SBE subcontracting or supply activity is completed. The "SBE Progress Report" is to be used for reporting. Upon completion of the contract and prior to receiving the final payment, the Contractor shall submit the "SBE Final Report" to the Office of Civil Rights and a copy to the Area Engineer. These forms may be obtained from the Office of Civil Rights and reproduced as necessary. The Department may verify the amounts being reported as paid to SBEs by requesting copies of invoices and cancelled checks paid to SBEs on a random basis.
- 2.2.4.2. SBE subcontractors and/or suppliers should be identified on the report by SBE Certification Number, name and the amount of actual payment made.
- 2.2.4.3. All such records must be retained for a period of 3 years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the Department.

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 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 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.

Section 2.8.2., "Proposal Guaranty," third paragraph is replaced by the following.

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

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 in the DHS E-Verify system before award, the Contractor must submit documentation showing that they are compliant within 5 calendar days after bid opening. A Contractor that fails to comply or respond within the deadline will be declared nonresponsive. The Bidder forfeiting the proposal guaranty will not be considered in future proposals for the same work unless there has been a substantial change in the scope of the work.

The Department may recommend that the Commission:

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

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

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

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 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.

Section 1.1. "Buy America,." This section is voided and replaced by the following:

- 1.1. **Buy America.** Comply with the latest provisions of Build America, Buy America Act (BABA Act) of the Bipartisan Infrastructure Law and applicable CFR, which restrict funds being made available from Federal financial assistance programs unless all the iron products, steel products, manufactured products, and construction materials used in the project are produced in the United States. Use iron or steel products, manufactured products, or construction materials produced in the United States for all permanently installed materials and products except when defined in Section 1.1.5., "Buy America Exceptions."

A material is solely classified based on its status at the time it is brought to the work site as either an iron or steel product, construction material, manufactured product, or Section 70917(c) material. Refer to the Buy America Material Classification Sheet found in the general notes or txdot.gov for additional clarification on material classification.

- 1.1.1. **Iron or Steel.** Iron or steel products means articles, materials, or supplies that consist of iron or steel or a combination of both. For iron or steel products, manufacturing includes any process that modifies the chemical content, physical shape or size, or final finish of a product. The manufacturing process begins with initial melting and mixing and continues through fabrication (cutting, drilling, welding, bending, etc.) and coating (paint, galvanizing, epoxy, etc.).

For iron or steel products submit a notarized original FORM D-9-USA-1 (Department Form 1818) with the proper attachments for verification of compliance.

- 1.1.2. **Section 70917(c) Materials.** Section 70917(c) materials mean cement and cementitious material; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives. Section 70917(c) materials do not require domestic sourcing or Buy America certification.

- 1.1.3. **Construction Materials.** Construction materials are classified as articles, materials, or supplies that consist of only one of the items listed in bullets below. Minor additions (as determined by plans or Engineer) to any of the items listed is still a construction material.

- non-ferrous metals,
- plastic and polymer-based products (including polyvinyl chloride, composite building materials, and polymers used in fiber optic cables),
- glass (including optic glass),
- fiber optic cable (including drop cable),
- optical fiber,
- lumber,
- engineered wood, or
- drywall.

For construction materials, submit a Construction Material Buy America Certification Form (Department Form 2806) for verification of compliance that all manufacturing processes, as required, occurred in the

United States. Each construction material has specific certification requirements stated below. Provide additional documentation as requested.

Details shown on the plans provide additional clarification on Buy America requirements.

For non-ferrous metals, certification requires all manufacturing processes, from initial smelting or melting through final shaping, coating, and assembly, occurred in the United States.

For plastic and polymer-based products (including polyvinyl chloride, composite building materials, and polymers used in fiber optic cables), certification requires all manufacturing processes, from initial combination of constituent plastic or polymer-based inputs, or, where applicable, constituent composite materials, until the item is in its final form, occurred in the United States.

For glass (including optic glass), certification requires all manufacturing processes, from initial batching and melting of raw materials through annealing, cooling, and cutting, occurred in the United States.

For fiber optic cable (including drop cable), certification requires all manufacturing processes, from the initial ribboning (if applicable), through buffering, fiber stranding and jacketing, occurred in the United States. All manufacturing processes also include the standards for glass and optical fiber, but not for non-ferrous metals, plastic and polymer-based products, or any others.

For optical fiber, certification requires all manufacturing processes, from the initial preform fabrication stage through the completion of the draw, occurred in the United States.

For lumber, certification requires all manufacturing processes, from initial debarking through treatment and planing, occurred in the United States.

For engineered wood, certification requires all manufacturing processes from the initial combination of constituent materials until the wood product is in its final form, occurred in the United States.

For drywall, certification requires all manufacturing processes, from initial blending of mined or synthetic gypsum plaster and additives through cutting and drying of sandwiched panels, occurred in the United States.

1.1.4. **Manufactured Products.** Materials classified as a manufactured product are currently waived from Buy America requirements by an FHWA general waiver and are not required to be domestically sourced. However, iron or steel products incorporated into manufactured products must meet iron and steel compliance requirements.

1.1.5. **Buy America Exceptions.** Use of iron, steel, construction materials, and manufactured products manufactured in the United States is required unless the material meets an exception below.

- A waiver exists exempting the material from Buy America compliance.
- The total value of the non-compliant products (other than iron or steel products) is no more than the lesser of \$1,000,000 or 5% of Total Applicable Costs for the project. Total Applicable Cost means the actual cost of all materials requiring Buy America compliance including iron, steel, or other materials that are within the scope of existing waivers. Contractor must provide documentation showing under threshold in advance for Engineer's consideration.
- The total value of foreign iron and steel products, including delivery, does not exceed 0.1% of the total Contract cost or \$2,500, whichever is greater. Contractor must provide documentation showing under threshold in advance for Engineer's consideration.
- Foreign steel may be allowed when the Contract contains an alternate item for a foreign source iron or steel product and the Contract is awarded based on the alternate item.

- The materials are temporarily installed or are supplies, tools and equipment not incorporated into the project. Temporarily installed means the materials and products must be removed at the end of the project or may be removed at the contractor's convenience with Engineers approval.

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 19.1., Minimum Wage Requirements for Federally Funded Contracts. The second paragraph is voided and replaced by the following:

Submit electronic payroll records to the Engineer using the Department's payroll system.

Section 19.2., Minimum Wage Requirements for State Funded Contracts. The second paragraph is voided and replaced by the following:

Submit electronic payroll records to the Engineer using the Department's payroll system.

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 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.

Article 7.20., "Security Incidents," is added.

- 20.1. Reporting of Security Incidents.** Immediately notify the Department's [Cyber Security Operations Center \(CSOC\) via the Report Cybersecurity Incident Page](#) on www.txdot.gov, of any potential cybersecurity incident or breach involving Department data. A breach of system security is the unauthorized acquisition of computerized data that compromises the security, confidentiality, or integrity of sensitive personal information maintained by a person, including data that is encrypted if the person accessing the data has the key required to decrypt the data.
- 20.2. Liability for costs incurred.** The Department reserves the right to hold the Contractor liable for all costs incurred by the Department to resolve a security incident introduced by the Contractor, their Subcontractors, or their Suppliers.

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 8 Prosecution and Progress



Item 8, "Prosecution and Progress" 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., "Computation of Contract Time for Completion." The second paragraph is voided and replaced by the following:

The development of the conceptual time determination is intended to establish the number of working days on the Contract. Upon request, the Engineer will provide the conceptual time determination schedule to the Contractor for informational purposes only. The schedule assumes generic resources, production rates, sequences of construction, and average weather conditions based on historic data. Schedule labor, equipment, procurement of materials, subcontractor work, and all other necessary means to prosecute the work within the number of working days specified by the 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 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." The 15% markup will be paid when standby is associated with extra work but will not be paid when standby is associated with damages.

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 Rental Rate Blue Book 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 Rental Rate Blue Book 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 247

Flexible Base



Item 247, "Flexible Base," 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 247.2.1., "Aggregate." This Section is voided and replaced by the following.

Furnish aggregate of the type and grade shown on the plans and meeting the requirements shown in Table 1. Each source must meet Table 1 requirements for liquid limit, plasticity index, and wet ball mill for the grade specified. Do not use additives, such as but not limited to cement, emulsion, foamed asphalt, or lime, to modify aggregates to meet the requirements of Table 1, unless otherwise shown on the plans.

Unless otherwise shown on the plans, the unconfined compressive strength is waived when the flexible base material meets the #200 sieve requirement.

Table 1
Material Requirements

| Property | Test Method | Grade 1–2 ³ | Grade 3 | Grade 4 | Grade 5 ³ |
|---|---------------------------|------------------------|-----------------------|-----------------------|-----------------------|
| Master gradation sieve size (cumulative % retained) | | – | – | | – |
| 2-1/2" | | 0 | 0 | | 0 |
| 1-3/4" | | 0–10 | 0–10 | | 0–5 |
| 7/8" | Tex-110-E | 10–35 | – | | 10–35 |
| 3/8" | | 30–65 | – | | 35–65 |
| #4 | | 45–75 | 45–75 | | 45–75 |
| #40 | | 65–90 | 50–85 | | 70–90 |
| #200 ^{1, 2} | | 85–95 | – | | – |
| Liquid limit, % Max | Tex-104-E | 40 | 40 | As shown on the plans | 35 |
| Plasticity index, Max | | 10 | 12 | | 10 |
| Plasticity index, Min | Tex-106-E | As shown on the plans | As shown on the plans | | As shown on the plans |
| Wet ball mill, % Max | | 40 | – | | 40 |
| Wet ball mill, % Max increase passing the #40 sieve | Tex-116-E | 20 | – | | 20 |
| Min compressive strength ² , psi | | – | – | | – |
| lateral pressure 0 psi | Tex-117-E | 35 | – | | – |
| lateral pressure 3 psi | | – | – | | 90 |
| lateral pressure 15 psi | | 175 | – | | 175 |

- The #200 sieve test is only required to meet the waiver of the unconfined compressive strength. The #200 sieve test requirement is only applicable to stockpile samples from Section 247.2.4.
- Compressive strength and #200 sieve test requirements are waived when the flexible base is mixed with or without existing material and treated with cement, emulsion, foamed asphalt, or lime, unless otherwise shown on the plans.
- Grade 3 may be substituted for Grade 1–2 or Grade 5 when the flexible base is mixed with or without existing material and treated with cement, emulsion, foamed asphalt, or lime, as approved. The Grade 3 flexible base must meet the wet ball mill requirements of Grade 1–2 or Grade 5.

Section 247.2.1.2.4., "Type D." The third sentence is voided and replaced by the following.

Crushed concrete must meet the requirements in Section 247.2.1.3., "Recycled Material," and be managed in a way to provide for uniform quality.

Section 247.2.1.3., "Recycled Material." This Section is voided and replaced by the following.

Reclaimed asphalt pavement (RAP) and other recycled materials may be used as shown on the plans. Request approval to blend two or more sources of recycled materials. When RAP is allowed, do not exceed 20% RAP by weight, unless otherwise shown on the plans. The percentage limitations for other recycled materials are as shown on the plans.

Provide recycled materials, other than RAP, that have a maximum sulfate content of 3,000 ppm when tested in accordance with [Tex-145-E](#). Certify accordance with [DMS-11000](#), "Evaluating and Using Nonhazardous Recyclable Materials Guidelines." In addition, recycled materials must be free of reinforcing steel and other objectionable material and have at most 1.5% deleterious material when tested in accordance with [Tex-413-A](#). The liquid limit, plasticity index, wet ball mill, and compressive strength for all recycled materials are waived. When using RAP, crush RAP so that 100% passes the 2-in. sieve and does not exceed a maximum percent loss from decantation of 5.0% when tested in accordance with [Tex-406-A](#). Test RAP without removing the asphalt. The final product must meet the requirements shown in Table 1 for the grade specified, except when the Department requires a specific amount of Department-furnished RAP be added to the blend, unless otherwise shown on the plans.

The Contractor is responsible for uniformly blending the recycled material with the flexible base material to build a stockpile to meet the percentages required. Any Contractor-furnished surplus of recycled materials must remain the property of the Contractor. Remove Contractor-owned recycled materials from the project, and dispose of them in conformance with federal, state, and local regulations before project acceptance.

Section 247.2.4., "Stockpile Approval." This Section is added.

Stockpile is approved when the Engineer's test results meet the material requirements shown in Table 1.

Section 247.2.4.1., "Sampling." This Section is added.

The Contractor and the Engineer will sample flexible base from completed stockpiles in accordance with [Tex-100-A](#). Personnel conducting sampling must be certified by the Department-approved soils and base certification program.

Sampling stockpiles may be located at the production site or at the project location. The Contractor must witness the Engineer's sampling and sample the stockpile for their own testing, and label as deemed necessary.

Sample the stockpile for the Engineer as shown on the plans. When the Contractor samples the stockpile for the Engineer, the Engineer will witness the sampling of material designated for the Engineer and the Materials and Tests Division (MTD). The Engineer will label their sampling containers as "Engineer" and "MTD," or as deemed necessary.

The Engineer will take immediate possession of the sample containers for the Engineer and MTD. The Engineer will maintain custody of the samples until all testing and reporting are completed.

Section 247.2.4.2., "Referee Testing." This Section is added.

Referee testing is applicable for stockpile testing only. MTD is the referee laboratory. MTD may designate a laboratory from the Department's MPL for *Commercial Laboratories Approved for Flexible Base Referee Requests* as the referee laboratory as deemed necessary. The designated laboratory must not perform any testing under this Item for the Engineer or Contractor.

The Contractor may request referee testing when the Engineer's test results fail to meet any of the material requirements shown in Table 1 and when the Contractor's sample from Section 247.2.4.1., "Sampling," for the same failing Department test passes. The tests must be performed by a laboratory on the Department's MPL for *Commercial Laboratories Approved for Flexible Base Referee Requests*. Submit the request by email within 5 working days after receiving failing test results from the Engineer. Include completed test reports passing the applicable requirements shown in Table 1 in the email.

Record and submit completed test reports electronically on Department-provided templates in their original format meeting the applicable material requirements shown in Table 1. Use Department-provided templates to record and calculate all test data. The Engineer and the Contractor will provide any available test results to the other party when requested.

Section 247.4.3., "Compaction." The first paragraph is voided and replaced by the following.

Compact using density control unless otherwise shown on the plans. Multiple lifts are permitted as shown on the plans or approved. Bring each layer to the moisture content directed. When necessary, sprinkle the material in accordance with Item 204, "Sprinkling." Maintain moisture during compaction within $\pm 2.0\%$ of the optimum moisture content as determined in accordance with [Tex-113-E](#).

Section 247.4.3.2., "Density Control." This Section is voided and replaced by the following.

Compact to at least 100% of the maximum dry density and within $\pm 2.0\%$ of the optimum moisture content as determined in accordance with [Tex-113-E](#), unless otherwise shown on the plans. Provide the Engineer with the beginning and ending station numbers of the area completed for testing. The Engineer will determine roadway density and moisture content of completed sections in accordance with [Tex-115-E](#), Part I. The Engineer will determine random locations for testing in accordance with [Tex-115-E](#), Part IV. Do not achieve density by drying the material after compaction.

When the density is less than 100% of the maximum dry density, the Engineer may perform additional testing to determine the extent of the area to correct. The Engineer may accept the section if no more than one of the five most recent density tests is below the specified density and the failing test is no more than 3 pcf below the specified density.

Section 247.4.3.3., "Miscellaneous and Small Areas." This Section is added.

Miscellaneous areas are those that typically involve handwork or discontinuous paving operations, such as temporary detours, driveways, mailbox turnouts, crossovers, gores, spot level-up areas, and other similar areas. Miscellaneous and small areas are not subject to random sampling procedure but may be tested as directed.

Section 247.4.6., "Ride Quality." This Section is voided and replaced by the following.

Measurement of ride quality only applies to the final travel lanes that receive a one- or two-course surface treatment for the final riding surface, unless otherwise shown on the plans. Measure the ride quality of the base course either before or after the application of the prime coat, as directed, and before placement of the surface treatment. Use a certified profiler operator on the Department's MPL. When requested, furnish the Engineer with documentation for the person certified to operate the profiler.

Provide all profile data to the Engineer in electronic data files within 3 days of measuring the ride quality using the format specified in [Tex-1001-S](#). The Engineer will use Department software to evaluate longitudinal profiles to determine areas requiring corrective action. Correct 0.1-mi. sections with an average international roughness index (IRI) value greater than 100 in. per mile to an IRI value of 100 in. per mile or less, unless otherwise shown on the plans. Re-profile and correct sections that fail to maintain ride quality before the placement of the surface treatment, as directed. Unless ride deterioration is due to environmental impact, traffic, or other incidents outside the Contractor's control, perform this work at no additional expense to the Department, as approved.

Special Provision to Item 300 Asphalt, Oils, and Emulsions



Item 300, "Asphalt, Oils, and Emulsions" of the Standard Specifications is replaced by Special Specification [3096](#), "Asphalts, Oils, and Emulsions." All Item 300 Special Provisions are no longer available, beginning with the April 2022 letting.

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 316

Seal Coat



Item 316, "Seal Coat" 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 4.8, "Asphalt Placement" is supplemented by the following:

4.8.5. Collect all samples in accordance with Tex-500-C, "Sampling Bituminous Materials, Pre-Molded Joint Fillers, and Joint Sealers" from the distributor and with witness by the Engineer.

At least once per project, collect split samples of each binder grade and source used. The Engineer will submit one split sample to MTD for testing and retain the other split sample.

In addition, collect one sample of each binder grade and source used on the project for each production day. The Engineer will retain these samples.

The Engineer will keep all retained samples for one yr., for hot-applied binders and cutback asphalts; or for two mo., for emulsified asphalts. The Engineer may submit retained samples to MTD for testing as necessary or as requested by MTD.

Special Provision to Item 420

Concrete Substructure



Item 420, "Concrete Substructures" 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 420.6., "Payment." The first paragraph is replaced by the following:

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 the class of concrete and element identified and by the special designation when appropriate. This price is full compensation for furnishing, hauling, and mixing concrete materials; furnishing, bending, fabricating, splicing, welding and placing the required reinforcement; clips, blocks, metal spacers, ties, wire, or other materials used for fastening reinforcement in place; placing, finishing, and curing concrete; mass placement controls; applying ordinary surface finish; furnishing and placing drains, metal flashing strips, and expansion-joint material; excavation, subgrade preparation; and forms and falsework, equipment, labor, tools, and incidentals.

Special Provision to Item 421

Hydraulic Cement Concrete



Item 421, "Hydraulic Cement 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 421.2., "Materials," the second sentence of the first paragraph is voided and replaced by the following.

Provide aggregates from sources listed in the Department's Concrete Rated Source Quality Catalog (CRSQC).

Article 421.2.2., Supplementary Cementing Materials (SCM), is voided and replaced with the following.

Supplementary Cementitious Materials (SCM).

- **Coal Ash.** Furnish sources of fly ash, , Modified fly ash (MFA), harvested coal ash, and Ground Bottom Ash (GBA) conforming to [DMS-4610](#), "Coal Ash."
- **Slag Cement.** Furnish Slag Cement in accordance with [DMS-4620](#), "Slag Cement."
- **Silica Fume.** Furnish silica fume in accordance with [DMS-4630](#), "Silica Fume."
- **Natural Pozzolans.** Furnish Natural Pozzolans in accordance with [DMS-4635](#), "Natural Pozzolans."

Article 421.3.1.3., "Agitators and Truck and Stationary Mixers," the first paragraph is voided and replaced by the following.

Provide stationary and truck mixers capable of combining the ingredients of the concrete into a thoroughly mixed and uniform mass and capable of discharging the concrete so that the requirements of [Tex-472-A](#) are met.

Article 421.3.1.3., "Agitators and Truck and Stationary Mixers," is supplemented with the following.

Truck mixers with automated water and chemical admixture measurement and slump and slump flow monitoring equipment meeting the requirement of ASTM C94 will be allowed. Provide data every 6 mo. substantiating the accuracy of slump, slump flow, temperature, water, and chemical admixture measurements. The slump measured by the automated system must be within 1 in. of the slump measured in accordance with [Tex-415-A](#). The concrete temperature measured by the automated system must be within 1°F of concrete temperature measured in accordance with [Tex-422-A](#). The Engineer will not use the automated measurements for acceptance.

Article 421.4.2., "Mix Design Proportioning," Table 8 is voided and replaced by the following.

Table 8
Concrete Classes

| Class of Concrete | Design Strength, ¹ Min f'_c (psi) | Max w/cm Ratio | Coarse Aggregate Grades ^{2,3,4} | Cement Types | Mix Design Options | Exceptions to Mix Design Options | General Usage ⁵ |
|-------------------|---|----------------|--|-------------------------------------|--------------------|---|--|
| A | 3,000 | 0.60 | 1-4, 8 | I, II, I/II, IL, IP, IS, IT, V | 1, 2, 4, & 7 | When the cementitious material content does not exceed 520 lb./cu. yd., any coal ash or natural pozzolan listed in the MPL may be used at a cement replacement of 20% to 50%. | Curb, gutter, curb & gutter, conc. retards, sidewalks, driveways, back-up walls, anchors, non-reinforced drilled shafts |
| B | 2,000 | 0.60 | 2-7 | | | | Riprap, traffic signal controller foundations, small roadside signs, and anchors |
| C ⁶ | 3,600 | 0.45 | 1-6 | I, II, I/II, IP, IL, IS, IT, V | 1-8 | | Drilled shafts, bridge substructure, traffic rail, culverts except top slab of direct traffic culverts, headwalls, wing walls, inlets, manholes, traffic barrier |
| E | 3,000 | 0.50 | 2-5 | I, II, I/II, IL, IP, IS, IT, V | 1-8 | When the cementitious material content does not exceed 520 lb./cu. yd., any coal ash or natural pozzolan listed in the MPL may be used at a cement replacement of 20% to 50%. | Seal concrete |
| F ⁶ | Note ⁷ | 0.45 | 2-5 | I, II, I/II, IP, IL, IS, IT, V | | | Railroad structures; occasionally for bridge piers, columns, bents, post-tension members |
| H ⁶ | Note ⁷ | 0.45 | 3-6 | I, II, I/II, III, IP, IL, IS, IT, V | 1-4, 8 | <p>Mix design options 1-8 allowed for cast-in-place concrete and the following precast elements unless otherwise stated in the plans:</p> <ul style="list-style-type: none"> ■ Bridge Deck Panels, ■ Retaining Wall Systems, ■ Coping, ■ Sound Walls, ■ Wall Columns, ■ Traffic Rail, ■ Traffic Barrier, ■ Long/Arch Span Culverts, and ■ precast concrete products included in Item 462, "Concrete Box Culverts and Drains, Item 464, "Reinforced Concrete Pipe," and Item 465, "Junction Boxes, Manholes, and Inlets." <p>Do not use Type III cement in mass placement concrete. Up to 20% of blended cement may be replaced with listed SCMs when Option 4 is used for precast concrete. Options 6, & 7 allowed for cast-in-place Class H concrete.</p> | Precast concrete, post-tension members |
| S ⁶ | 4,000 | 0.45 | 2-5 | I, II, I/II, IP, IL, IS, IT, V | 1-8 | | Bridge slabs, top slabs of direct traffic culverts, approach slabs |

| Class of Concrete | Design Strength, ¹ Min f_c (psi) | Max w/cm Ratio | Coarse Aggregate Grades ^{2,3,4} | Cement Types | Mix Design Options | Exceptions to Mix Design Options | General Usage ⁵ |
|--------------------------------------|--|----------------|--|---|---------------------------------|--|---|
| P | See Item 360, "Concrete Pavement." | 0.50 | 2-3 | I, II, I/II, IL, IP, IS, IT, V | 1-8 | When the cementitious material content does not exceed 520 lb./cu. yd., any coal ash or natural pozzolan listed in the MPL's may be used at a cement replacement of 20% to 50%. | Concrete pavement |
| CO ⁶ | 4,600 | 0.40 | 6 | I, II, I/II, IP, IL, IS, IT, V | 1-8 | | Bridge deck concrete overlay |
| LMC ⁶ | 4,000 | 0.40 | 6-8 | | Latex-modified concrete overlay | | |
| SS ⁶ | 3,600 | 0.45 | 4-6 | I, II, I/II, IP, IL, IS, IT, V | 1-8 | Use a Min cementitious material content of 658 lb./cu. yd. of concrete. Limit the alkali loading to 4.0 lbs./cu. yd. or less when using Option 7. | Slurry displacement shafts, underwater drilled shafts |
| K ⁶ | Note ⁷ | 0.40 | Note ⁷ | I, II, I/II, III, IP, IL, IS, IT, V | 1-8 | | Note ⁷ |
| HES | Note ⁷ | 0.45 | Note ⁷ | I, IL, II, I/II, III | | Mix design options do not apply. 700 lb. of cementitious material per cubic yard limit does not apply. | Concrete pavement, concrete pavement repair |
| "X" (HPC) <small>6,8,9</small> | Note ¹⁰ | 0.45 | Note ¹⁰ | I, II, I/II, III, IP, IL, IS, IT, V | 1-4, & 8 | Max coal ash replacement for Option 3 may be increased to 50%. Up to 20% of a blended cement may be replaced with listed SCMs for Option 4. Do not use Option 8 for precast concrete. | |
| "X" (SRC) <small>6,8,9</small> | Note ¹⁰ | 0.45 | Note ¹⁰ | I/II, II, IP, IL (MS or HS), IS, IT (MS or HS), V | 1-4, & 7 | When using coal ash, only use coal ashes allowed for SRC as listed in the Coal Ash MPL. Type III-MS may be used where allowed. Type I, Type IL, and Type III cements may be used when natural pozzolans are used or when coal ashes allowed for SRC as listed in the Coal Ash MPL are used, and with a Max w/cm of 0.40. Up to 20% of blended cement may be replaced with listed SCMs when Option 4 is used for precast concrete. Use Option 7 for precast concrete where allowed. | |

- Design strength must be attained within 56 days.
- Do not use Grade 1 coarse aggregate except in massive foundations with 4 in. Min clear spacing between reinforcing steel bars, unless otherwise permitted. Do not use Grade 1 aggregate in drilled shafts.
- Use Grade 8 aggregate in extruded curbs unless otherwise approved.
- Other grades of coarse aggregate maybe used in non-structural concrete classes when allowed by the Engineer.
- For information only.
- Structural concrete classes.
- As shown on the plans or specified.
- "X" denotes class of concrete shown on the plans or specified.
- (HPC): High Performance Concrete, (SRC): Sulfate Resistant Concrete.
- Same as class of concrete shown on the plans.

Article 421.4.2.2., “Aggregates,” is supplemented by the following.

Use the following equation to determine if the aggregate combination meets the sand equivalency requirement when blending fine aggregate or using an intermediate aggregate:

$$\frac{(SE_1 \times P_1) + (SE_2 \times P_2) + (SE_{ia} \times P_{ia})}{100} \geq 80\%$$

where:

SE_1 = sand equivalency (%) of fine aggregate 1

SE_2 = sand equivalency (%) of fine aggregate 2

SE_{ia} = sand equivalency (%) of intermediate aggregate passing the 3/8 in. sieve

P_1 = percent by weight of fine aggregate 1 of the fine aggregate blend

P_2 = percent by weight of fine aggregate 2 of the fine aggregate blend

P_{ia} = percent by weight of intermediate aggregate passing the 3/8 in. sieve

Article 421.4.2.3., “Chemical Admixtures,” the second paragraph is voided and replaced with the following.

Use a 30% calcium nitrite solution when a corrosion-inhibiting admixture is required. Dose the admixture at the rate of gallons of admixture per cubic yard of concrete shown on the plans. Use set retarding admixtures, as needed, to control setting time to ensure concrete containing corrosion inhibiting admixtures remain workable for the entire duration of the concrete placement. Perform setting time testing and slump loss testing during trial batch testing.

Article 421.4.2.5., “Slump,” the second paragraph is voided and not replaced. Table 9 is voided and replaced with below:

Table 9
Placement Slump Requirements

| General Usage | Placement Slump Range, ^{1,2} in. |
|--|--|
| Walls (over 9 in. thick), caps, columns, piers | 3 – 7 |
| Bridge slabs, top slabs of direct traffic culverts, approach slabs, concrete overlays, latex-modified concrete for bridge deck overlays | 3 – 6 |
| Inlets, manholes, walls (less than 9 in. thick), bridge railing, culverts, concrete traffic barrier, concrete pavement (formed) | 4 – 6 |
| Precast concrete | 4 – 9 |
| Underwater concrete placements | 6 – 8-1/2 |
| Drilled shafts, slurry displaced and underwater drilled shafts | See Item 416, “Drilled Shaft Foundations.” |
| Curb, gutter, curb and gutter, concrete retards, sidewalk, driveways, seal concrete, anchors, riprap, small roadside sign foundations, concrete pavement repair, concrete repair | As approved |

1. Max slump values may be increase above these values shown using chemical admixtures, provided the admixture treated concrete has the same or lower water-to-cementitious ratio and does not exhibit segregation or excessive bleeding. Request approval to increase slump limits in advance for proper evaluation by the Engineer.
2. For fiber reinforced concrete, perform slump before addition of fibers.

Article 421.4.2.6., “Mix Design Options,” is voided and replaced with the following.

Option 1. Replace cement with at least the minimum dosage listed in the MPL for the coal ash or natural pozzolan used in the mixture. Do not replace more than 50% of the cement. Conduct Option 8 testing as listed on the MPL.

Option 2. Replace 35% to 50% of the cement with slag cement.

Option 3. Replace 35% to 50% of the cement with a combination of coal ash, slag cement, natural pozzolan, or at least 3% silica fume; however, no more than 10% may be silica fume.

Option 4. Use Type IP, Type IS, or Type IT cement as allowed in Table 8 for each class of concrete. When replacing blended cements with additional SCM's, the replacement limits in Option 3 will apply to the final cementitious mixture. When using coal

ash or natural pozzolans not having a minimum dosage listed in the MPL in the final cementitious mixture, perform Option 8 testing.

Option 5. Option 5 is left intentionally blank.

Option 6. Use a lithium nitrate admixture at a minimum dosage determined by testing conducted in accordance with [Tex-471-A](#). Before use of the mix, provide an annual certified test report signed and sealed by a licensed professional engineer, from a laboratory listed on the MPL, certified by the Materials and Tests Division as being capable of testing according to [Tex-471-A](#).

Option 7. Ensure the total alkali contribution from the cement in the concrete does not exceed 3.5 lb. per cubic yard of concrete when using hydraulic cement not containing SCMs calculated as follows:

$$\text{lb. alkali per cu. yd.} = \frac{(\text{lb. cement per cu. yd.}) \times (\% \text{ Na}_2\text{O equivalent in cement})}{100}$$

In the above calculation, use the maximum cement alkali content reported on the cement mill certificate.

Option 8. Use Table 10 when deviating from Options 1–3 or when required by the Coal Ash MPL. Perform required testing annually and submit results to the Engineer. Laboratories performing ASTM C1260, ASTM C1567, and ASTM C1293 testing must be listed on the MPL. Before use of the mix, provide a certified test report signed and sealed by a licensed professional engineer demonstrating the proposed mixture in accordance with the requirements of Table 10.

Provide a certified test report signed and sealed by a licensed professional engineer, when HPC is required, and less than 20% of the cement is replaced with SCMs, demonstrating ASTM C1876 test results indicate the uniaxial resistivity of the concrete is greater than 15.6 kΩ-cm tested immediately after either of the following curing schedules:

- Moisture cure specimens 56 days at 73°F.
- Moisture cure specimens 7 days at 73°F followed by 21 days at 100°F.

Table 10
Option 8 Testing and Mix Design Requirements

| Scenario | ASTM C1260 Result | | Testing Requirements for Mix Design Materials or Prescriptive Mix Design Options |
|----------|---------------------------|------------------------------------|--|
| | Mix Design Fine Aggregate | Mix Design Coarse Aggregate | |
| A | > 0.10% | > 0.10% | Determine the dosage of SCMs needed to limit the 14-day expansion of each aggregate ¹ to 0.10% when tested individually in accordance with ASTM C1567. |
| B | ≤ 0.10% | ≤ 0.10% | Use the Min replacement listed in the Coal Ash MPL, or when Option 8 is listed on the MPL, use a Min of 40% coal ash with a Max CaO ² content of 25%, or use any ternary combination which replaces 35% to 50% of cement. |
| | ≤ 0.10% | ASTM C1293 1 yr. Expansion ≤ 0.04% | Use a minimum of 20% of any coal ash; or Use any ternary combination which replaces 20% to 50% of cement. |
| C | ≤ 0.10% | > 0.10% | Determine the dosage of SCMs needed to limit the 14-day expansion of coarse and intermediate ¹ aggregate to ≤0.10% when tested individually in accordance with ASTM C1567. |
| D | > 0.10% | ≤ 0.10% | Use the Min replacement listed in the Coal Ash MPL, or when Option 8 is listed on the MPL, use a Min of 40% coal ash with a Max CaO ² content of 25%, or use any ternary combination which replaces 35% to 50% of cement. |
| | > 0.10% | ASTM C1293 1 yr. Expansion ≤ 0.04% | Determine the dosage of SCMs needed to limit the 14-day expansion of each fine aggregate to ≤0.10% when individually tested in accordance with ASTM C1567. |

1. Intermediate size aggregates will fall under the requirements of mix design coarse aggregate.
2. Average the CaO content from the previous ten values as listed on the test certificate.

Article 421.4.2.7., “Optimized Aggregate Gradation (OAG) Concrete,” the first sentence of the first paragraph is voided and replaced by the following.

The gradations requirements in Table 4 and Table 6 do not apply when OAG concrete is specified or used by the Contractor unless otherwise shown on the plans.

The fineness modulus for fine aggregate listed in Table 5, does not apply when OAG concrete is used,

Article 421.4.6.2., Delivering Concrete,” the third paragraph is supplemented by the following.

When truck mixers are equipped with automated water or chemical admixture measurement and slump or slump flow monitoring equipment, the addition of water or chemical admixtures during transit is allowed. Reports generated by this equipment must be submitted to the Engineer daily.

Article 421.4.6.2., “Delivering Concrete,” the fifth paragraph is voided and replaced with the following. Begin the discharge of concrete delivered in truck mixers within the times listed in Table 14. Concrete delivered after these times, and concrete that has not begun to discharge within these times will be rejected.

Article 421.4.8.3., “Testing of Fresh Concrete,” is voided and replaced with the following.

Testing Concrete. The Engineer, unless specified in other Items or shown on the plans, will test the fresh and hardened concrete in accordance with the following methods:

- Slump. [Tex-415-A](#);
- Air Content. [Tex-414-A](#) or [Tex-416-A](#);
- Temperature. [Tex-422-A](#);
- Making and Curing Strength Specimens. [Tex-447-A](#);
- Compressive Strength. [Tex-418-A](#);
- Flexural Strength. [Tex-448-A](#); and
- Maturity. [Tex-426-A](#).

Flexural strength and maturity specimens will not be made unless specified in other items or shown on the plans.

Concrete with slump less than minimum required after all addition of water withheld will be rejected, unless otherwise allowed by the Engineer. Concrete with slump exceeding maximum allowed may be used at the Contractor's option. If used, Engineer will make, test, and evaluate strength specimens as specified in Article 421.5., "Acceptance of Concrete." Acceptance of concrete not meeting air content or temperature requirements will be determined by Engineer. Fresh concrete exhibiting segregation and excessive bleeding will be rejected.

Article 421.4.8.3.1., "Job-Control Testing," is voided and not replaced.

Special Provision to Item 427

Surface Finishes for Concrete



Item 427, "Surface Finishes for 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 427.2.1 "Coatings," is supplemented with the following:

Epoxy Waterproofing. Provide Type X Epoxy per [DMS-6100](#) "Epoxies and Adhesives." Match color of coating with Federal Standard 595C color 35630, concrete gray, unless otherwise shown on the plans.

Article 427.4.2.2 "Application," is supplemented with the following:

Epoxy Waterproofing. Mix epoxy per manufacturer's instructions. Apply the coating on a dry surface at a maximum application rate of 100 sq. ft per gallon. Apply a thin uniform film of mixed epoxy to the substrate by the use of a short nap roller or brush. The epoxy may be sprayed following the thinning requirements of the manufacturer. No more than 15% reduction is permitted.

Match the color of the applied coating with the color standard shown on the plans. Apply when ambient temperature is between 50°F and 100°F.

Article 427.6 "Payment," the second paragraph is voided and replaced in its entirety with:

When a surface finish for concrete is specified as a pay item, 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 "Adhesive Grout Finish," "Concrete Paint Finish," "Opaque Sealer Finish," "Silicone Resin Paint Finish," "Epoxy Waterproof Finish," or "Blast Finish." This price is full compensation for materials; cleaning and preparing surfaces; application of materials; and equipment, labor, tools, and incidentals.

Special Provision to Item 434

Bridge Bearings



Item 434, "Bridge Bearings" 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 434.2.1., "Plain and Laminated Elastomeric Bearings," is voided and replaced with the following:

Manufacturers of plain and laminated elastomeric bearing pads must be approved in accordance with DMS-7365, "Qualification Procedure for Elastomeric Bridge Bearing Pad Manufacturers." The Materials and Tests Division (MTD) maintains a list of approved elastomeric bridge bearing pad manufacturers.

Manufacturers that produce laminated elastomeric bearings with a top steel plate or special components (steel guide bars and bottom plate) must comply with AASHTO's NTPEP Committee Work Plan for Evaluation of Plain and Laminated Elastomeric Bridge Bearing Manufacturers. DMS-7365 does not apply to manufacturers of bridge bearings where the laminated elastomeric bearing pad is a component of the completed bearing assembly.

Section 434.2.1.1., "Elastomer," is voided and replaced with the following:

Provide elastomer for bearings formulated from previously unvulcanized 100% virgin polychloroprene rubber polymers meeting the physical properties, heat resistance, and compression set requirements of AASHTO M 251, Table X1.1, unless otherwise shown on the plans. Do not provide bearings containing previously vulcanized synthetic rubber or other synthetic rubber-like polymers. Perform material tests on the finished product in accordance with the applicable test methods. Do not use standard laboratory test slabs for this purpose. Prepare test specimens from the finished product in accordance with ASTM D3183.

Obtain approval for each elastomer formulation before use on Department projects. Submit certified test results to MTD to prequalify and obtain approval of a particular formulation. Show actual test values obtained and the required values for the physical properties, heat resistance, and compression set of the elastomer when tested for compliance with the minimum requirements of AASHTO M 251, Table X1.1.

Forward samples (freight prepaid) to MTD, or their contracted testing laboratory when directed.

Submit only elastomer of the type or types to be supplied. Submit prequalification samples consisting of 2 finished bearing pads typical of the formulation and workmanship for Department projects. Submit 2 samples of each type when laminated and plain bearing pads are required. Laminated sample bearing pads may represent both plain bearing pads and laminated bearing pads for an elastomer formulation.

Plain sample bearing pads must measure 9 in. × 19 in. × 1 in. Laminated sample bearing pads must measure 9 in. × 14 in. × 1-1/2 in. with the following number of steel laminates:

- 50 durometer—3 steel laminates,
- 60 durometer—2 steel laminates, and
- 70 durometer—2 steel laminates.

Bond strength testing of laminated prequalification samples will be performed by the Department in accordance with [Tex-601-J](#), Part I—"Bond Strength Test Method 1". The tested sample must achieve a minimum bond strength of 40 lbf/in. of width.

Presence of chlorinated compounds (neoprene) in the elastomer will be verified by the Department in accordance with [Tex-601-J](#), Part III—Chlorinated Compound Test Method 3.

Costs associated with testing elastomer formulations failing to conform to the requirements of this Item are borne by the bearing manufacturer. This cost will be assessed at the rate established by MTD at the time of testing.

Certify that the submitted samples are of the same basic elastomer formulation and of equivalent cure as the finished products to be furnished on Department projects.

Complete prequalification testing will be performed for each formulation at least once every 2 yr. and when necessary.

Section 434.2.1.2., "Steel Laminates," is voided and replaced with the following:

Provide steel laminates, for laminated bearing pads, of commercial grade steel strip or sheet with a thickness of 0.105 ±0.015 in.

Section 434.2.2.1.2., "Laminated Elastomeric Bearing Pad and Steel Plate," the first paragraph is amended to include the following sentence:

Bearing manufacturers that produce the laminated elastomeric bearing pad component of a sliding elastomeric bearing must comply with AASHTO's NTPEP Committee Work Plan for Evaluation of Plain and Laminated Elastomeric Bridge Bearing Manufacturers.

Section 434.3.1., "Plain and Laminated Elastomeric Bearings," is voided and replaced with the following:

Electronically submit shop drawings for the complete assembly before fabrication of laminated elastomeric bearings with or without steel top plates or special components in accordance with the plans and Item 441, "Steel Structures." Provide a bearing layout with the shop drawings.

Mold together components of a laminated bearing pad to form an integral unit free of voids or separations in the elastomer or between the elastomer and the steel laminates or plates, unless otherwise shown on the plans. Provide well-vulcanized elastomer between the laminates or plates and on the outer surfaces of the bearing pad that is uniform and integral and resists separation by mechanical means into separate, definite, well-defined elastomeric layers. Evidence of this layered construction, either at the outer surfaces or within the bearing pad, will be cause for rejection. Repair of damaged elastomer on sides of laminated bearing pads is not allowed for product acceptance. Repair of damaged elastomer on top or bottom surfaces of laminated bearing pads is allowed when approved.

Cover edges of steel laminates with 1/8 in. to 1/4 in. of elastomer except exposure of the laminates will be permitted at approved laminate restraining devices and around holes entirely enclosed in the finished structure. Position laminates within 1/8 in. of plan location.

Plain bearing pads may be molded individually, cut from previously molded strips or slabs molded to the full thickness of the finished bearing pads, or extruded and cut to length. The finish of cut surfaces must be ANSI 250, or smoother. The finished bearing pads must have no voids or separations detectable either at the bearing surfaces or within the bearing pad. Plain elastomeric bearing pads must be well vulcanized, uniform, and integral units of such construction that the bearing pad is incapable of being separated by any mechanical means into separate, definite, well-defined elastomeric layers. Evidence of layered construction either at the outer surfaces or within the bearing pad will be cause for rejection.

The permissible variation from the dimensions and configuration shown on the plans for both plain and laminated bearing pads will be as listed in AASHTO M 251, Table 2. Flash tolerance, finish, and appearance must meet the requirements of the latest edition of the Rubber Handbook published by the US Tire Manufacturer's Association, RMA F3 and T.063 for molded bearings, and RMA F2 for extruded bearings.

Perform required welding in accordance with Item 441, "Steel Structures." Manufacture guide bars, when required, so adjacent top and bottom bar surfaces are parallel to within 1/16 in. in the assembled position. The tolerance for diameter of anchor bolt holes is +1/8 in., -0. The maximum deviation for flatness of steel plates is 1/16 in. in any 24 in. or as shown on the plans.

Section 434.3.1.1., "Marking," the first paragraph is voided and replaced with the following:

Mark the bearing type on the surface of each bearing as shown on the plans. The marking must remain legible until placement in the structure. Permanently mark, in addition, laminated bearings with:

- manufacturer's name or trademark,
- lot number, and
- date of manufacture (month-year).

Section 434.3.1.2., "Testing and Acceptance," is voided and replaced with the following:

Perform testing, inspection, and acceptance of plain and laminated elastomeric bearing pads in accordance with DMS-7365, "Qualification Procedure for Elastomeric Bridge Bearing Pad Manufacturers."

For laminated elastomeric bearings with a steel top plate or special components (steel guide bars and bottom plate), apply a compression load of 2,250 psi or a stress approved by the Engineer to each bearing. Provide calibrated equipment per ASTM E4 for this compression testing. Each bearing will be acceptable if there is no visible evidence of bond failure or other damage and if the finished bearing meets other pertinent portions of this Item. Samples may be taken if the quality of production becomes questionable.

Section 434.3.2.1., "Lower Component," is voided and replaced with the following:

Manufacture one additional bearing lower component per project for testing purposes. Notify MTD, which will sample a bearing lower component at random from the lot, after bearings have been manufactured for a project. Forward selected samples (freight prepaid) to MTD, or to their contracted testing laboratory when directed. Lower component samples will be tested to the following:

- [Tex-601-J](#), Part II—"Adhesion Test Method 2." Adhesion between the PTFE material and steel plate must meet a minimum 20 lb. per inch of width;
- [Tex-601-J](#), Part III—"Chlorinated Compound Test Method 3." Laminated bearing pad elastomer must contain chlorinated compounds (neoprene); and
- PTFE physical properties in accordance with Table 1, with the exception of Melting Point Testing (ASTM D4894).

Costs associated with testing sliding elastomeric bearing lower component project samples failing to conform to these requirements are borne by the bearings manufacturer. This cost will be assessed at the rate established by Construction Division at the time of testing.

Section 434.3.3.2., "Testing and Acceptance." The last paragraph is voided.

Special Provision to Item 440

Reinforcement for Concrete



Item 440, "Reinforcement for 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 440.2., "Materials," is supplemented with the following.

- 2.7. **Welded Deformed Bar Mat Reinforcement.** Provide welded deformed bar mats in accordance with ASTM A184 except as otherwise noted in this Specification. Fabricate welded bar mats from deformed steel bars in accordance with ASTM A706 by securely connecting every intersection with a process of electrical resistance welding that employs the principle of fusion combined with pressure. The bars must be assembled by automatic machines or by other suitable mechanical means that will assure accurate spacing and alignment of all bars of the finished product.
- 2.14. **Zinc-Coated, Hot-Dip Galvanized Class I or Class II Steel Reinforcement.** Provide zinc-coated, hot-dip galvanized Class I or Class II steel reinforcement in accordance with ASTM A767, Grade 60 or Grade 75, when shown on the plans and as allowed.
- 2.15. **Continuously Hot-Dip Galvanized Reinforcement (CGR).** Provide CGR in accordance with ASTM A1094 steel reinforcement, Grade 60 or Grade 75, when shown on the plans and as allowed.

Section 440.2.1., "Approved Mills." The second paragraph is voided and not replaced.

Section 440.2.5., "Weldable Reinforcing Steel," is supplemented with the following.

All welding operations must be performed before hot-dip galvanizing.

Section 440.2.8., "Mechanical Couplers," is voided and replaced with the following.

Use couplers of the type specified in [DMS-4510](#), "Mechanical Couplers for Reinforcing Steel," Section 4510.6.1., "General Requirements," when mechanical splices in reinforcing steel bars are shown on the plans.

Furnish only couplers pre-qualified in accordance with [DMS-4510](#), "Mechanical Couplers for Reinforcing Steel." Ensure sleeve-wedge type couplers are not used on coated reinforcing. Sample mechanical couplers in accordance with [Tex-743-I](#) for testing before use on individual projects. Test the mechanical couplers for every project in which mechanical couplers are used in accordance with [Tex-744-I](#). Furnish couplers only at locations shown on the plans.

Furnish couplers for stainless reinforcing steel with the same alloy designation as the reinforcing steel.

Provide hot-dip or mechanically galvanized couplers when splicing galvanized reinforcing or CGR.

Section 440.2.11., "Low Carbon/Chromium Reinforcing Steel." The first sentence is voided and replaced by the following.

Provide deformed steel bars in accordance with ASTM A1035, Grade 100, Type CS, when low-carbon, chromium-reinforcing steel is required on the plans. Type CM will be permitted only if specified on the plans.

Section 440.3.1., "Bending," is supplemented with the following.

Do not bend hot-dip galvanized reinforcement. Only minor positioning adjustments are permitted.

Bending of CGR is permitted after galvanizing.

Section 440.3.5., “Placing.” The following will be added to the fourth paragraph.

Use Class 1 or Class 1A supports with CGR. Provide epoxy- or plastic-coated tie wires and clips for use with epoxy-coated reinforcing steel.

Section 440.3.6.3., “Repairing Coating,” is supplemented with the following:

Repair damaged galvanized surfaces in accordance with Section 445.3.5.2., “Repair Processes.”

Special Provision to Item 441

Steel Structures



Item 441, "Steel Structures" 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 441.2.2., "Approved Electrodes and Flux-Electrode Combinations," is voided and replaced with the following:

Use only electrodes and flux-electrode combinations conforming to AWS A5 specifications, and pertinent classifications for the applicable welding processes. When requested, submit a current Certificate of Conformance (COC) containing all test results as required by the applicable AWS A5 specification and welding code. Provide proof of Buy America compliance for welding consumables when requested. For bridge main member fabrication, submit the COC annually.

Section 441.2.3., "High-Strength Bolts," is revised and replaced by the following:

Use fasteners that meet Item 447, "Structural Bolting." Use galvanized fasteners on field connections of bridge members when ASTM F3125-Grade A325 bolts are specified, and steel is painted.

Section 441.3.1.5.1., "Plants," The second and third paragraphs are voided and replaced with the following:

Fabrication plants that produce the following non-bridge steel members must be approved in accordance with DMS-7380, "Steel Non-Bridge Member Fabrication Plant Qualification."

- Item 610, "Roadway Illumination Poles"
- Item 613, "High Mast Illumination Poles"
- Item 614, "High Mast Rings and Support Assemblies"
- Item 650, "Overhead Sign Support Structures"
- Item 654, "Sign Walkways"
- Item 686, "Traffic Signal Poles"
- Special Specification 6064, "Intelligent Transportation System (ITS) Poles."

The Materials and Tests Division (MTD) maintains a list of approved non-bridge fabrication plants on the Department MPL that produce these members.

Section 441.3.1.6.1., "Erection Drawings," the third paragraph is voided and replaced with the following:

Perform erection engineering evaluation of the structural adequacy and stability of constructing the bridge system for each step of the steel erection.

Section 441.3.1.5.3., "Nondestructive Testing (NDT)," is voided and replaced with the following:

Personnel performing NDT must be qualified in accordance with the applicable AWS code and the employer's Written Practice. Level III personnel who qualifies Level I and Level II technicians must be certified by ASNT for which the NDT Level III is qualified. In addition, NDT technicians must pass hands-on tests that MTD administers. This will remain current provided they continue to perform testing on Department materials as evidenced by test reports requiring their signature. A technician who fails any of the hands-on tests must wait 3 mo. or as approved otherwise before retesting. Qualification to perform NDT will be revoked when the technician's employment is terminated or when the technician goes 6 mo. without performing a test on a Department project. The technician must pass a new hands-on test to be re-certified. Testing of similar weld joints for non-Department projects may be considered by the Engineer instead of re-testing provided enough documentation is submitted with the signature of the project's Engineer. These requirements also apply to testing agencies, and individual third-party contractors.

Section 441.3.1.5.4., “Welding Procedure Specification Qualification Testing,” is voided and replaced by the following:

For Fabricators qualified in accordance with DMS-7370, DMS-7380, or DMS-7395, laboratories performing procedure qualification testing for welding procedure specifications (WPSs) must be accredited by a nationally recognized agency that performs testing in accordance with ISO/International Electrotechnical Commission (IEC) 17025 in the mechanical field of testing.

Section 441.3.1.9., “Material Identification,” is amended to include the following paragraph:

Low-stress stencil marks must have a radius instead of a sharp point. Acceptable stencils include dot, vibration, and rounded-V stencils. Label these stencils so that they are easily distinguishable from other stencils that are not low-stress.

Section 441.3.2.4.1., “Flange Tilt,” the last sentence is voided and replaced with the following:

Minor jacking that does not deform the material will be permitted.

Section 441.3.2.5.3., “Magnetic Particle Testing,” is voided and replaced with the following:

Use alternating current (AC) when using the yoke method unless otherwise approved. Welds may be further evaluated with half-wave rectified DC for subsurface indications. Centerline cracking may be detected with aluminum prod method when approved.

Section 441.3.5.8., “Hammering,” is added to state the following:

Do not perform hammering on any portion of the member that causes the material to permanently deform. Avoid damage to the material by measures such as use of brass or aluminum hammers or by padding the area to be hammered.

Section 441.3.8.1., “Shop Painting,” is amended to include with the following paragraph:

Measure the anchor profile after blast cleaning at random locations along the thermal cut surfaces. If specified anchor profile is not achieved over the entire flame cut surface, grind the edges and re-blast to achieve the required anchor pattern.

Section 441.3.9., “Handling and Storage of Materials,” The second sentence of the second paragraph is replaced by the following:

Keep materials clean and avoid damaging of the applied coating.

Special Provision to Item 442

Metal for Structures



Item 442, "Metal for Structures" 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.

Section 442.2.1.3.3., "Fasteners." The first sentence of the first paragraph is replaced by the following:

Fasteners. Provide high-strength bolts that meet ASTM F3125-Grade A325 unless otherwise shown on the plans.

Section 442.2.1.3.3., "Fasteners." The third paragraph is deleted and not replaced.

Special Provision to Item 446

Field Cleaning and Painting Steel



For this project, Item 446, "Field Cleaning and Painting Steel," 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 446.4.1., "Qualification," the first and second paragraphs are voided and replaced by the following:

Submit to the Engineer documentation verifying SSPC QP 1 or NACE NIICAP AS-1 certification for work requiring the removal or application of coatings. Additionally, submit to the Engineer documentation verifying SSPC QP 2 Cat A or NACE NIICAP AS-2 certification when work requires removal of coatings containing hazardous materials. Maintain certifications throughout the project. No work may be performed without current and active certifications unless otherwise shown on the plans. The Engineer may waive certification requirements for minor, touch-up repair work and coating steel members repaired in accordance with Item 784, "Steel Member Repair."

The Engineer may waive certification requirements, when stated on the plans, for the purpose of qualification in either contractor certification program if the project has been accepted as a qualification project as part of the process for obtaining SSPC QP1 Cat A or NACE NIICAP AS-1 certification. Submit certification applications and proof of acceptance before beginning work or provide SSPC QP 7 certification when required on the plans.

Section 446.4.7.3.2., "Classes of Cleaning," is amended with the following:

Prepare all surfaces of painted steel members subsequently exposed from structural operations, such as deck removal or steel repair, in accordance with this Item. Prevent loose or damaged paint from entering the environment.

Special Provision to Item 447

Structural Bolting



Item 447, "Structural Bolting" 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 447.2.2., "Bolt Assemblies." The first paragraph is replaced by the following:

Bolt Assemblies. Provide ASTM F3125 bolts and nuts and washers meeting the type, grade, and finish requirements in Table 1, unless otherwise shown in the plans.

Article 447.2.2., "Bolt Assemblies." The second paragraph is replaced by the following:

Use Grade A325 or Grade A490 Type 3 plain (uncoated) bolts for weathering steel as indicated and Grade A325 Type 1 galvanized bolts for coated steel, unless otherwise shown on the plans.

Article 447.2.2., "Bolt Assemblies." Table 1 is replaced by the following:

Table 1
ASTM Type, Finish, and Grade for Structural Bolts, Nuts, and Washers

| | Bolt ¹ Grade | Bolt Type | Bolt Finish | ASTM A563 Nut Grade and Finish | ASTM F436 Washer Type and Finish |
|------------------------------------|-------------------------|-----------|-------------|--|----------------------------------|
| Heavy-Hex Bolts ¹ | A325 | 1 | Galvanized | DH, ² galvanized and lubricated | 1; galvanized |
| | A325 | 3 | Plain | C3 and DH3; plain | 3; plain |
| | A490 | 3 | Plain | DH3; plain | 3; plain |
| Tension-Control Bolts ¹ | F1852 | 1 | Galvanized | DH, ² galvanized and lubricated | 1; galvanized |
| | F1852 | 3 | Plain | C3 and DH3; plain | 3; plain |
| | F2280 | 3 | Plain | DH3; plain | 3; plain |

1. ASTM F3125 High Strength Structural Bolts
2. ASTM A194 Heavy Hex Grade 2H nuts may be substituted.

Article 447.2.6., "Fitup Bolts and Erection Pins." The first paragraph is replaced by the following:

Fitup Bolts and Erection Pins. Provide heavy-hex fitup bolts of the same diameter as the connection bolts. Do not use washer-type indicating devices for fitups. Do not reuse galvanized bolts or Grade A490 bolts that have been used as fitup bolts. Provide a sufficient number of erection or drift pins, 1/32 in. larger than the bolt diameter.

Article 447.4.3., "General." The second sentence of the third paragraph is replaced by the following:

Install hardened washers under both the nut and bolt head of Grade A490 bolts when the outer plies being fastened have a yield strength less than 40 ksi.

Article 447.4.3., “General.” Table 2 is replaced by the following:

**Table 2
Bolt Tension**

| Nominal Bolt Size, in. | Minimum Tension (kips) | |
|------------------------|------------------------|------------------|
| | Grade A325 Bolts | Grade A490 Bolts |
| ½ | 12 | 15 |
| 5/8 | 19 | 24 |
| ¾ | 28 | 35 |
| 7/8 | 39 | 49 |
| 1 | 51 | 64 |
| 1-1/8 | 56 | 80 |
| 1-1/4 | 71 | 102 |
| 1-3/8 | 85 | 121 |
| 1-1/2 | 103 | 148 |

Article 447.4.5.2., “Install Bolts.” The second paragraph is replaced by the following:

Fully tighten a minimum number of bolts as directed until the plies are in full contact if snugging does not bring the plies of the joint into full contact. Mark these bolts as fitup bolts. Use a non-galvanized Grade A325 bolt of the same diameter as a fitup bolt in connections requiring the use of galvanized Grade A325 bolts. Re-slug all remaining bolts.

Article 447.4.5.3., “Tension Bolts.” The first paragraph is replaced by the following:

Tension Bolts. Loosen all fitup bolts after tensioning all the other bolts in the connection. Ungalvanized Grade A325 bolts used as fitup bolts may be reused in a connection using this type of bolt. Replace all galvanized bolts and Grade A490 bolts used as fitup bolts. Tension these remaining untensioned bolts in accordance with this paragraph. Ensure the element not turned by the wrench (bolt head or nut) does not rotate.

Article 447.4.5.4., “Bolt Reuse.” The first paragraph is replaced by the following:

Bolt Reuse. Do not reuse Grade A490 or galvanized Grade A325 bolts. Ungalvanized Grade A325 bolts may be reused one time if the threads have not been damaged. Re-tensioning previously tensioned bolts loosened by the tensioning of adjacent bolts is not considered to be reuse.

Special Provision to Item 448

Structural Field Welding



Item 448, "Structural Field Welding" 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 448.2., "Materials," the third paragraph is voided and replaced with the following:

Use only electrodes and flux-electrode combinations conforming to AWS A5 specifications and pertinent classifications for the applicable welding processes. When requested, submit a current Certificate of Conformance (COC) containing acceptable wording indicating Buy America compliance and all tests required by the applicable AWS specifications and welding codes. Tests must be conducted on electrodes of the same class, size, and brand; and manufactured by the same process and with the same materials as the electrodes to be furnished.

Special Provision to Item 449

Anchor Bolts



Item 449, "Anchor Bolts" 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.

Section 449.2.1., "Bolts and Nuts." Table 1 is replaced by the following:

Table 1
Bolt and Nut Standards

| Specified Anchor Bolt Category | Bolt Standards | Nut Standards |
|--------------------------------|---|--|
| Mild steel | ASTM A307 Gr. A, F1554 Gr. 36, or A36 | ASTM A563 |
| Medium-strength, mild steel | ASTM F1554 Gr. 55 with supplementary requirement S1 | ASTM A194 Gr. 2 or A563 Gr. D or better |
| High-strength steel | ASTM F3125-Grade A325 or ASTM A449 ¹ | ASTM A194 or A563, heavy hex |
| Alloy steel | ASTM A193 Gr. B7 or F1554 Gr. 105 | ASTM A194 Gr. 2H or A563 Gr. DH, heavy hex |

1. If headed bolts are specified, ASTM A449 bolts must be heavy hex head.

Section 449.3.3.1,"Anchor Bolt Thread Lubricant Coating," The first sentence of the first paragraph is voided and replaced by the following.

Coat anchor bolt threads before installing nuts with an electrically conducting lubricant compound described in Section 449.3.3.2.1., "Definitions," for traffic signal poles, roadway illumination poles, high mast illumination poles, intelligent transportation system poles, overhead sign support structures, and steel electrical service supports.

Section 449.3.3.2,"Anchor Bolt Tightening Procedure," The first sentence of the first paragraph is voided and replaced by the following.

Tighten anchor bolts for traffic signal poles, shoe base and concrete traffic barrier base roadway illumination poles, high mast illumination poles, intelligent transportation system poles, and overhead sign support structures in accordance with this Section.

Special Provision to Item 502

Barricades, Signs and Traffic Handling



Item 502, "Barricades, Signs and Traffic Handling" 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 502.1., "Description," is supplemented by the following:

Temporary work-zone (TWZ) traffic control devices manufactured after December 31, 2019, must have been successfully tested to the crashworthiness requirements of the 2016 edition of the Manual for Assessing Safety Hardware (MASH). Such devices manufactured on or before this date and successfully tested to NCHRP Report 350 or the 2009 edition of MASH may continue to be used throughout their normal service lives. An exception to the manufacture date applies when, based on the project's date of letting, a category of MASH-2016 compliant TWZ traffic control devices are not approved, or are not self-certified after the December 31, 2019, date. In such case, devices that meet NCHRP-350 or MASH-2009 may be used regardless of the manufacture date.

Such TWZ traffic control devices include: portable sign supports, barricades, portable traffic barriers designated exclusively for use in temporary work zones, crash cushions designated exclusively for use in temporary work zones, longitudinal channelizers, truck and trailer mounted attenuators. Category I Devices (i.e., lightweight devices) such as cones, tubular markers and drums without lights or signs attached however, may be self-certified by the vendor or provider, with documentation provided to Department or as are shown on Department's Compliant Work Zone Traffic Control Device List.

Article 502.4., "Payment," is supplemented by the following:

Truck mounted attenuators and trailer attenuators will be paid for under Special Specification, "Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA)." Portable Changeable Message Signs will be paid for under Special Specification, "Portable Changeable Message Sign." Portable Traffic Signals will be paid for under Special Specification, "Portable Traffic Signals."

Special Provision to Item 506

Temporary Erosion, Sedimentation, and Environmental Controls



For this project, Item 506, "Temporary Erosion, Sedimentation, and Environmental Controls," 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 506.1., "Description," is voided and replaced by the following:

Install, maintain, and remove erosion, sedimentation, and environmental control measures to prevent or reduce the discharge of pollutants in accordance with the Storm Water Pollution Prevention Plan (SWP3) or as directed. Ensure the installation and maintenance of control measures is performed in accordance with the manufacturer's or designer's specifications. Erosion and sediment control devices must be selected from the "Erosion Control Approved Products" or "Sediment Control Approved Products" lists. Perform work in a manner to prevent degradation of receiving waters, facilitate project construction, and comply with applicable federal, state, and local regulations.

Article 506.3., "Qualifications, Training, and Employee Requirements," is voided and not replaced.

Section 506.4.1., "Contractor Responsibilities," Section 506.4.2., "Implementation," and Section 506.4.3., "General," are voided and replaced by the following:

4.1. **Contractor Responsibilities.** Implement the SWP3 for the project site in accordance with the plans and specifications, and as directed. Coordinate storm water management with all other work on the project. Develop and implement an SWP3 for project-specific material supply plants within and outside of the Department's right of way in accordance with the specific or general storm water permit requirements. Prevent water pollution from storm water associated with construction activity from entering any surface water or private property on or adjacent to the project site.

4.2. **Implementation.**

4.2.1. **Commencement.** Implement the SWP3 as shown and as directed. Contractor proposed recommendations for changes will be allowed as approved. Do not implement changes until approval has been received and changes have been incorporated into the plans by the Engineer. Minor adjustments to meet field conditions are allowed and will be recorded by the Engineer in the SWP3.

Implement control measures before the commencement of activities that result in soil disturbance. Phase and minimize the soil disturbance to the areas shown on the plans. Coordinate temporary control measures with permanent control measures and all other work activities on the project to assure economical, effective, safe, continuous water pollution prevention. Provide control measures that are appropriate to the construction means, methods, and sequencing allowed by the Contract.

Do not prolong final grading and shaping. Preserve vegetation where possible throughout the project and minimize clearing, grubbing, and excavation within stream banks, bed, and approach sections.

4.3. **General.**

4.3.1. **Temporary Alterations or Control Measure Removal.** Altering or removal of control measures is allowed when control measures are restored within the same working day.

- 4.3.2. **Stabilization.** Initiate stabilization for disturbed areas no more than 14 days after the construction activities in that portion of the site has temporarily or permanently ceased. Establish a uniform vegetative cover or use another stabilization practice as approved.
- 4.3.3. **Finished Work.** Upon the Engineer's acceptance of vegetative cover or other stabilization practice, remove and dispose of all temporary control measures unless otherwise directed. Complete soil disturbing activities and establish a uniform perennial vegetative cover. A project will not be considered for acceptance until a vegetative cover of 70% density of existing adjacent undisturbed areas is obtained or equivalent permanent stabilization is obtained as approved.
- 4.3.4. **Restricted Activities and Required Precautions.** Do not discharge onto the ground or surface waters any pollutants such as chemicals, raw sewage, fuels, lubricants, coolants, hydraulic fluids, bitumens, or any other petroleum product. Operate and maintain equipment on site in a manner as to prevent actual or potential water pollution. Manage, control, and dispose of litter on site such that no adverse impacts to water quality occur. Prevent dust from creating a potential or actual unsafe condition, public nuisance, or condition endangering the value, utility, or appearance of any property. Wash out concrete trucks only in approved contained areas. Use appropriate controls to minimize the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water (i.e. dewatering). Prevent discharges that would contribute to a violation of Edwards Aquifer Rules, water quality standards, the impairment of a listed water body, or other state or federal law.

Section 506.4.4., "Installation, Maintenance, and Removal Work." The first paragraph is voided and replaced by the following.

Perform work in accordance with the SWP3, and according to the manufacturers' guidelines. Install and maintain the integrity of temporary erosion and sedimentation control devices to accumulate silt and debris until soil disturbing activities are completed and permanent erosion control features are in place or the disturbed area has been adequately stabilized as determined by the Engineer.

Section 506.4.5., "Monitoring and Documentation," is voided and not replaced.

Section 506.6.5.2., "Maintenance Earthwork for Erosion and Sediment Control for Cleaning and/or Restoring Control Measures," is voided and replaced by the following:

Earthwork needed to remove and obliterate of erosion-control features will not be paid for directly but is subsidiary to pertinent Items unless otherwise shown on the plans.

Sprinkling and rolling required by this Item will not be paid for directly but will be subsidiary to this Item.

Special Provision to Item 636

Signs



Item 636, "Signs" 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 636.3.1, "Fabrication." is deleted.

Section 636.3.1.2, "Sheeting Application." The last sentence of the fourth paragraph is voided and replaced by the following.

Do not splice sheeting or overlay films for signs fabricated with ink or with colored transparent films.

Special Provision to Item 643

Sign Identification Decals



Item 643, "Sign Identification Decals," 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. "Materials." The sign identification decal design shown in Figure 1 and the description for each row in Table 1 are supplemented by the following.

| Texas Department of Transportation | | | | | | | | | | | | | |
|---|-------------------------|---|-----|---|-----|---|-----|---|-----|---|---|----------|----|
| C | Fabrication Date | | | | | | | | | | | T | 1 |
| J | F | M | A | M | J | J | A | S | O | N | D | | 2 |
| | 201 | | 202 | | 203 | | 204 | | 205 | | | | 3 |
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | 4 |
| Sheeting MFR - Substrate | | | | | | | | | | | | | |
| A | B | C | D | E | F | G | H | J | K | L | M | | 5 |
| Film MFR | | | | | | | | | | | | | |
| A | B | C | D | E | F | G | H | J | K | L | M | | 6 |
| Sheeting MFR - Legend | | | | | | | | | | | | | |
| A | B | C | D | E | F | G | H | J | K | L | M | | 7 |
| Installation Date | | | | | | | | | | | | | |
| | | | | 0 | 1 | 2 | 3 | | | | | | 8 |
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | 9 |
| J | F | M | A | M | J | J | A | S | O | N | D | | 10 |
| | 201 | | 202 | | 203 | | 204 | | 205 | | | | 11 |
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | 12 |
| Name of Sign Fabricator Physical Address City, State, Zip Code | | | | | | | | | | | | | 13 |

Figure 1
Decal Design (Row numbers explained in Table 1)

Table 1
Decal Description
Row Explanation

| |
|--|
| 1 – Sign fabricator |
| 2 – Month fabricated |
| 3 – First 3 digits of year fabricated |
| 4 – Last digit of year fabricated |
| 5 – Manufacturer of the sheeting applied to the substrate |
| 6 – Film (colored transparent or non-reflective black) manufacturer |
| 7 – Manufacturer of the sheeting for the legend |
| 8 – Tens digit of date installed |
| 9 – Ones digit of date installed |
| 10 – Month installed |
| 11 – First 3 digits of year installed |
| 12 – Last digit of year installed |
| 13 – Name of sign fabricator and physical location of sign shop |

Special Provision to Item 656

Foundations for Traffic Control Devices



Item 656, "Foundations for Traffic Control Devices" 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. "Construction," the first paragraph is supplemented by the following:

Ensure the top of the foundation and anchor bolts meet specified requirements in relation to the final grade.

Special Provision to Item 666

Retroreflectorized Pavement Markings



Item 666, "Retroreflectorized Pavement Markings," 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 2.3., "Glass Traffic Beads." The first paragraph is voided and replaced by the following:

Furnish drop-on glass beads in accordance with DMS-8290, "Glass Traffic Beads," or as approved. Furnish a double-drop of Type II and Type III drop-on glass beads for longitudinal pavement markings where each type bead is applied separately in equal portions (by weight), unless otherwise approved. Apply the Type III beads before applying the Type II beads. Furnish Type II beads for work zone pavement markings and transverse markings or symbols.

Section 4.3.1., "Type I Markings.," is supplemented by the following:

4.3.1.3. Spot Striping. Perform spot striping on a callout basis with a minimum callout quantity as shown on the plans.

Section 4.3.2., "Type II Markings.," is supplemented by the following:

4.3.2.1. Spot Striping. Perform spot striping on a callout basis with a minimum callout quantity as shown on the plans.

Section 4.4., "Retroreflectivity Requirements.," is voided and replaced by the following.

Type I markings for Contracts totaling more than 20,000 ft. of pavement markings must meet the following minimum retroreflectivity values for all longitudinal edgeline, centerline or no passing barrier-line, and lane line markings when measured any time after 3 days, but not later than 10 days after application.

- White markings: 250 millicandelas per square meter per lux (mcd/m²/lx)
- Yellow markings: 175 mcd/m²/lx

Retroreflectivity requirements for Type I markings are not required for Contracts with less than 20,000 ft. of pavement markings or Contracts with callout work, unless otherwise shown on the plans.

Section 4.5., "Retroreflectivity Measurements.," is voided and replaced by the following:

Use a mobile retroreflectometer to measure retroreflectivity for Contracts totaling more than 50,000 ft. of pavement markings, unless otherwise shown on the plans. For Contracts with less than 50,000 ft. of pavement markings, mobile or portable retroreflectometers may be used at the Contractor's discretion. Coordinate with and obtain authorization from the Engineer before starting any retroreflectivity data collection.

Section 4.5.1., "Mobile Retroreflectometer Measurements." The last paragraph is voided and replaced by the following.

Restripe again at the Contractor's expense with a minimum of 0.060 in. (60 mils) of Type I marking material if the average of these measurements falls below the minimum retroreflectivity requirements. Take measurements every 0.1 miles a minimum of 10 days after this third application within that mile segment for that series of markings. If the markings do not meet minimum retroreflectivity after this third application, the Engineer may require removal of all existing markings, a new application as initially specified, and a repeat of the application process until minimum retroreflectivity requirements are met.

Section 4.5.2., "Portable Retroreflector Measurements." The first and second paragraphs are voided and replaced by the following.

Provide portable measurement averages for every 1.0 mile unless otherwise specified or approved. Take a minimum of 20 measurements for each 1-mi. section of roadway for each series of markings (e.g., edgeline, center skip line, each line of a double line) and direction of traffic flow when using a portable reflectometer. Measure each line in both directions for centerlines on two-way roadways (i.e., measure both double solid lines in both directions and measure all center skip lines in both directions). The spacing between each measurement must be at least 100 ft. The Engineer may decrease the mileage frequency for measurements if the previous measurements provide satisfactory results. The Engineer may require the original number of measurements if concerns arise.

Restripe at the Contractor's expense with a minimum of 0.060 in. (60 mils) of Type I marking material if the averages of these measurements fail. Take a minimum of 10 more measurements after 10 days of this second application within that mile segment for that series of markings. Restripe again at the Contractor's expense with a minimum of 0.060 in. (60 mils) of Type I marking material if the average of these measurements falls below the minimum retroreflectivity requirements. If the markings do not meet minimum retroreflectivity after this third application, the Engineer may require removal of all existing markings, a new application as initially specified, and a repeat of the application process until minimum retroreflectivity requirements are met.

Section 4.6. "Performance Period." The first sentence is voided and replaced by the following:

All longitudinal markings must meet the minimum retroreflectivity requirements within the time frame specified. All markings must meet all other performance requirements of this specification for at least 30 calendar days after installation.

Article 6. "Payment." The first two paragraphs are voided and replaced by the following.

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 "Pavement Sealer" of the size specified; "Retroreflectorized Pavement Markings" of the type and color specified and the shape, width, size, and thickness (Type I markings only) specified, as applicable; "Retroreflectorized Pavement Markings with Retroreflective Requirements" of the types, colors, sizes, widths, and thicknesses specified; "Retroreflectorized Profile Pavement Markings" of the various types, colors, shapes, sizes, and widths specified; or "Reflecterized Pavement Marking (Call Out)" of the shape, width, size, and thickness (Type I markings only) specified, as applicable; or "Pavement Sealer (Call Out)" of the size specified.

This price is full compensation for materials, application of pavement markings, equipment, labor, tools, and incidentals.

Special Provision to Special Specification 3096

Asphalts, Oils, and Emulsions



Special Specification 3096, "Asphalts, Oils, and Emulsions," is amended with respect to the clause cited below. No other clause or requirements of this Item are waived or changed.

Section 3096.2.2., Table 3 Polymer-Modified Asphalt Cement has been voided and replaced by the following:

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*/sin δ, 82°C, 10 rad/s, kPa | T 315 | - | - | 1.0 | - | - | - | - | - | - | - | - | - |
| Dynamic shear, G*/sin δ, 64°C, 10 rad/s, kPa | T 315 | - | - | - | - | - | - | 1.0 | - | - | - | 1.0 | - |
| Dynamic shear, G*/sin δ, 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 | - | - | - | - | - | 8.0 | - | - | - | 8.0 | - | 10.0 |
| 275°F, Pa-s | T 316 | - | - | - | 4.0 | - | - | - | - | - | - | - | - |
| Penetration, 77°F, 100 g, 5 sec. | T 49 | 110 | 150 | - | 25 | 100 | 150 | 75 | 115 | 95 | 130 | 75 | 115 |
| Elastic recovery, 50°F, % | Tex-539-C | 55 | | | | 55 | - | 55 | - | 30 | - | 55 | - |
| Polymer separation | 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 | T 313 | | | | | | | | | | | | |
| S, -18°C, MPa | | - | 300 | - | - | - | 300 | - | 300 | - | 300 | - | 300 |
| m-value, -18°C | | 0.300 | - | - | - | 0.300 | - | 0.300 | - | 0.300 | - | 0.300 | - |

1. This is a hot-applied TRAIL product.

Section 3096.2.5., Diluted Emulsions tables has been added.

Diluted Emulsions. Provide emulsified asphalt that is homogeneous, does not separate after thorough mixing, and meets the requirements for the specified type and grade in Tables 12A, and 12B, where the suffixes 50/50, 40/60, and 30/70 mean 50% emulsion diluted with 50% water; 40% emulsion diluted with 60% water, and 30% emulsion diluted with 70% water, respectively. For example, CSS-1H 40/60 means 40% CSS-1H diluted with 60% water and AE-P 30/70 means 30% AE-P diluted with 70% water.

Table 12A
Diluted CSS-1H

| Property | Test Procedure | Type-Grade | | | | | |
|--|----------------|----------------------|-----|--------------|-----|--------------|-----|
| | | Diluted Slow-Setting | | | | | |
| | | CSS-1H 50/50 | | CSS-1H 40/60 | | CSS-1H 30/70 | |
| | | Min | Max | Min | Max | Min | Max |
| Viscosity, Saybolt Furol 77°F, sec. | T 72 | Report Only | | Report Only | | Report Only | |
| Distillation test: Residue by distillation, % by wt. Oil distillate, % by volume of emulsion | T 59 | 30 | – | 24 | – | 18 | – |
| | | – | 0.5 | – | 0.5 | – | 0.5 |
| Tests on residue from distillation: | | | | | | | |
| Penetration, 77°F, 100 g, 5 sec. | T 49 | 40 | 110 | 40 | 110 | 40 | 110 |
| Solubility, % | T 44 | 97.5 | – | 97.5 | – | 97.5 | – |
| Ductility, 77°F, 5 cm/min., cm | T 51 | 80 | – | 80 | – | 80 | – |

Table 12B
Diluted AE-P

| Property | Test Procedure | Type-Grade | | | | | |
|--|----------------|----------------------|-----|-------------|-----|-------------|-----|
| | | Diluted Slow-Setting | | | | | |
| | | AE-P 50/50 | | AE-P 40/60 | | AE-P 30/70 | |
| | | Min | Max | Min | Min | Max | Min |
| Viscosity, Saybolt Furol 122°F, sec. | T 72 | Report Only | | Report Only | | Report Only | |
| 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 | 20 | – | 16 | – | 12 | – |
| | | 12.5 | 20 | 10.0 | 16 | 7.5 | 12 |
| Tests on residue after all distillations: | | | | | | | |
| Solubility, % | T 44 | 97.5 | – | 97.5 | – | 97.5 | – |
| Float test, 122°F, sec. | T 50 | 50 | 200 | 50 | 200 | 50 | 200 |

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 | T 240 T 202 | – | 180 | – | 450 | – | 900 | – | 1,500 | – | 3,000 |
| Ductility, ¹ 77°F 5 cm/min., cm | 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 Floot 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 | – |
| Test on residue from distillation: Penetration, 77°F, 100 g, 5 sec. Solubility in trichloroethylene, % Softening point, °F Dynamic shear, G*/sin(δ), 82°C, 10 rad/s, kPa | T 49 T 44 T 53 T 315 | – 97.5 150 1.0 | 20 – – – | 15 97.5 – – | 45 – – – | 40 97.5 – – | 90 – – – |

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., % Penetration @ 77°F, 100 g, 5 sec., 0.1 mm | Tex-539-C T 49 | 60 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 | – |
| Test on residue from distillation: Penetration @ 77°F, dmm | T 49 | 55 | 95 | 120 | – |
| Test on rejuvenating agent: BWOA, % ² Viscosity @ 140°F, cSt Flash Point, COC, °F Solubility in n-pentane, % by wt. | *** T 201 T 48 D2007 | – – – – | – – – – | 2 50 380 99 | – 175 – – |

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 | – |

1. Exception to T 59: Use 0.02 N CaCl₂ solution in place of water.
2. 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 4002

Elastomeric Bearing Pads



1. DESCRIPTION

Replace elastomeric bridge bearings.

2. MATERIALS

Furnish elastomeric bearings meeting the requirements of Item 434, "Bridge Bearings." Fabricate new bearings to the indicated dimensions.

3. CONSTRUCTION

Raise spans as necessary to replace the indicated bearings in conformance with Item 495, "Raising Existing Structures." Individual girders may be raised if approved and if no damage occurs to the slab or adjacent girders.

Remove indicated bearings. Do not use flame-cutting techniques to remove bearing pads.

Clean existing bearing seats and the bearing contact area on the bottoms of concrete girders by steam cleaning to remove all wax residue and other deleterious materials. After steam cleaning, use abrasive blasting to roughen the bearing contact surfaces on the bearing seats and the bottoms of concrete girders. Use oil-free compressed air for final cleaning to remove all loose material from bearing contact areas.

Repair spalls at bearing areas as indicated in accordance with Item 429, "Concrete Structure Repair." Restore or reconstruct damaged bearing seats as necessary to ensure they meet the requirements of Section 420.4.9, "Treatment and Finishing of Horizontal Surfaces."

If indicated, construct pedestals in accordance with the pertinent Items and the details shown on the plans.

Place new bearing pads after all bearing seat or spall repair materials have attained a compressive strength of 3,000 psi. Do not use dry cement powder under the new bearings.

Completely remove all hardware or appurtenances used to raise the spans or girders. Repair any damage resulting from the lifting operation at no expense to the Department.

4. MEASUREMENT

This Item will be measured by each bearing replaced.

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 "Replacing Elastomeric Bearing Pads." This price is full compensation for raising the spans or girders, removing the original bearing pads, cleaning and restoring the bearing contact areas, furnishing and installing new bearing pads, equipment, labor, shoring, falsework, tools, and incidentals. The work performed to raise the spans or girders in accordance with Item 495, "Raising Existing Structures," will not be paid for directly but is considered subsidiary to this Item. Concrete spall repairs will be measured and paid for in accordance with Item 429, "Concrete Structure Repair."

Pedestals will be paid for in accordance with Item 420, "Concrete Substructures," or Item 442, "Metal for Structures," as indicated.

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.

Special Specification 6438

Mobile Retroreflectivity Data Collection for Pavement Markings



1. DESCRIPTION

Furnish mobile retroreflectivity data collection (MRDC) for pavement markings on roadways as shown on the plans or as designated by the Engineer. Conduct MRDC on dry pavement only. Provider is defined as the Contractor or Subcontractor who collects the MRDC data.

2. EQUIPMENT AND PERSONNEL

- 2.1. **Mobile Retroreflectometer.** Provide a self-propelled, mobile retroreflectometer certified by the Texas A&M Transportation Institute (TTI) Mobile Retroreflectometer Certification Program.
- 2.2. **Portable Retroreflectometer.** Provide a portable retroreflectometer that uses 30-meter geometry meeting the requirements described in ASTM E 1710. Maintain, service, and calibrate all portable retroreflectometers according to the manufacturer's instructions.
- 2.3. **Operating Personnel for Mobile Retroreflectometer.** Provide all personnel required to operate the mobile retroreflectometer and portable retroreflectometer. Ensure MRDC system operator has a current certification from the TTI Mobile Retroreflectometer Certification Program to conduct MRDC with the certified mobile retroreflectometer provided.
- 2.4. **Additional Personnel.** Provide any other personnel necessary to compile, evaluate, and submit MRDC.
- 2.5. **Safety Equipment.** Supply and operate all required safety equipment to perform this service.

3. MRDC DOCUMENTATION AND TESTING

Document all MRDC by county and roadway or as directed by the Engineer. Submit all data to the Department and to the TTI Mobile Retroreflectometer Certification Program no later than three working days after the day the data is collected. Submit all raw data collected in addition to all other data submitted. Provide data files in Microsoft Excel format or a format approved by the Engineer. Provide measurement notification and field tests as specified. Verification and referee testing may be conducted at the Department's discretion.

- 3.1. **Preliminary Documentation Sample.** Submit a sample data file, video, and map of MRDC data in the required format 10 working days before beginning any work. The format must meet specification and be approved by the Engineer before any work may begin.
- 3.2. **Initial Documentation Review and Approval.** The Department will review documentation submitted for the first day of MRDC, and if it does not meet specification requirements, will not allow further MRDC until deficiencies are corrected. The Department will inform the Provider no later than three working days after submittal if the first day of MRDC does not meet specification requirements. Time charges will continue unless otherwise directed by the Engineer.
- 3.3. **Data File.** Provide data files with the following:
 - date;
 - district number;

- county;
- Project CSJ number;
- name of mobile retroreflector operator;
- route number with reference markers or other reference information provided by the Engineer to indicate the location of beginning and end data collection points on that roadway;
- cardinal direction;
- line type (single solid, single broken, double solid, etc.);
- line color;
- file name corresponding to video;
- data for each centerline listed separately;
- average reading taken for each 0.1-mi. interval (or interval designated by the Engineer);
- accurate GPS coordinates (within 20 ft.) for each interval;
- color-coding for each interval indicating passing or failing, unless otherwise directed by the Engineer (passing and failing thresholds provided by the Engineer);
- graphical representation of the MRDC (y-axis showing retroreflectivity and x-axis showing intervals) corresponding with each data file;
- distance in miles driven while measuring the pavement markings;
- event codes (pre-approved by the Engineer) indicating problems with measurement;
- portable retroreflector field check average reading and corresponding mobile average reading for that interval when applicable; and
- upper validation threshold (may be included separately with the raw data but must be clearly identified with the data collected using that threshold).

3.4. **Map.** Provide a map in an electronic format approved by the Engineer with each MRDC submission that includes the following information:

- date;
- district number;
- county;
- color-coded 1-mi. intervals (or interval length designated by the Engineer) for passing and failing retroreflectivity values or retroreflectivity threshold values provided by the Engineer; and
- percentage of passing and failing intervals, if required by the Engineer.

3.5. **Video.** Provide a high-quality DVD or electronic video file with the following information:

- date and corresponding data file name on label;
- district number;
- county;
- route number with reference markers or other designated reference information to indicate the location of beginning and end collection points on that roadway; and
- retroreflectivity values presented on the same screen with the following information:
 - date;
 - location;
 - starting and ending mileage;
 - total miles;
 - retroreflectivity readings; and
 - upper validation thresholds (may be included separately with the raw data but must be clearly identified with the data collected using that threshold).

3.6. **Field Comparison Checks with a Portable Retroreflector.** Take a set of field comparison readings with the portable retroreflector at least once every 4 hr. while conducting MRDC or at the frequency designated by the Engineer. Take a minimum of 20 readings, spread out over the interval measured. List the average portable retroreflector reading next to the mobile average reading for that interval with the

reported MRDC data. Request approval from the Engineer to take field comparison readings on a separate roadway, when measuring a roadway where portable retroreflector readings are difficult to take. Take the off-location field comparison readings at no additional cost. Submit the portable retroreflector printout of all the readings taken for the field comparison check with the corresponding MRDC data submitted. The mobile average reading must be within $\pm 15\%$ of the portable average reading. The Engineer may require new MRDC for some or all of the pavement markings measured in a 4-hr. interval before a field comparison check not meeting the $\pm 15\%$ range. Provide the new MRDC at no extra cost to the Department. The Engineer may take readings with a Department portable retroreflector to ensure accuracy at any time. The Department's Materials and Tests Division (MTD) will take comparison readings and serve as the referee if there is a significant difference between the Engineer's portable readings and the Provider's mobile and handheld readings. For best results, take field comparison readings on a fairly flat and straight roadway when possible.

- 3.7. **Periodic Field Checks at Pre-Measured Locations.** When requested by the Engineer, measure with the mobile unit and report to the Engineer immediately after measurement the average retroreflectivity values for a designated pre-measured test location. The Engineer will have taken measurements at the test location within 10 days of the test. The test location will not include pavement markings less than 30 days old. If the measured averages do not fall within $\pm 15\%$ of the pre-measured averages, further calibration and comparison measurements may be required before any further MRDC. Submit the results of the field check with the MRDC report for that day.
- 3.8. **Measurement Notification.** Provide notification via email to Mobileretro@tamu.edu with a carbon copy to the Engineer a minimum of 24 hr. before mobile retroreflectivity data collection to allow for scheduling verification testing when needed.
- 3.9. **Verification Testing.** The Engineer or a third party may perform retroreflectivity verification testing within seven days of the Provider's retroreflectivity readings. The Provider-submitted retroreflectivity data will be compared to the verification test data to determine acceptability of the Provider's mobile retroreflector data. Comparison of the data will result in one of the two scenarios below:
- Provider's Data is Validated – if the difference between Provider's and Engineer-third party data is 20% or less, then the Provider's data is validated. The Provider's data will be used for acceptance.
 - Provider's Data is not Validated – if the difference between Provider's and Engineer-third party data is more than 20%, then the Provider's data is not validated. The Engineer-third party data will be used for acceptance and the Provider will be required to take corrective action before additional Provider data collection and may require re-certification of the mobile retroreflector. If the Engineer determines that the Provider's data might be correct then, referee testing may be requested by the Engineer.
- 3.10. **Referee Testing.** MTD will perform referee testing using portable retroreflectometers to determine if the markings need to be restriped to meet the required retroreflectivity level. The referee test results will be final. Referee testing will be conducted on the verification test sections using the method for portable retroreflectometers specified in Item 666, "Reflectorized Pavement Markings."

4. FINAL REPORT

Submit a final report in the format specified by the Engineer to the Department's Traffic Engineering representative within one calendar week after the service is complete. The final report must contain a list of all problems encountered (pre-approved event codes) and the locations where problems occurred during MRDC.

5. MEASUREMENT

When mobile retroreflectivity data collection for pavement markings is specified on the plans to be a pay item, measurement will be by the mile driven while measuring pavement markings.

6. PAYMENT

Unless otherwise specified on the plans, the work performed, materials furnished, equipment, labor, tools, and incidentals will not be paid for directly, but will be considered subsidiary to bid items of the Contract. When mobile retroreflectivity data collection for pavement markings is specified on the plans to be a pay item, the work performed in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Mobile Retroreflectivity Data Collection." This price is full compensation for providing summaries of readings to the Engineer, equipment calibration and prequalification, equipment, labor, tools, and incidentals.

Special Specification 7309

Bridge Structure Cleaning



1. DESCRIPTION

Remove all extraneous material from bridge bents, girders, and deck soffits, and wash bridge elements.

2. WORK METHODS

Clear all debris from top of cap by methods that will not damage concrete or bearing devices (including coatings on steel bearings).

Water-blast with potable water and with pressure not exceeding 4,000 psi to wash backwall and top and front face of abutment caps after clearing extraneous material from top of abutment cap.

Water-blast with potable water and with pressure not exceeding 4,000 psi to wash top, bottom, and side faces of interior bent caps after clearing extraneous material from top of bent caps.

Water-blast with potable water and with pressure not exceeding 4,000 psi to wash bottom and side faces of girders after clearing extraneous material from them.

Water-blast with potable water and with pressure not exceeding 4,000 psi to wash bottom faces of deck soffit after clearing extraneous material from them.

Acceptance of the cleaned bridge element occurs at the final acceptance of the project in accordance with Article 5.11., "Final Cleanup," unless otherwise shown on the plans.

3. MEASUREMENT

This Item will be measured by each bent cap, each abutment cap, each girder, or each deck soffit between girders or overhangs per span cleaned regardless of the length of cap, abutment, girder, or deck soffit or of the number of steel bearings supported by each structure element.

4. 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 "Cleaning Structure (Bent)," "Cleaning Structure (Abutment)," "Cleaning Structure (Girder)," and "Cleaning Structure (Deck Soffit)." Washing of steel bearings is to be included in the price bid for cleaning bridge bents and abutments. This price is full compensation for cleaning, removing, and disposing of debris and wash water, on bridge bents and supported steel bearings, and girders and deck soffit, equipment, labor, materials, tools, and incidentals.

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