



# 2024 Standard Specification Training Seminar



# 2024 Standard Specifications Changes Items 1-10

General Requirements and Covenants



The information presented is a quick comparison between the 2014 and 2024 Standard Specifications Books.

Due to the number of revisions made, not every change is listed. Multiple Items have changes so significant that a quick comparison would not suffice. To familiarize yourself with the Items of the 2024 Standard Specifications Book, you will need to read the Item Specification in its entirety. TxDOT makes no claims, promises or guarantees about the accuracy, completeness, or adequacy of the contents of this presentation and expressly disclaims liability for errors and omissions in the content presented.





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- the Bidder or a subsidiary or affiliate of the Bidder has received compensation from the Department to participate in the preparation of the plans or specifications on which the bid or Contract is based, ~~or~~
- the Bidder is ineligible to bid on any proposed Contract in accordance with Article 7.15., "Responsibility ~~Damage Claims-~~"
- **the Bidder is prohibited from participating in the Contract because of a decision of the Deputy Executive Director under 43 TAC § 9.24 (relating to Performance Review Committee and Actions),**
- ~~the Bidder failed to attend a mandatory pre-bid conference.~~
- ~~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 submit a DBE commitment as specified in Article 2.14., "Disadvantaged Business Enterprise (DBE)," is prohibited from rebidding that specific project, or~~
- ~~the Bidder or affiliate of the Bidder that was originally determined as the apparent low Bidder on a project but was deemed nonresponsive for failure to register or participate in the Department of Homeland Security (DHS) E-Verify system as specified in Article 2.15., "Department of Homeland Security (DHS) E-Verify System," is prohibited from rebidding that specific project.~~

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

### 4. INTERPRETING ESTIMATED QUANTITIES

The quantities listed ~~in~~ the proposal form are approximate and will be used for the comparison of bids. Payments will be made for the work performed in accordance with the Contract.

### 5. EXAMINING DOCUMENTS AND WORK LOCATIONS

Examine the proposal form, plans, specifications, and specified work locations before submitting a bid for the work. Submitting a bid will be considered evidence that the Bidder has performed this examination. Borings, soil profiles, water elevations, and underground utilities shown on the plans were obtained for ~~the Department's use of the Department~~ in the preparation of ~~the~~ plans. This information is provided for the Bidder's information only, and the Department makes no representation as to the accuracy of the data. Be aware of the difficulty of accurately classifying all material encountered in making foundation investigations, the possible erosion of stream channels and banks after survey data have been obtained, and the unreliability of water elevations other than for the data recorded.

## Example from redline document.

- Yellow Highlight = new change.
- Grey highlight = existing Special Provision or Practice.
- Red (no highlight) = grammar change.





- Item 1
  - Added “in Writing” definition.
  - Clarified what is in the MPL.
  - Added Material Contract and Material Suppliers Questionnaire definition.
  - Plans state documents may be digital.
  - Added definition of Repair.
  - Added Definition for Substantial Completion of Work.



## 3. ISSUING PROPOSAL FORMS

The Department will issue a proposal form to a prequalified Bidder if the Engineer's estimate is within that Bidder's available bidding capacity. Request a proposal form electronically from the Department's website. A proposal form printed directly from the Department's website is for informational purposes only and will not be accepted as an official proposal form. In the case of a joint venture, (JV), all joint venture (JV) participants must be prequalified. An equally divided portion of the Engineer's estimate must be within each participant's available bidding capacity.

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

- the Bidder is suspended or debarred by the Commission, or the Department, or any federal agency,
- the Bidder has not fulfilled the requirements for prequalification,
- the Bidder does not have the available bidding capacity,
- the Bidder is prohibited from rebidding a specific proposal form due to a bid error on the original proposal form,
- the Bidder failed to enter into a Contract on the original award,
- the Bidder was defaulted or terminated on the original Contract, unless the Department terminated in the best interest of the State or the public,

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- the Bidder or a subsidiary or affiliate of the Bidder has received compensation from the Department to participate in the preparation of the plans or specifications on which the bid or Contract is based, or
- the Bidder is ineligible to bid on any proposed Contract in accordance with Article 7.15., "Responsibility (Damage Claims.)"
- the Bidder is prohibited from participating in the Contract because of a decision of the Deputy Executive Director under 43 TAC § 9.24 (relating to Performance Review Committee and Actions),
- (Bidder failed to attend a mandatory pre-bid conference,
- 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 submit a DBE commitment as specified in Article 2.14., "Disadvantaged Business Enterprise (DBE)," is prohibited from rebidding that specific project, or
- the Bidder or affiliate of the Bidder that was originally determined as the apparent low Bidder on a project but was deemed nonresponsive for failure to register or participate in the Department of Homeland Security (DHS) E-Verify system as specified in Article 2.15., "Department of Homeland Security (DHS) E-Verify System," is prohibited from rebidding that specific project.

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

## ■ Issuing Proposal Forms

- Removed Federal debarment and suspension check. This check is being conducted after letting and not at time of issuing proposals.
- Did not attend mandatory pre-bid.

– SP000-659;

- Contractor Evaluations and Performance Review Committee Actions (PRC).

– 002-009;

- DBE requirements at bidding.

– 002-015 (previously 002-011);

- E-Verify requirements



### 6. PREPARING THE BID

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

Specify a unit price in dollars and cents for each regular item and additive alternate item, or replacement alternate item for which an estimated quantity is given.

When "Working Days" is an ~~item~~, submit the number of working days to be used to complete the Contract or phases of the Contract shown on the plans.

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

~~the proposal form was not signed,~~

- certifications were not acknowledged,
- a regular item or the additive alternate item ~~are~~ left blank,
- a regular item and the corresponding replacement alternate item are left blank,
- the proposal form submitted had the incorrect number of items, ~~or~~
- the Bidder did not acknowledge all addenda, or

■ additionally, for printed bids:

- the blank spaces for each item as required on the bid form are not filled in by writing in words in ink,
- the bid was not signed in ink in the complete and correct name of the bidder making the bid, and signed by the person or persons authorized to bind the bidder, or
- unit prices were not stated in dollars and cents for each bid item listed on the bid form, except in the case of a regular bid item that has an alternate bid item.

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

- Clarified what constitutes incomplete bid for printed bids:
  - the blank spaces for each item as required on the bid form are not filled in by writing in words in ink,
  - the bid was not signed in ink in the complete and correct name of the bidder making the bid, and signed by the person or persons authorized to bind the bidder, or
  - unit prices were not stated in dollars and cents for each bid item listed on the bid form, except in the case of a regular bid item that has an alternate bid item.





### 7. NONRESPONSIVE BID

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

- the bid was not in the hands of the Letting Official at the time and location specified in the advertisement,
- a ~~bid proposal form~~ was submitted for the same ~~proposal form project~~ by a Bidder or Bidders and one or more of its partners or affiliates, unless the Executive Director has granted an affiliation exception under 43 TAC § 9.12.
- the Bidder was not authorized to receive a proposal form under Article 2.3., "Issuing Proposal Forms";
- the Bidder failed to acknowledge receipt of all addenda issued,
- the proposal form was signed by a person who was not authorized to bind the Bidder or Bidders;
- the proposal guaranty did not comply with the requirements contained in this Item,
- the bid was in a form other than the official proposal form issued by the Department,
- the Bidder modified the bid in a manner that altered the conditions or requirements for work as stated in the proposal form,
- the Bidder bid more than the maximum or less than the minimum number of allowable working days shown on the plans when working days was an ~~item~~,
- ~~the Bidder did not attend a specified mandatory pre bid conference, or~~
- ~~a typed proposal form does not contain the information in the format shown on the "Example of Bid Prices Submitted by Computer Printout" on the proposal form.~~
- ~~the Bidder did not meet the requirements of the technical qualification.~~
- ~~the Bidder failed to submit a DBE commitment as specified in Article 2.14., "Disadvantaged Business Enterprise (DBE)," or~~
- ~~the Bidder failed to participate in the DHS E-Verify system as specified in Article 2.15., "Department of Homeland Security (DHS) E-Verify System."~~

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

- Added SP for DBE, E-Verify, and Contractor Performance.
- Removed did not attend mandatory pre-bid.
- Acceptable format for typed, "Example of Bid Prices submitted by Computer Printout" on the proposal form.



8.	<b>ELECTRONIC BID</b>  The Bidder is responsible for taking the appropriate measures to submit a bid. These measures include, but are not limited to acquiring hardware, software, and Internet connectivity needed for submitting a bid via the Department's bidding system.
8.1.	<b>Proposal Form.</b> Use the electronic proposal form in the Department's bidding system. When regular bid items have corresponding replacement alternate items, select the bid item or group of items to be used for the bid tabulation. Acknowledge all addenda listed in the Department's bidding system.  The electronic proposal form does not contain the special provisions, special specifications, general notes, and other Contract documents. These documents are included by reference.
8.2.	<b>Proposal Guaranty.</b> Provide a proposal guaranty in the amount indicated on the proposal form. Use an electronic bid bond. Guaranty checks or printed bid bonds will not be accepted.  <del>Use the most current version of the electronic bond issued by the Department.</del> For a <u>joint venture JV</u> , the bond must be in the name of all <u>joint venture JV</u> participants. Enter the bond authorization code into the Department's bidding system.  It is the Bidder's responsibility to ensure the electronic bid bond is issued in the name or <u>as a Department vendor identification numbers</u> of the Bidder or Bidders.
8.3.	<b>Submittal of Bid.</b> Submit the bid to the vault using the Department's bidding system.
8.4.	<b>Revising the Proposal Form.</b> Make desired changes in the Department's bidding system up until the time and date set for the opening of bids. The last bid submitted to the vault will be used for tabulation purposes.
8.5.	<b>Withdrawing a Bid.</b> Submit an electronic or written request to withdraw a bid before the time and date set for the opening. The Department will not accept oral requests. An electronic request must be made using the Department's bidding system.  <u>If a bidder is unable to withdraw an electronic bid using the Department's bidding system, a written request may be submitted.</u> A written request must be signed and submitted to the Letting Official <u>conducting the letting</u> , with proof of identification. The request must be made by a person authorized to bind the Bidder or Bidders. In the case of <u>joint venture JV</u> , the Department will accept a request from any person authorized to bind a party to the <u>joint venture JV</u> . The Department may require written delegation of authority to withdraw a bid when the individual sent to withdraw the bid is not authorized to bind the Bidder or Bidders.

- Removed “use the most current version of electronic bond issued by the department”
- Included SP002-009;
  - Bond may be issued in the department vendor identification numbers of the bidder(s).
- Written request is required if unable to withdrawal electronic bid.



9. **PRINTED BID**

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

When regular bid items have corresponding replacement alternate items, select the bid item or group of items to be used for the bid tabulation. Acknowledge all addenda by checking the appropriate box on the addendum acknowledgement page. Provide the complete and correct name of the Bidder submitting the bid. A person authorized to bind the Bidder must sign the proposal form. In the case of a joint venture JV, provide the complete and correct name of all Bidders submitting the bid. In the case of a joint venture JV, the person signing the proposal form must be authorized to bind all joint venture JV participants.

~~If a proposal form contains both regular items for domestic steel or iron materials and replacement alternate items for foreign steel or iron materials, the Bidder must either:~~

- ~~■ submit unit bid prices for domestic items only, or~~

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- ~~■ submit unit bid prices for both the domestic and foreign items.~~

- Removed foreign iron or steel alternative bidding preference.
  - SP will be required if route is pursued.





## 11. TABULATING BIDS

11.1. **Official Total Bid Amount.** The Department will sum the products of the quantities and the unit prices bid on the proposal form to determine the official total bid amount, except as provided in Section 2.11.5., "Consideration of Unit Prices." The official total bid amount is the basis for determining the apparent low Bidder. The total bid amounts will be compared and the results made public.

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

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

11.3. **Rounding of Unit Prices.** The Department will round off all unit bids involving fractional parts of a cent to the nearest one-tenth cent (\$0.001) in determining the amount of the bid as well as computing the amount due for payment of each item under the Contract. For rounding purposes, entries ~~that contain~~ **five-hundredths** of a cent (\$0.0005) or more will be rounded up to the next highest tenth of a cent, while entries ~~that contain~~ **less than five-hundredths** of a cent will be rounded down to the next lowest tenth of a cent and in accordance with Section 2.11.5., "Consideration of Unit Prices." Bids less than one-tenth of a cent (\$0.001) will be rounded to one-tenth of a cent (\$0.001). When credit items are included (negative unit prices), rounding is performed on the absolute value.

11.4. **Interpretation of Unit Prices.** The Department will make a documented determination of the unit bid price if a unit bid price is illegible or conflicting in the case of replacement alternate items. The Department's determination will be final.

11.5. **Consideration of Unit Prices.** Unit bid price entries such as no dollars and no cents, zero dollars and zero cents, or numerical entries of less than \$0.001 will be tabulated as one-tenth of a cent (\$0.001). The Department will consider proposals in which unit bid prices have been left blank incomplete and nonresponsive.

11.5.1. **Alternate Items.** If a proposal has a regular and corresponding alternate item or group of items, the proposal will be considered complete if:

- the regular item or group of regular items has unit prices entered,
- the alternate item or group of alternate items has unit prices entered, or
- both regular item or group of regular items and alternate item or group of alternate items have unit prices entered. The Department will use the price bid for the regular or the alternate item, or group of items, that will result in the lowest cost to the State.

The bid will be considered incomplete and nonresponsive if:

- a regular item or group of regular items is left blank, or
- a corresponding alternate item or group of alternate items is left blank.

- Electronic Bid takes preference over paper bid.
- Clarified Rounding of unit prices.
- Added section on how alternate items will be addressed.
- Clarified incomplete bids will be considered incomplete and non-responsive.



~~11.5.2-11.5.3.~~ **A + B Bidding.** The official total bid amount will be determined by the summation of the Contract amount and the time element. The Department will use the following formula to make the calculation:

$$A + B1 + B2 + BX + \dots + BT$$

The Contract amount, equal to A in the formula, is determined by the summation of the products of the approximate quantities shown in the proposal and the unit bid prices bid, and the time element, equal to B1, B2, BX (when phases are included as bid components), and BT (substantial completion of the project when

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included as a bid component), of the bid is determined by multiplying the number of working days bid to substantially complete the project, or phases, by the daily road-user cost (RUC) ~~provided~~ shown on the plans. When partial days are bid, they will be rounded up to the nearest whole day.

The formula above determines the low Bidder and establishes the Contract time or time for specific phases of the Contract.

~~11.5.3-11.5.4.~~ **Rubber Additives.** For proposed Contracts without federal funds, if an alternate item for "Hot Asphalt-Rubber Surface Treatments" or "Hot-Mix Asphalt Concrete Pavement" ~~which that~~ contains ground tire rubber is shown ~~in on~~ the proposal form and the Bidder bids that alternate item, the amounts bid for "Hot Asphalt-Rubber" and "Aggregate" or "Hot-Mix Asphalt Concrete" will be reduced to 85% of the amounts actually bid. This reduction will only be used for the purposes of determining the lowest Bidder. To qualify, the ground tire rubber used must be produced from scrap tire ground in a facility in Texas. Payment for "Hot Asphalt-Rubber" and "Aggregate" or "Hot-Mix Asphalt Concrete" will be at the actual unit prices bid.

~~11.5.4.~~ **"Buy America."** ~~The use of foreign steel is only allowed when shown on the plans. For a Bidder who proposes to use foreign steel or iron materials to be considered the apparent low Bidder, their total bid must be at least 25% lower than the next lowest bid if that bid proposes to use domestic steel or iron materials.~~

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

- Clarified B portion of A+B formula.
- Provision for alternative bidding pertaining to Foreign iron or steel was removed



## 14. DISADVANTAGED BUSINESS ENTERPRISE (DBE)

The apparent low bidder must submit DBE commitment information on federally funded projects with DBE goals within 5 calendar days (as defined in 49 CFR Part 26, Subpart A) of bid opening. For a submission that meets the 5-day requirement, administrative corrections will be allowed.

If the apparent low Bidder fails to submit their DBE information within the specified timeframe, they will be deemed 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 design 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 new apparent low Bidder has already submitted DBE information to the Department.

If the new apparent low Bidder did not submit the required DBE information:

- 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 apparent low bidder will become the property of the State, not as a penalty, but as liquidated damages.



## 15. DEPARTMENT OF HOMELAND SECURITY (DHS) E-VERIFY SYSTEM

The Department will not award a Contract to a Contractor that is not registered in the DHS E-Verify system. Remain active in E-Verify throughout the life of the Contract. In addition, in accordance with Article 8.2, "Subcontracting," sixth paragraph, 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

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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.

- No change: Current SP002-015 adding E-Verify requirements.
- No Change; Included existing SP006-009 DBE requirements





## 1. AWARD OF CONTRACT

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

1.1. **Award.** The Commission or ~~designated representative~~ original award authority will award the Contract to the low Bidder as determined by in accordance with Article 2.11., "Tabulating Bids." The Commission may award a Contract to the second lowest Bidder when the following requirements have been met:

- the Contract is for maintenance work with an Engineer's estimate bid amount less than \$300,000, and the Contract does not include federal funds,
- the low Bidder withdraws ~~his~~ their bid or fails to enter into Contract,
- the second lowest Bidder agrees to perform the work at the unit bid prices of the low Bidder,
- the Executive Director recommends in writing the award of the Contract to the second lowest Bidder, and
- the Commission agrees with the Executive Director's recommendation for award to the second lowest Bidder.

1.2. **Rejection.** The Commission or ~~designated representative~~ original award authority will reject the Contract if:

- collusion may have existed among the Bidders. Collusion participants will not be allowed to bid future proposals for the same Contract,
- the low bid is mathematically and materially unbalanced. The Bidder will not be allowed to bid future proposals for the same Contract,
- the lowest bid is higher than the Department's estimate, and re-advertising for bids may result in a lower bid,
- the low bid contains a bid error that satisfies the requirements and criteria in Article 2.12., "Consideration of Bid Errors," or
- rejection of the Contract is in the best interest of the State.

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

- Designated representative changed to original award authority.
- Engineer's Estimate changed to Bid amount.



4.3. **Insurance.** ~~Submit~~ For construction and building Contracts, submit a certificate of insurance showing coverages in accordance with the Contract requirements. For routine maintenance Contracts, refer to Article 3.8., “Beginning of Work.”

Insurances ~~must~~ cover the work for the duration of the Contract and must remain in effect until final acceptance. Provide project-specific insurance, not listed in Table 2, until acceptance of the work covered by the project-specific insurance or as approved by the Engineer. Failure to obtain and maintain insurance for the contracted work may result in suspension of work or default of the Contract. If the insurance expires and coverage lapses for any reason, stop all work until the Department receives an acceptable certificate of insurance.

Provide the Department with a certificate of insurance verifying the types and amounts of coverage shown in Table 2. The certificate of insurance must be in a form approved by the Texas Department of Insurance. Certificates of insurance for commercial general liability, auto liability, and workers’ compensation must include the Contractor’s prequalified name in the “Insured” field. Any certificate of insurance provided must be available for public inspection.

**Table 2**  
**Insurance Requirements**

Type of Insurance	Amount of Coverage
<del>Commercial General Liability Insurance</del> <u>general liability insurance</u>	Not <del>Less Than</del> <u>less than</u> : \$ <del>1,000,000</del> <u>600,000</u> each occurrence
<del>Business Automobile Policy</del> <u>automobile policy</u>	Not <del>Less Than</del> <u>less than</u> : \$600,000 combined single limit
<del>Workers’ Compensation</del> <u>compensation</u>	Not <del>Less Than</del> <u>less than</u> : Statutory
<del>All Risk Builder’s Risk Insurance</del> <u>All risk builder’s risk insurance (for building-facilities contracts only)</u>	100% of Contract <del>Price</del> <u>price</u>

- Incorporated existing SP003-011.
- Added project specific insurance is required until acceptance of work covered by the project specific insurance or as approved by the Engineer.
  - Note there is only one final acceptance on the project
  - Engineer may approve to discontinue the project specific insurance at any time.
    - An example of an acceptable situation is when no work will transpire, transverse, or be within 50 feet of a location requiring project specific insurance on a multiple location project.
    - Also note that Construction Division is not aware of project specific decision and therefore will continue to issue stop work notices for insurance requirements. The District is responsible for enforcing that requirement as needed.
- Added that the certificate of insurance provided must include the Contractor’s prequalified name in the “Insured” field.
- Incorporated SP003-013 which changed General Liability from \$1 million to \$600,000.

# Item 3 – Award and Execution of Contract



- 4.4. **Business Ownership Information.** Submit the names and ~~social security~~Social Security numbers of all individuals owning 25% or more of the firm, or firms in the case of a joint venture, on the Department's form.
- ~~4.5. **List of Quoting Suppliers and Subcontractors.** For a construction Contracts, submit a list of all suppliers and subcontractors that quoted on the Contract. Include names, addresses, telephone numbers, and types of work required.~~
- 4.6-4.5. **Railroad Documents.** Provide all required documents for satisfaction of railroad requirements for projects that have work ~~which involves~~involving railroad right of way. Comply with the requirements of Article 5.8., "Cooperation ~~With~~with Railroads."

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## 5. FAILURE TO ENTER CONTRACT

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

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

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## 6. APPROVAL AND EXECUTION OF CONTRACT

The Contract will be approved and signed under authority of the Commission.


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## 7. RETURN OF PROPOSAL GUARANTY

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

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## 8. BEGINNING OF WORK

Do not begin work until authorized in writing by the Engineer.  In addition, for a routine maintenance Contract, do not begin work until a certificate of insurance showing coverages in conformance with the Contract requirements is provided and accepted.

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

- Removed list of quoting suppliers and subcontractors from the specification.
- Mentioned refer to Performance Review Committee (PRC) for failure to enter contract.





### 3. PARTNERING

The intent of this ~~section~~Article is to promote an environment of trust, mutual respect, integrity, and fair-dealing between the Department and the Contractor.

Informal partnering does not make use of a facilitator ~~and is led by the Engineer in charge of the work and the Contractor's counterpart~~, while formal partnering uses the services of a facilitator (internal or external).

### 4. CHANGES IN THE WORK

When the quantity of work to be done under any major item of the Contract is more than 125% of the original quantity stated in the Contract, then either party to the Contract may request an adjustment to the unit price on the portion of the work that is above 125%.

When the quantity of work to be done under any major item of the Contract is less than 75% of the original quantity stated in the Contract, then either party to the Contract may request an adjustment to the unit price. ~~Adjust the unit price by multiplying the Contract unit price by the factor in Table 1.~~

~~For routine maintenance Contracts, if an adjusted unit price cannot be agreed upon, the Engineer may determine the unit price by multiplying the Contract unit price by the factor shown in Table 1.~~

**Table 1**  
**Quantity-Based Price Adjustment Factors**

% of Original Quantity	Factor
≥50 and <75	1.05
≥25 and <50	1.15
<25	1.25

If the changes require additional working days to complete the Contract, Contract working days will be adjusted in accordance with Item 8, "Prosecution and Progress."

- Clarified that the Engineer and Contractors' counterpart are required to lead partnering.
- Table 1 now only for Routine Maintenance Contracts.



### 5. DIFFERING SITE CONDITIONS

During the progress of the work, differing subsurface or latent physical conditions may be encountered at the site. The two types of differing site conditions are defined as:

- those that differ materially from those indicated in the Contract, and
- unknown physical conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the Contract.

Notify the Engineer in writing when differing site conditions are encountered. The Engineer will notify the Contractor in writing when the Department discovers differing site conditions. Unless directed otherwise, suspend work on the affected items and leave the site undisturbed. The Engineer will investigate the conditions and determine whether differing site conditions exist. The Engineer will provide written notification of the determination whether or not an adjustment of the Contract is warranted. If the differing site conditions cause an increase or decrease in the cost or number of working days specified for the performance of the Contract, the Engineer will make adjustments, excluding the loss of anticipated profits, in accordance with the Contract. Additional compensation will be made only if the required written notice has been provided by either the Contractor or the Engineer.

- Clarified notification and determination of differing site conditions need to be in writing.



## 6. REQUESTS FOR ADDITIONAL COMPENSATION AND DAMAGES


Compensation.



~~Damages~~ **Compensable damages** occur when impacts that are the responsibility of the Department result in additional costs to the Contractor that could not have been reasonably anticipated at the time of letting. Costs of performing additional work are not considered damages. ~~For~~ **Notify the Engineer in writing as soon as possible for** Contractor damages. ~~the~~ **The** intent is to reimburse the Contractor for actual expenses arising ~~out of~~ **from** a compensable impact. No profit or markups, other than labor burden, will be allowed. For damages, labor burden will be reimbursed at 35% unless the Contractor can justify higher actual cost. Justification for a higher percentage must be in ~~accordance~~ **conformance** with the methodology provided by the Department, submitted separately for project overhead labor and direct labor, and determined and submitted by a Certified Public Accountant (CPA). Submit CPA-prepared labor burden rates directly to the Construction Division for approval.

The Department will not consider fees and interest on requests for additional compensation and damages. Fees include, but are not limited to: preparation, attorney, printing, shipping, and various other fees.

If the Contractor requests compensation for damages and the damages are determined to be compensable, then standby equipment costs and project overhead compensation will be based on the duration of the compensable damage and will be limited as follows:

- 6.1. **Standby Equipment Costs.** Payment will be made in accordance with Section 9.7.1.4.3., "Standby Equipment Costs."
- 6.2. **Project Overhead.** Project overhead is defined as the administrative and supervisory expenses incurred at the work locations. When delay to project completion  occurs, reimbursement for project overhead for the Contractor will be made using the following options **at the Contractor's discretion:**
  - reimbursed at 6% (computed as daily cost by dividing 6% of the original Contract amount by the number of original Contract work days), or
  - actual documented costs for the impacted period.

Project overhead for delays impacting subcontractors will be determined from actual documented costs submitted by the Contractor.

- Emphasized notification of damages must be in writing as soon as possible.
- Clarified options for Overhead calculation using 6% or actual documented cost is at the Contractor's discretion.



7.

## DISPUTE OR CLAIMS PROCEDURE

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

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

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

The Department's Contract claim procedure has been established in accordance with ~~Title 43 of the Texas Administrative Code, Part 1, Chapter 9, Subchapter A, Rule §TAC § 9.2, "Contract Claim Procedure."~~ Detailed instructions for submitting a claim and its components can be found on the Department's website.

The Contractor, or subcontractor through the Contractor, will file a Contract claim request and a detailed report that provides the basis for the claim. The detailed report will include relevant facts of the claim, cost or other data supporting the claim, a description of any additional compensation requested, and documents supporting the claim.

The claim must include the following certification: "I certify that the claim is made in good faith, that the supporting data are accurate and complete to the best of my knowledge and belief, that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Department is liable, and that I am duly authorized to certify the claim on behalf of the Contractor."

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

File a claim after completion of the Contract or when required for orderly performance of the Contract. For a claim resulting from enforcement of a warranty period, file the claim no later than ~~one year~~ 1 yr. after expiration of the warranty period. For all other claims, file the claim no later than 1 yr. after the date the Department issues notice to the Contractor that they are in default, the date the Department terminates the Contract, or ~~one year after~~ the date of final acceptance of the Contract. It is the Contractor's responsibility to submit requests in a timely manner.

- Removed CST assisting with Disputes.
- Clarified claim needs to have a detailed report.
- Claims must include certification statement.



## 1. AUTHORITY OF ENGINEER

The Engineer has the authority to observe, test, inspect, approve, and accept the work, either in writing or orally. The Engineer decides all questions about the quality and acceptability of materials, work performed, work progress, Contract interpretations, applicability of standard details, and acceptable Contract fulfillment. The Engineer has the authority to enforce and make effective these decisions.

■ Unless noted elsewhere in the Contract or by the Engineer, payment for Contractor work supports it in accordance with the Contract requirements at that time. This payment does not eliminate the Contractor's responsibilities for the work as defined in Article 7.17., "Contractor's Responsibility for Work," or Article 5.12., "Final Acceptance."

■ 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 may pursue and document actions against the Contractor, including, as warranted to address Contract performance issues. Contract remedies include, but are not limited to, the withholding of estimates following:

■ conducting interim performance evaluations requiring a Project Recovery Plan, in accordance with 43 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, for noncompliance of the Contract.

■ The Engineer may suspend the work, without suspending working day charges for noncompliance,

■ 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.

- Engineer may act verbally or in writing.
- Added statement clarifying payment supports pay item is in accordance with the contract at the time the payment is made.
  - The pay item is still contractor's responsibility to meet contract requirements prior to final acceptance.
- Incorporated existing SP005-002 which list the contract remedies.





## 9. CONSTRUCTION SURVEYING

Use Method C unless otherwise specified in the Contract. Upon request, the Engineer will allow the Contractor to copy available earthwork cross-sections, computer printouts or data files, and other information necessary to establish and control work. ~~Maintain the integrity of control points.~~ Preserve all control points, stakes, marks, and right of way markers. Assume cost and responsibility of replacing disturbed control points, stakes, marks, and right of way markers damaged by the Contractor's or its ~~subcontracters~~ subcontractor's operations. If the Department repairs disturbed control points, stakes, marks, or right of way markers, the cost of repair may be deducted from money due or to become due to the Contractor. Replace right of way markers under the direction of aan RPLS. This work performed under this Article will not be measured or paid for directly, but will be ~~considered~~ subsidiary to pertinent Items.

The Engineer reserves the right to make measurements and surveys to determine the accuracy of the work and determine pay quantities. The Engineer's measurements and surveys do not relieve the Contractor's responsibility for accuracy of work. Allow the Engineer adequate time to verify the surveying.

9.1. **Method A.** The Engineer will set control points for establishing lines, slopes, grades, and centerlines and for providing both vertical and horizontal control.

At ~~a~~ minimum, provide a controlling pair of monument points at both the beginning and end of construction project for projects less than 2 mi. in length. For projects greater than 2 mi. in length, monuments will be set in pairs ~~of 2~~ at a minimum of 2 mi. based on the overall length of the project. Use these control points as reference to perform the work.

Furnish materials, equipment, and qualified workforce necessary for the construction survey work. Place construction points, stakes, and marks at intervals sufficient to control work to established tolerances. Place construction stakes at intervals of no more than 100 ft., or as directed. Place stakes and marks so as not to interfere with normal maintenance operations.

9.2. **Method B.** The Engineer will set adequate control points, stakes, ~~stationing~~ stationing, and marks to establish lines, slopes, grades, and centerlines. Furnish additional work, stakes, materials, and templates necessary for marking and maintaining points and lines.

9.3. **Method C.** ~~Set~~ Set adequate control points, stakes, and marks to establish lines, slopes, grades, and centerlines. Place construction points, stakes, and marks at intervals sufficient to control work to established tolerances. Place construction stakes at intervals of no more than 100 ft., or as directed. Place stakes and marks so as not to interfere with normal maintenance operations.

- Removed “maintain the integrity of control points”
- Stationing was added to Method B.
- Provided interval for construction stakes and statement that construction points, stakes, and marks at intervals sufficient to meet tolerances.



## 10. INSPECTION

Inspectors are authorized representatives of the Engineer. Inspectors are authorized to examine all work performed and materials furnished, including preparation, fabrication, and material manufacture. Inspectors inform the Contractor of failures to meet Contract requirements. Inspectors may reject work or materials and may suspend work until any issues can be referred to and decided by the Engineer. The Engineer may authorize Inspectors to adjust the traffic control. Inspectors cannot alter, add, or waive Contract provisions, issue instructions contrary to the Contract, act as foremen for the Contractor, or interfere with the management of the work. Inspection or lack of inspection will not relieve the Contractor from obligation to provide materials or perform the work in accordance with the Contract.

Provide safe access to all parts of the work and provide information and assistance to the Engineer to allow a complete and detailed inspection. Give the Engineer sufficient notice to inspect the work. Work performed without suitable inspection, as determined by the Engineer, may be ordered removed and replaced at Contractor's expense. Remove or uncover portions of finished work as directed. Once inspected, restore work to Contract requirements. If the uncovered work is acceptable, the costs to uncover, remove, and replace or make good the parts removed will be paid for in accordance with Article 4.4., "Changes in the

- Added language allowing the Engineer to empower inspectors to adjust traffic control as needed.
  - Use caution in making changes.
  - Document any changes to the TCP.
- Clarified Construction project litter.

## 11. FINAL CLEANUP

Upon completion of the work, remove construction project litter, debris, objectionable material, temporary structures, excess materials, and equipment from the work locations. Clean and restore property damaged by the Contractor's operations during the prosecution of the work. Leave the work locations in a neat and presentable condition.

Remove from the right of way cofferdams, construction buildings, material and fabrication plants, temporary structures, excess materials, and debris resulting from construction. Where work is in a stream, remove debris to the ground line of the bed of the stream. Leave stream channels and rights of way in a neat and presentable condition. Clean structures to the flow line or the elevation of the outfall channel, whichever is higher. Dispose of all excess material in accordance with federal, state, and local regulations.

The work performed under this Article will not be paid for directly, but will be ~~considered~~ subsidiary to Items of the Contract.



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### 12. FINAL ACCEPTANCE

12.2.3. Final Measurement. Final measurements and pay quantity adjustments may be made after final acceptance. Final acceptance will not be held for final measurements or pay quantity adjustments.

12.2.4. Removal of Traffic Control Devices. Remove any remaining construction traffic control devices and advance warning signs upon final acceptance or as directed.

- Added final acceptance cannot be held for final measurement or pay quantity adjustments.



## 1. SOURCE CONTROL

Use only materials that meet Contract requirements. Unless otherwise specified or approved, use new materials for the Work. Secure the Engineer's approval of the proposed source of materials to be used before their delivery. Materials can be approved at a supply source or staging area but may be inspected in accordance with Article 6.4., "Sampling, Testing, and Inspection."

- 1.1. **Buy America.** Comply with the latest provisions of **Buy America pertaining to steel and iron in accordance with 23 CFR § 635.410.** Use steel or iron **materials** manufactured in the United States except when **waived in accordance with** Section 6.1.2., "Buy America Exceptions."

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

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 (e.g., cutting, drilling, welding, and bending) and coating (e.g., paint, galvanizing, and epoxy)

- 1.2. **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 foreign iron and steel products**, including delivery, does not exceed 0.1% of the total Contract cost or \$2,500, whichever is greater. **The Contractor must provide documentation showing under threshold in advance for the 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 the Engineer's approval.**

- 1.3. **Buy Texas.** For construction or maintenance Contracts without federal funds, buy materials produced in Texas when the materials are available at a comparable price and in a comparable period of time. Provide documentation of purchases or a description of good-faith efforts on request.

- State Buy America provision included in 2024 specification.
  - Moved waiver/allowances for foreign iron or steel products to new section.
  - Alternative Bidding for foreign iron or steel products needs to be handled through Special provision if pursued by the Designer.



## 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

Material Classification based on its status at time it arrives at the work site.

Clarified any Iron or Steel requires certification.

New Classification – Section C materials

Minor Additions still count statement

- Fiber Optic Cable (including drop cable)
- Optical fiber,
- Engineer Wood





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.

Certification requirements are now specifically called out.

Manufactured Products Still Exempt



- 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.



## Exceptions

1. Added 1 additional waiver.
2. Clarified existing waiver and applicability.

## Waivers

1. **Construction Materials is no more than 1 million or 5% of Total Applicable Cost.**
  - Total Applicable Cost driven by OMB guidance. Means cost of all Buy America required materials.
  - Documentation must be shown in advance for Engineer's consideration.

# Item 6 – Control of Materials



## 4. SAMPLING, TESTING, AND INSPECTION

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

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- If the Contractor chooses a Department-selected CL for any sampling and testing as shown in Table 1:
  - 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 hr. notice by telephone and email;
  - reimburse the Department for CL testing shown in Table 1 using the Contract fee schedule for the CL (including mileage and travel and standby time) at the minimum Guide Schedule of Sampling and Testing (Guide Schedule) testing frequencies;
  - reimburse the Department for CL testing shown in Table 1 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 on a policy regarding notification for testing services;
  - give any cancellation notice to the Engineer, District Lab, and CL by telephone and email;
  - reimburse the Department a \$150 cancellation fee to cover technician time and mileage charges for previously scheduled work canceled without adequate notice that resulted in mobilization of technician 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 turnaround times shown in Table 1, testing charges 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, and not as the result of failing tests, will be paid by the Department.

Other project-level Guide Schedule sampling and testing not shown in Table 1 will be the Department's responsibility.

**Table 1**  
Select Guide Schedule Sampling and Testing

Department Test	Test Description	Turn-Around Time (Calendar days)
<b>SOILS/BASE</b>		
Tex-101-F	Preparing Soil and Flexible Base Materials for Testing (included in other tests)	
Tex-104-F	Liquid Limit of Soils (included in 106-F)	
Tex-105-F	Plastic Limit of Soils (included in 106-F)	
Tex-106-F	Calculating the Plasticity Index of Soils	7
Tex-110-F	Empirical Site Analysis of Soils	6
Tex-113-F	Moisture-Density Relationship of Base Materials	7
Tex-114-F	Moisture-Density Relationship of Subgrade and Embankment Soil	7
Tex-115-F	Field Method for In-Place Density of Soils and Base Materials	9
Tex-116-F	Ball Mill Method for the Disintegration of Flexible Base Material	9
Tex-117-F, Part I	Triaxial Compression Tests for Disturbed Soils and Base Materials (Part I)	9
Tex-117-F with Tex-117-F	Moisture-Density Relationship of Base Materials with Triaxial Compression Tests for Disturbed Soils and Base Materials (Part II)	10
Tex-140-F	Measuring Thickness of Pavement Layer	2
Tex-145-F	Determining Sulfate Content in Soils – Colometric Method	4
<b>HOT MIX ASPHALT</b>		
Tex-200-F	Sieve Analysis of Fine and Coarse Aggregate (dry, from ignition oven with known correction factors)	11
Tex-205-F	Sand Equivalent Test	3
Tex-207-F with Tex-207-F, Part I with Tex-227-F	(Lab-Molded Density of Production Mixture – Superpave Gyration) Method of Comparing 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	11
Tex-207-F, Part I	(In-Place Air Voids of Roadway Course)	11

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Department Test	Test Description	Turn-Around Time (Calendar days)
and/or Part VI	Density of Compacted Bituminous Mixtures, Part I, "Bulk Specific Gravity of Compacted Bituminous Mixtures" and/or Part VI, "Bulk Specific Gravity of Compacted Bituminous Mixtures Using the Vacuum Method"	
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)	11
Tex-241-F with Tex-207-F, Part I with Tex-227-F	(Lab-Molded Density of Production Mixture – Superpave Gyration) Superpave Gyration Compacting of Specimens of Bituminous Mixtures (production mixture) with Density of Compacted Bituminous Mixtures, Part I, "Bulk Specific Gravity of Compacted Bituminous Mixtures" with Theoretical Maximum Specific Gravity of Bituminous Mixtures	11
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-290-F	Flat and Flaked Particles	3
Tex-530-C	Effect of Water on Bituminous Paving Mixtures (production mix)	4
<b>AGGREGATES</b>		
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-451-A	Degradation of Coarse Aggregate by Micro-Deval Abrasion	5
<b>CHEMICAL</b>		
Tex-612-I	Acid Insoluble Residue for Fine Aggregate	4
<b>GENERAL</b>		
	HMA Production Specialist (TxAPA – Level 1-A) (5/hr)	
	HMA Roadway Specialist (TxAPA – Level 1-B) (5/hr)	
	Technician Travel/Standby Time (5/hr)	
	Per Diem (\$3/day – meals and lodging)	
	Mileage Rate (\$/mile from closest CL location)	

- Turn-Around Time includes test time and time for travel/sampling and reporting.
- These tests require turn-around times meeting the governing specifications. Provide test results within the stated turn-around time. CL is allowed 1 additional day to provide the signed and sealed report.

- Included 2014's SP006-001 allowance for Commercial labs.



## 5. PLANT INSPECTION AND TESTING

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

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

- cooperate fully and assist the Engineer during the inspection,

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

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

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

- Added clarification to respective bid items for “504 Field Office and Laboratory” and “Equipment for asphalt concrete pavement.”



## 10. HAZARDOUS MATERIALS

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

~~The 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~~

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~~Contractor, except for paint removal associated with Item 446, "Field Cleaning and Painting Steel," Item 776, "Metal Rail Repair," and Item 784, "Steel Member Repair." The plans will indicate locations where paint on steel is suspected to contain hazardous materials. 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 ~~be contaminated~~ contain hazardous materials. The work required to comply with this section ~~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. Paint-containing coatings on existing steel contain hazardous materials will be removed as shown on the plans.~~

~~10.1.1. Paint Removed by Third Party. The Department will provide a third party to remove paint-containing hazardous materials where paint must be removed to perform work when dismantling steel under Item 496, "Removing Structures."~~

~~10.1.2. Paint Removed by the Contractor. This work may only be performed by a firm or company with one of the following certifications unless otherwise shown on the plans:~~

- ~~• SEPC QP3 Category A certification for lead-painting operations, or~~
- ~~• Certified Lead Firm by the Texas Department of State Health Services.~~

~~Maintain certifications for the duration of the Contract. Provide copies of audits and certification to the Engineer.~~

~~Comply with worker and public safety regulations including but not limited to 29 CFR Parts 1910, 1926, and 1926. Monitor permissible exposure limits in accordance with OSHA requirements.~~

~~Remove paint containing hazardous materials from designated areas shown on the plans or as directed by the Engineer. Comply with access limitations shown on the plans.~~

~~Provide power hand tools, equipped with high efficiency particulate air filter vacuums to mechanically remove paint unless otherwise approved.~~

~~10.2.1. Contain, collect, store, transport, and dispose of all waste generated by cleaning operation in accordance with local, state and federal requirements including 40 CFR 990. Properly characterize and dispose of all wastes. Manage wastes in accordance with regulatory requirements and dispose in a facility authorized to accept such wastes. Provide copies of disposal manifests to the Engineer ~~steel coated with paint containing hazardous materials in accordance with the following.~~~~

~~10.1.1. Refer to Removing Paint from Steel. For contracts that are specifically for painting steel, include the cleaning and painting of steel under Item 446, "Field Cleaning and Painting Steel" for measurement and payment 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 before or during the Contract. Remove paint covering existing steel shown not to contain hazardous materials in accordance with Item 446.~~

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~~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. Use Department-cleaned locations for dismantling when provided or provide own means of dismantling at other locations.~~

~~Painted steel will be disposed ~~obtained 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. If the paint contains hazardous materials, 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 conformance with federal, state, and local regulations.~~

~~Refer to Item 496, "Removing Structure" and Item 497, "Sale of Salvageable Material" for measurement and payment.~~

~~10.2. Asbestos Requirements. The plans will indicate locations or elements where asbestos-containing materials (ACM/ACMs) are known to be present. Where ACMs are known to exist or where previously unknown ACM has been found, the Department will arrange for abatement by a separate contractor before 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 Texas Department of State Health Services (DSHS), Asbestos Programs Branch, is responsible for administering the requirements of the National Emissions Standards for Hazardous Air Pollutants, (NESHAP) in accordance with 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, ~~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.~~

~~10.2.1. Asbestos Removed by Third Party. At locations where unknown ACM is discovered, the Department will arrange for abatement by a third party.~~

~~10.2.2. Asbestos Removed by the Contractor. Maintain certification as Asbestos or Lead Abatement Contractor by the Texas Department of State Health Services for the duration of the Contract. Provide copies of audits and certification to the Engineer.~~

~~10.2.3. Work Performed by a Third Party. When the work for removal of paint or asbestos abatement is to be provided by a third party, traffic control as shown on the plans, and coordinate and cooperate with the third party and the Department. Continue other work detailed in the plans for managing or removing hazardous materials. Work for the traffic control shown on the plans and coordination work will not be paid for directly involved in the paint removal or asbestos abatement work. Provide notice to the Department regarding the progress of the work to allow the Department sufficient time to schedule the third party work, but will be subsidiary to pertinent items.~~

- Hazardous Material section was rewritten to match existing SP006-012.





**2. SAFETY**

2.1. **Safety Point of Contact.** Designate, in writing, a Contractor Safety Point of Contact (CSPOC). The Department will assign a Department employee for their point of contact designated as DSPOC. The CSPOC will ensure Contract requires that the Contractor's and Subcontractor's employees' subcontractor's employees use the appropriate personal protective equipment (hard hats PPE) (e.g., hardhats, safety vests, and protective toe footwear, etc.) to meet regulations.

The CSPOC Contractor will ensure require that crew leaders and foremen (including subcontractors) have attended the required training.

2.4. **Public Safety and Convenience.** Ensure in accordance with the Contract and as directed, provide for 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.

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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.

Store all equipment not in use in a manner and at locations that will not interfere with the safe passage of traffic.

If the Engineer determines that any of the requirements of this Article have not been met, the Engineer may take corrective action. This will not change the legal responsibilities set forth in the Contract. The cost to the Department for this work will be deducted from any money due or to become due to the Contractor.

- Clarified that contractor and subcontractor's employees use appropriate protective equipment.
- Contractor Safety Point of contact is still required. Clarified responsibility is on the Contractor.
- SP007-010 included coordination of highway closures during dates shown on plans or as directed.

# Item 7 – Legal Relations and Responsibilities



- Included existing SP 007-011; This SP address training requirements.

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. ~~Before beginning work, provide~~Certify to the Engineer that all flaggers will be trained and make available upon request a list of flaggers ~~certified~~trained to perform flagging duties.

2.6.5. **Training.** ~~Workers~~Train workers involved with the traffic control ~~must be trained using~~ Department-approved training, ~~except in as shown on the case of Section 7.2.6.4, "Other Work Zone Personnel" who may be trained using Contractor-developed~~ Traffic Control Training in lieu of Department-approved Training ~~MPL.~~

~~Provide~~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 specified 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 will be 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, ~~except in the case of Contractor-developed Training. Ensure the~~ The certification of completion includes the following:

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

~~For/Where~~ ~~Contractor-developed Training 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~~Provide a log that is legible and includes the following:

- ~~print~~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 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. **Other Contractor-Developed Training for Other Work Zone Personnel.** ~~For other work zone personnel, the Contractor may provide training meeting the curriculum described below instead of Department-approved training.~~

Minimum curriculum for Contractor-provided training is as follows.

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Contractor-developed training must provide information on the use of PPE, 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.

- Adopt a company safety motto: "The Life You Save May Be Your Own," or similar.
- Purpose of the training includes the following.

- "It's the Law."
- Make work zones safer for workers and motorists.
- Understand what is needed for traffic control.
- Save lives including your own.

- Personal and co-worker safety includes the following.

- 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; and 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; maintaining 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. It is not safe to sit on or lean against a concrete barrier, these barriers can deflect 4 ft. or more when struck by a vehicle.
- Look out for each other and 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.

- Nighttime Operations. Focus on projects with a nighttime element.

- Traffic Control Training. Basics of traffic control include the following.

- 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 undamaged condition. If devices have been hit but not damaged, return them to their correct place and report to the traffic control supervisor. If devices have been damaged, replace with new devices and report to the traffic control supervisor. If devices are dirty, faded, or have missing or damaged reflective tape, clean or replace them and report to the traffic control supervisor. Show examples of unacceptable 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 must slant in the direction in which you want traffic to stay or move; 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 the traffic control supervisor or other as designated.



## 7. PRESERVATION OF CULTURAL AND NATURAL RESOURCES AND THE ENVIRONMENT

Project-specific information pertinent to cultural and natural resources is included in the plan set in the General Notes and on the Environmental Permits, Issues, and Commitments (EPIC) sheet. Adhere to all guidance, Best Management Practices (BMPs), and permits shown on the plans. Signing the Contract certifies compliance with all applicable laws, rules, and regulations pertaining to the preservation of cultural resources, natural resources, and the environment as issued by the following or other agencies.

- OSHA
- TCEQ
- Texas Department of Transportation
- Texas Historical Commission
- Texas Parks and Wildlife Department
- Texas Railroad Commission
- U.S. Army Corps of Engineers (USACE)
- U.S. Department of Energy
- U.S. Department of Transportation
- EPA
- Federal Emergency Management Agency
- U.S. Fish and Wildlife Service

7.2. **Protected and Imperiled Species and Wildlife.** Cease all work immediately and within 50 ft. if a protected or imperiled species, or any species assumed to be protected or imperiled, or wildlife is encountered onsite. Allow any animals to leave the area. Do not kill any wildlife. Contact Department environmental staff to investigate and evaluate any species or wildlife issues.

7.3. **Migratory Birds.** Bird and nest removal must not occur during vegetation clearing, construction, or maintenance activities on structures where birds or nests are present during the nesting season, as shown on the plans. If work will occur during the nesting season, measures to prevent nest establishment must be used before the start of nesting season or any activity. Contact Department environmental staff for assistance with birds and nests.

- Added new as an intro to section.
  - follow guidance, BMPs, permits, laws, rules and regulations.
  - List of Agencies moved to this section.
- 7.7.2 new;
  - Cease work within 50ft of wildlife, Allow animals to leave the area and do not kill them. Contact District staff to investigate and evaluate any wildlife issues.
- 7.7.3 No Change; Added Migratory Birds requirement to specification.



# Item 7 – Legal Relations and Responsibilities



7.4.1. Projects with Less than 1 Acre of Soil Disturbance Including Required Associated Project Specific Locations (PSLs) in Accordance with TPDES Construction General Permit (CGP) No. TXR150000. No construction site notice (CSN) posting will be required for soil disturbances within the right of way. Adhere to the requirements of the SWP3 and environmental layout as shown on the plans.

7.4.2. Projects with 1 Acre but Less than 5 Acres of Soil Disturbance Including Required Associated PSLs in Accordance with TPDES CGP No. TXR150000. The Department will and the Contractor will operate under a shared SWP3 for portions of the project in the right of way.

The Department will be considered the primary operator with operational control over plans and specifications as defined in TPDES CGP No. TXR150000 for construction activity in the right of way. The Department will post a small CSN and follow other requirements as defined in TPDES CGP No. TXR150000 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 the primary operator with day-to-day operational control as defined in TPDES CGP No. TXR150000 for construction activity in the right of way. In addition to the Department's actions, the Contractor will post a small CSN and follow other requirements as defined in TPDES CGP No. TXR150000 as the entity 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 CGP No. TXR150000 requirements for on-right-of-way and off-right-of-way PSLs. The Contractor will adhere to all requirements of the SWP3 and environmental layout as shown on the plans. The Contractor will be responsible for implementing the SWP3 for the project site as shown on the plans, in conformance with specifications, in accordance with TPDES CGP No. TXR150000, and as directed. Notification to Municipal Separate Storm Sewer System (MS4) operators (when applicable) upon project initiation and completion must be provided in accordance with TPDES CGP No. TXR150000 requirements. A signed copy of the small CSN will be provided to MS4 operators (where applicable) at least 2 days before commencing construction.

With the Engineer's concurrence upon the completion of soil disturbing activities and achieving permanent stabilization of 70% native background vegetation cover, the CSN may be removed.

7.4.1-7.4.3. Projects with 5 Acres or More of Soil Disturbance Including Required Associated PSLs in Accordance with TPDES CGP No. TXR150000. The Department and the Contractor will operate under a shared SWP3 for portions of the project in the right of way. The Department will be considered the primary operator with operational control over plans and specifications as defined in TPDES CGP No. TXR150000 for construction activities in the right of way. The Department will post a large CSN and file the Notice of

- Existing SP007-004; Co-permit requirements

- Existing SP506-005;
- Training Certificates available upon request

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Intent (NOI) and the Notice of Change (NOC), if applicable; and Notice of Termination (NOT), along with other requirements in accordance with TPDES CGP No. TXR150000, as the entity having operational control over plans and specifications for work shown on the plans in the right of way. Adhere to all requirements of the SWP3.

The Contractor will be considered the primary operator for day-to-day operational control as defined in TPDES CGP No. TXR150000 for construction activities in the right of way. In addition to the Department's actions, the Contractor will file an NOI; NOC, if applicable; and NOT and post a large CSN along with other requirements as the entity 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 CGP No. TXR150000 requirements for on-right-of-way and off-right-of-way PSLs. Adhere to all requirements of the SWP3 and environmental layout as shown on the plans.

7.4.3.1. Notice of Intent (NOI). Contractor will submit an NOI to TCEQ in accordance with TPDES CGP No. TXR150000 requirements. NOI must be submitted at least 7 days before commencement of construction activities at the project site. Contractor must file NOI under the same Regulated Entity Number (REN) as the Department. Provide a signed copy to the Engineer and any other MS4 operators (where applicable) at the time of submittal. The Department will submit their NOI before Contractor submission and will provide a copy for Contractor's use in completing the Contractor's NOI form.

7.4.3.2. Notice of Change (NOC). Upon concurrence of the Engineer, submit an NOC to TCEQ within 14 days of discovery of a change or revision to the NOI as required by the CGP. Provide a signed copy of the NOC to the Engineer and any other MS4 operators (where applicable) at the time of submittal.

7.4.3.3. Notice of Termination (NOT). Upon concurrence of the Engineer, submit an NOT to TCEQ within 30 days of the Engineer's approval that 70% native background vegetative cover is met or equivalent permanent stabilization has been employed in accordance with TPDES CGP No. TXR150000. Provide a signed copy of the NOT to the Engineer and any other MS4 operators (where applicable) at the time of submittal.

7.4.4. Training. All Contractor and subcontractor employees involved in soil disturbing activities, small or large structures, stormwater control measures, and seeding activities must complete training as prescribed by the Department.

Training is provided by the Department at no cost to the Contractor and is valid for 3 yr. from the date of completion. The Engineer may require the following training at a frequency less than 3 yr. based on environmental needs:

- "Environmental Management System: Awareness Training for the Contractor" (English and Spanish) (approximate running time 20 min.)
- "Stormwater: Environmental Requirements During Construction" (English and Spanish) (approximate running time 20 min.)

In addition to the standard training requirements, the Contractor Responsible Person—Environmental (CRPE), alternate CRPE designated for emergencies, and Contractor's superintendent must enroll in and complete the training listed on the Department Environmental Management System training matrix and maintain and make available upon request the certificate of completion. Training is provided by a third party and is valid for 3 yr. from the date shown on the certificate of completion. Training and associated fees will not be paid for directly, but will be subsidiary to Item 506, "Temporary Erosion, Sedimentation, and Environmental Controls."



~~7.7~~ ~~Work~~ ~~Over the over~~ ~~Recharge or Contributing Zone of Protected Aquifers~~. Make every reasonable effort to minimize the degradation of water quality resulting from impacts relating to work over the recharge or contributing zones of protected aquifers, as defined and delineated by ~~the~~ TCEQ. Use ~~best management practices~~ BMPs and perform work in accordance with ~~the~~ Contract requirements.

~~Project-Specific Locations~~. For all ~~project-specific locations~~ (PSLs) on or off the right of way (e.g., material sources, waste sites, parking areas, storage areas, field offices, staging areas, ~~and~~ haul roads, ~~etc.~~), ~~signing the Contract certifies compliance~~, ~~comply~~ with all applicable laws, rules, and regulations pertaining to the preservation of cultural resources, natural resources, and the environment ~~as issued by the following or other agencies:~~

~~■ Occupational Safety and Health Administration,~~

~~■ Texas Commission on Environmental Quality,~~

~~■ in accordance with Section 7.7.1, "Cultural Resources." All subcontractors must also comply with applicable environmental laws, rules, regulations, Texas Department of Transportation,~~

~~■ Texas Historical Commission,~~

~~■ Texas Parks and Wildlife Department,~~

~~■ Texas Railroad Commission,~~

~~■ U.S. Army Corps of Engineers,~~

~~■ U.S. Department of Energy,~~

~~■ U.S. Department of Transportation,~~

~~■ U.S. Environmental Protection Agency,~~

~~■ U.S. Federal Emergency Management Agency, and~~

~~■ U.S. Fish and Wildlife Service.~~

~~All subcontractors must also comply with applicable environmental laws, rules, regulations, and requirements in the Contract, requirements in the Contract.~~ Maintain documentation of ~~certification~~ environmental compliance activities, including environmental consultant reports, ~~Contractor documentation on certification decisions and contacts~~, and correspondence with the resource agencies. Provide documentation upon request.

- No change; moved information to 1<sup>st</sup> section.





17.2.1. **Unreimbursed Repair.** Except for destruction (not reusable) due to Acts of God, reimbursement will not be made for repair of damage to the following temporary appurtenances, regardless of cause:

- signs,
- barricades, and
- ~~changeable message signs, and~~
- other work zone traffic control devices.

Crash cushion attenuators and guardrail end treatments are reimbursed in accordance with Section 7.17.2.2., "Reimbursed Repair." Truck-mounted attenuators, trailer attenuators, and portable changeable message signs are eligible for reimbursed repair in accordance with Section 7.17.2.2., "Reimbursed Repair." Reimbursement will only be made when the Engineer directs the placement of the device in a location other than what is depicted in the Contract and the Contractor is unable to seek reimbursement from third-party insurance.

Where the Contractor retains replaced appurtenances after completion of the project, the Department will limit the reimbursement to the cost that is above the salvage value at the end of the project.

17.4. **Detours.** The Contractor will be responsible for the cost of maintenance of detours constructed under the Contract, ~~unless~~ the failure or damage is due to one of the causes listed in Section 7.17.1., "Reimbursable Repair." The In addition, the Engineer may consider will reimburse the Contractor for repairs to detours when failures occur for reasons beyond the Contractor's control when determining reimbursement. Reimbursement will be made for repairs to detours constructed unless the failure was due to materials and workmanship. The Department will be responsible for the cost of maintenance of existing streets and roadways used for detours or handling traffic.

17.5. **Relief from Maintenance.** The Engineer may relieve the Contractor from responsibility of maintenance ~~as~~ outlined in accordance with this Section. This relief does not ~~release~~ release the Contractor from responsibility for defective materials or work or constitute final acceptance. The Engineer will direct the Contractor to remove advance warning signs upon issuance of relief from maintenance.

- TMAs and portable changeable message signs are eligible for reimbursement for repair if the location directed was not called for in the contract and Contractor is unable to seek reimbursement from third party.
- Reimbursement for repairs to detours is allowed if outside the contractor's control.
  - Recommend to document any unacceptable materials or workmanship in DWRs, emails, and/or meeting minutes.
- Advance warning signs to be removed upon relief of Maintenance.



## 19. PAYROLLS

~~Ensure that~~ Pay employees, ~~and~~ contract labor, ~~and any subcontractor's employees are paid at least no less than~~ the predetermined wage rates shown ~~on~~ in the Contract. Require that subcontractors pay no less than the predetermined wage rates shown in the Contract.

Payroll records must contain the information required by law. As an option, ~~form~~ Form WH-347, "Payroll," is provided by the U.S. Department of Labor.

Maintain payroll and related records during the course of the Contract and preserve these records for a ~~period of 3 years~~, following the completion of the Contract or as required by law.

19.1. ~~49.1~~ **Minimum Wage Requirements for Federally Funded Contracts.** Comply with the requirements of FHWA-1273, "Required Contract Provisions Federal-Aid Construction Contracts."

~~Submit~~ For construction contracts, submit electronic payroll records to the Engineer ~~in~~ using the ~~manner~~ prescribed by the ~~Department~~ Department's payroll system.

~~49.2~~ For federal-aid maintenance contracts, submit payroll records to the Engineer.

19.2. **Minimum Wage Requirements for State-Funded Contracts.** Comply with the requirements of 29 USC § 206 unless otherwise shown in the Contract.

~~Upon request~~ For construction contracts, submit electronic payroll records to the Engineer ~~in~~ using the ~~manner~~ prescribed by ~~Department's~~ Department's payroll system.

For State-funded maintenance contracts, submit payroll records to the Engineer upon request.

## 20. SECURITY INCIDENTS

~~49.3-20.1.~~ **Reporting of Security Incidents.** Immediately notify the Department's Cyber Security Operations Center (CSOC) via the Report Cybersecurity Incident form on [txdot.gov](http://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.

- Payrolls are required for Construction Projects and Federal aid maintenance contracts. Payrolls are required upon request for state funded maintenance contracts.

- New; Notification requirements for potential cybersecurity incident breach.
  - TxDOT reserves right to hold Contractor liable for all cost incurred by the Department



## 2. SUBCONTRACTING

 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 (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.

2.1. **Construction Contracts and Federally Funded Maintenance Contracts.** Perform work with own organization on at least 30% of the total original Contract cost (25% if the Contractor is a ~~Small Business~~ **Enterprisean SBE** on a wholly State- or local-funded Contract), excluding any specialty items as determined by the Engineer. Specialty items are those that require highly specialized knowledge, abilities, or equipment not usually available in the contracting firm expected to bid on the proposed Contract as a whole.

Specialty items will be shown on the plans or as determined by the Engineer. Bid cost of specialty items performed by subcontractors will be deducted from the total original Contract cost before computing the required amount of work to be performed by the Contractor's own organization.


The term "perform work with own organization" includes only:

- workers employed and paid directly by the Contractor or wholly owned subsidiary;
- equipment owned by the Contractor or wholly owned subsidiary;

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- rented or leased equipment operated by the Contractor's employees or wholly owned subsidiary's employees;
- materials incorporated into the work if the majority of the value of the work involved in incorporating the material is performed by the Contractor's own organization, including a wholly owned subsidiary's organization; and
- labor provided by staff leasing firms licensed under Chapter 91 of the Texas Labor Code for nonsupervisory personnel if the Contractor or wholly owned subsidiary maintains direct control over the activities of the leased employees and includes them in the weekly payrolls.

 Mobilization is not included in calculation of 30%.

When staff leasing firms provide materials or equipment, they are considered subcontractors. In these instances, submit staff leasing firms for approval as a subcontractor.

Copies of ~~cancelled~~**canceled** checks and certified statements may be required to verify compliance with the requirements of this Section.

- SP008-30; E-Verify Requirement

- Mobilization is not counted towards 30% calculation.



## 3. COMPUTATION OF CONTRACT TIME FOR COMPLETION

The number of working days is established by the Contract. For Contracts with work orders, the number of working days is established in each work order. Working day charges will begin when work begins as prescribed in Article 8.1., "Prosecution of Work." Working day charges will continue in accordance with the Contract.



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. The Department will not adjust the number of working days and milestones, if any, due to differences in opinion regarding any assumptions made in the preparation of the schedule or for errors, omissions, or discrepancies found in the Department's conceptual time determination schedule. 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.

3.1.3. **Seven-Day Workweek.** Working days will be charged Monday ~~through~~ Sunday, excluding national holidays, regardless of weather conditions or material availability. Work on national holidays ~~will~~ not be permitted without written permission of the Engineer. If work ~~is performed on any of these holidays~~ critical path activities requiring an Inspector to be present ~~are performed on any of these holidays~~, and weather or other conditions permit the performance of work for 7 hr. between 7:00 A.M. and 6:00 P.M., a working day will be charged.

3.1.4. **Standard Workweek.** Working days will be charged Monday ~~through~~ Friday, excluding national or ~~state~~ State holidays, if weather or other conditions permit the performance of the principal unit of work underway, as determined by the Engineer, for a continuous period of at least 7 hr. between 7:00 A.M. and 6:00 P.M., unless otherwise shown in the Contract. The Contractor has the option of working on Saturdays or ~~state~~ State holidays. Provide sufficient advance notice to the Engineer when scheduling work on Saturdays. Work on Sundays and national holidays ~~will~~ not be permitted without written permission of the Engineer. If work requiring an Inspector to be present ~~is~~ or critical path activities are performed on a Saturday, Sunday, or holiday, and weather or other conditions permit the performance of work for 7 hr. between 7:00 A.M. and 6:00 P.M., a working day will be charged.

## 4. TEMPORARY SUSPENSION OF WORK OR WORKING DAY CHARGES

The Engineer may suspend the work, wholly or in part, and will provide notice and reasons for the suspension in writing. Suspend and resume work only as directed in writing.

When part of the work is suspended, the Engineer may suspend working charges only when conditions not under the control of the Contractor prohibit the performance of critical path activities. When all of the work is suspended for reasons not under the control of the Contractor, the Engineer will suspend working day charges.

- Language added stating schedule work to prosecute the work within the number of working days in the contract.
- Removed statement stating TxDOT would not change days due to errors. These notification need to be brought up at the beginning of the project and the Engineer still decides on any ambiguities.
- Added days are charged if critical path activities are performed or an inspector is needed.
  - Added similar language to all applicable workweeks.





## 5. PROJECT SCHEDULES

- 5.4. **Activity Format.** For each activity on the project schedule, provide:
- a concise description of the work represented by the activity,
  - an activity duration in whole working days, and
  - code activities so that organized plots of the schedule may be produced.
- CPM schedules must also include the quantity of work and estimated production rate for major items of work. Provide enough information for review of the work being performed.
- Total float is defined as the amount of time (in whole days) that an activity can be delayed before impacting the project's completion date. Total float is a shared commodity between the Department and the Contractor.
- 5.5. **Schedule Types and Schedule Impacts.**
- 5.5.1. **Bar Chart.** Seven calendar days before the preconstruction meeting, prepare and submit a hard or electronic copy of the schedule using the bar chart method.
- 5.5.1.1. **Progress Schedule Reviews.** Update the project schedule and submit a hard or electronic copy when changes to the schedule occur or when requested.
- 5.5.2. **Critical Path Method.** Prepare and submit the schedule using the CPM. Submit an electronic copy to the Engineer within the timeframes specified. An electronic copy is defined as the scheduling software's native file, saved in a format acceptable to the Engineer. In all cases, an electronic format (.xer) of Primavera Project Planner and Enterprise Project Portfolio Management (P6) will be acceptable.
- 5.5.2.1. **Preliminary Schedule.** Seven days otherwise agreed for a later submission, 7 calendar days before the preconstruction meeting, submit both the plotted and an electronic copies copy of the project schedule showing activities beginning with the authorization date to begin work and including activities to be performed within the first 90 calendar days from the work start date.
- 5.5.2.2. **Baseline Schedule.** The baseline schedule will be considered the Contractor's plan to successfully construct the project within the timeframe and construction sequencing indicated in the Contract. Submit both plotted and electronic copies of the baseline schedule. Submit 2 When requested, submit two plots of the schedule: one organized with the activities logically grouped using the activity coding, and the other plot showing only the critical path determined by the longest path, not based on critical float.
- Develop and submit the baseline schedule for review within the first 45 calendar days from the work start date unless the time for submission is extended by the Engineer.

- Defined float and stating it is a shared commodity between the Department and the Contractor.
- Clarified schedule may be electronic.
- Stated CPM schedules are to be electronic and, in the format, acceptable to the Engineer. P6 is acceptable.
- Preliminary schedule may be submitted later than 7 days prior to precon if agreed to.
- Only an electronic copy of the project schedule is required. Plots will be upon request.





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5.5.2.3. **Progress Schedule.** Maintain and submit the project progress schedule monthly for use by both the Contractor and the Engineer. Submit ~~both the plotted and an~~ electronic copy as it will become an as-built record of the daily progress achieved on the project. If continuous progress of an activity is interrupted for any reason except non-work periods (such as e.g., holidays, weekend, or interference from temperature or precipitation), then the activity will show the actual finish date as that date of the start of the interruption and the activity will be broken into a subsequent activity (or activities, based on the number of interruptions) similarly numbered with successive alpha character as necessary. The original duration of the subsequent activity will be that of the remaining duration of the original activity. Relationships of the subsequent activity will match those of the original activity so that the integrity of the project schedule logic is maintained. Once established, the original durations and actual dates of all activities must remain unchanged. Revisions to the schedule may be made as necessary.

7. **DEFAULT OF CONTRACT**

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If any of these conditions occur, the Engineer will give notice in writing to the Contractor and the Surety of the intent to declare the Contractor in default. If the Contractor does not proceed as directed within 10 days after the notice, the Department will provide written notice to the Contractor and the Surety to declare the Contractor to be in default of the Contract. If the Contractor provides the Department written notice of voluntary default of the Contract, the Department may waive the 10-day notice of intent to declare the Contractor in default and immediately provide written notice of default to the Contractor and the Surety. Working Calendar day charges will continue until completion of the Contract. The Department may suspend work in accordance with ~~Section Article~~ 8.4., "Temporary Suspension of Work or Working Day Charges," to investigate apparent fraud or other unfixable conduct before defaulting the Contractor. The Contractor may be subject to sanctions under the TAC. A default may result in the application of remedial action by the Department.

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

7.2. **Wrongful Default.** If it is determined after the Contractor is declared in default, that the Contractor was not in default, the rights and obligations of all parties will be the same as if termination had been issued for the convenience of the public as provided in Article 8.8., "Termination of Contract." For consideration of wrong default, submit a written request to the Construction Division within 30 calendar days of receipt of notice of default.

- Stating Calendar day charges will continue until completion of the contract is an ambiguity in the contract. Working Day charges should remain the same after a default as in the contract.
- Added referral to PRC in the event of a default this has been the standard practice.
- no change; SP008-033: Wrongful default SP.



## 5. PROGRESS PAYMENTS

The Engineer will prepare a monthly estimate of the amount of work performed, including materials in place. Incomplete items of work may be paid at an agreed upon percentage approved by the Engineer. Payment of the monthly estimate is determined at the Contract item prices less any withholdings or deductions in accordance with the Contract. Progress payments may be withheld for failure to comply with the Contract.

It is the Department's intent to pay a Contractor for work through the last working day of the month; however, the use of early cut-off dates for monthly estimates 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.

## 6. PAYMENT FOR MATERIAL ON HAND (MOH)

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 that~~ 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 the Engineer's 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 are 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 2 days before but not later than the estimate cut-off 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.

- No change; SP009-010: MOH and estimate cut off.
  - Earliest cut off date for estimates is the 25<sup>th</sup> of the month.
  - Clarified cumulated cost under 1 bid item of at least \$1,000 for MOH.



## 7. PAYMENT FOR EXTRA WORK AND FORCE ACCOUNT METHOD

### 2024 Specifications

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When using Force Account Method, determine an estimated cost for the proposed work and establish labor and equipment rates and material costs. Maintain daily records of extra work and provide copies of these records daily, signed by the Contractor's representative, for the Department's verification by the Department. Request payment for the extra work no later than the 10th day of the month following the month in which the work was performed. Include copies of all applicable invoices. If the extra work to be performed has an estimated cost of less than \$10,000, submit for approval and payment an invoice of actual cost for materials, equipment, labor, tools, and incidentals necessary to complete the extra work. When added work requires mobilization that is exclusive to the added work, mobilization may be added to the force account invoice for payment.

7.1.4.3. **Standby Equipment Costs.** Payment for standby equipment will be made in accordance with Section 9.7.1.4., "Equipment," except that: "The 15% markup will be paid when standby is associated with extra work but will not be paid when standby is associated with damages."

7.1.4.3.1. **Contractor-Owned Equipment.** For Contractor-owned machinery, trucks, power tools, or other equipment:

- Standby will be paid at 50% (to remove operating cost) of the FHWA rental rates found in the Rental Rate Blue Book multiplied by monthly Equipment Watch rate after the regional and age adjustment factor and factors have been applied. Operating costs will not be allowed. Calculate the standby rate as follows.

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

- If an hourly rate is needed, divide the monthly Equipment Watch rate adjustment factor 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.

7.1.5. **Subcontracting.** An additional 5% of the actual invoice cost will be paid to the Contractor as compensation for administrative cost, superintendence, and profit.

7.1.6. **Law Enforcement Personnel.** An additional 5% of the actual invoice cost will be paid as compensation for administrative costs, superintendence, and profit.

7.1.7. **Railroad Flaggers.** An additional 5% of the actual invoice cost will be paid as compensation for administrative cost, superintendence, and profit.

- Added clarification; mobilization may be paid if exclusive to the added work.
- Corrected Standby equation. Mentioned Standby is allowed for extra work and not damages.
- Removed superintendence from subcontracting, law enforcement, and rail road flagger mark up. Superintendent will be added for reasonable time associated in coordination.





- **What is it?**

- New general provisions for materials contracts only (MMCs and TMCs)
- Items 1-9 no longer used for MMC/TMCs
- Went live November 2022 letting

- **What are the highlights?**

- Allows for up to 365 day contracts with 1 extension (or 2 extensions if contract is less 6 months or less)
- Contractor can charge TxDOT for demurrage; TxDOT can only charge contractor for actual damages
- Calendar days start within 30 days of letting
- Provisions for expedited work orders (48 hour or less response time)
- Pricing adjustments from Producer Price Index, only at extensions
- Bid bonds and insurance required, but no performance or payment bonds
- No special provision to item 4 in the contract for extensions since Item 10 already allows them via change order





# 2024 Spec Book Changes Item 100

Building the Texas Transportation System



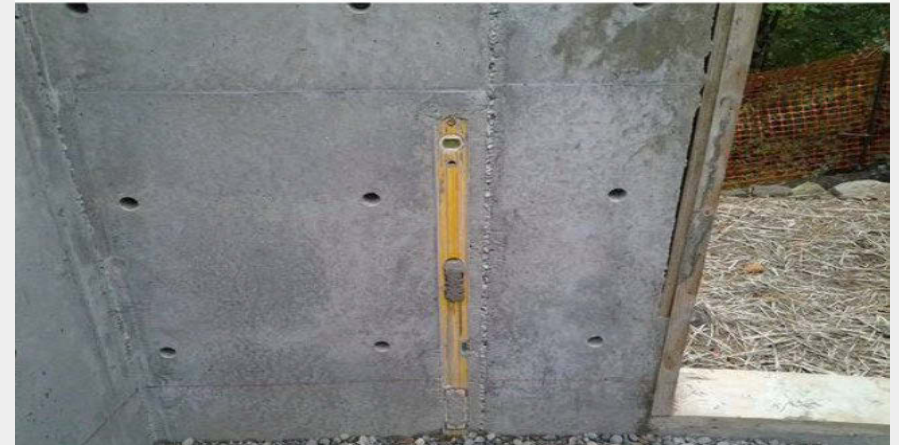


## Item 100s Changes

- 100 – Prep ROW
  - Tree protection standard bid item
  - Tree trim and prune work per Item 752
- 103 – Disposal of Wells
  - No significant changes
- 104 - Removing Concrete
  - No significant changes
- 105 – Remove Base and Asphalt
  - No significant changes to spec language
  - Created a range of pay items by SY.



Only the chosen one can  
remove the level from the stone







## Item 100s Changes

- 106 – Obliterating Roadway
  - Create ability to pay by SY
  - Adjectives revised
    - “uniform” replaced with “scarify and blend”
- 110 – Excavation
  - No significant changes



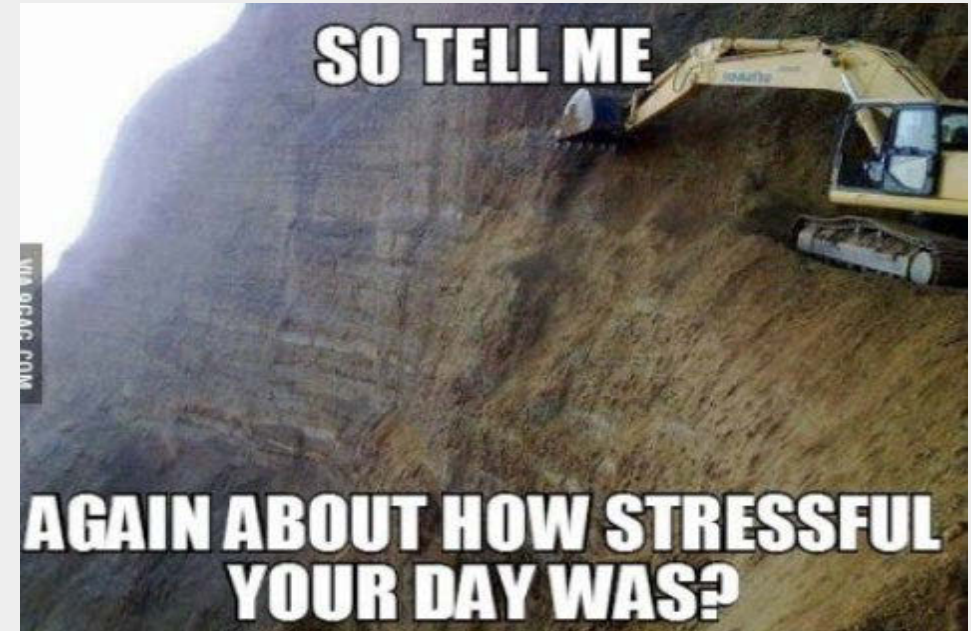
## Komatsu P&H L-2350 Loader







- 112 – Subgrade Widen
  - Create ability to pay by SY
  - Adjectives revised
    - “smooth vertical” replaced with “vertically uniform”
  - **General Notes and Plan Preparation**
    - Include a token quantity of embankment paid by the VEH in all jobs with Item 112 per Item 112.3.3
    - If run out of material or have an unbalanced phasing approach the VEH will pay contractor to bring in more material



- 3.3. **Widening.** Remove material in cut sections and move to fill sections within the project. Use material from cut sections for embankment. Place the material in fill sections in successive lifts to the line and grades shown on the typical sections. Provide additional embankment in accordance with the applicable bid item or Article 9.7., “Payment for Extra Work and Force Account Method,” if all excavation has been performed and additional embankment is required to complete the work.



## ■ 132 – Embankment

- Did not add intelligent compaction to standard
- Payment required for pavement that remains

When rework, removal, or scarification is required for existing pavement structure that will remain, it will be measured and paid for as shown on the plans for the appropriate type.

## – Use of random locations for density testing

- More random info during 200s presentation 😊

## – Proof rolling requires payment, as it did in 2014

- 2014 **When proof rolling is directed, it will be paid for in accordance with Item 216, "Proof Rolling."**

- 2024 **When proof rolling is directed, it will be paid for in accordance with Item 216.**

## – General Notes and Plan Preparation

- Recommend include a standard Type C material definition in the district's general notes.
- AUS maintains a consistent definition of Type C material for when a select fill is required.
- Use Type C1, C2, etc. for non typical materials.
- Include scarify or rework Item 251 for pavement that remains
- Include a token quantity of proof rolling in the estimate





# Item 100s Changes

- 134 – Backfill Pavement Edge
  - Create ability to pay by CY or LF
  - Default emulsion type to Item 300
    - Table 19 in Item 300.4
  - **General Notes and Plan Preparation**
    - Recommend include in all overlay projects
    - Recommend include a default emulsion rate in the district’s master general notes.
      - AUS uses 0.12 GAL/SY
    - Include a default Type A material definition in the district’s master general notes.
      - RAP, flexible base, reclaimed base, etc.

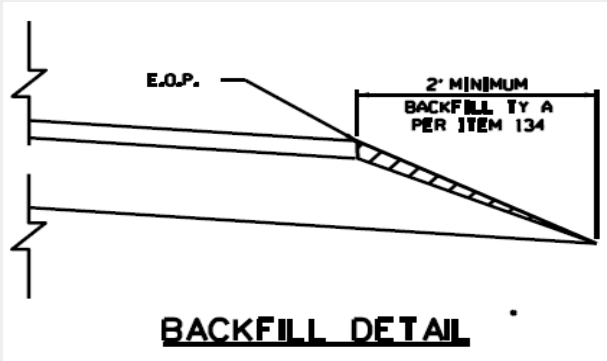


Table 19  
Typical Material Use

Material Application	Typically Used Materials
Hot-mixed, hot-laid asphalt mixtures	PG binders, A-R binder Types I and II
Surface treatment	PG 58-22, AC-15P, AC-20XP, AC-10-2TR, AC-20-5TR, HFRS-2, MS-2, CRS-2, CRS-2TR, CMS-2P, HFRS-2P, CRS-2P, CHFRS-2P, A-R binder Types II and III
Surface treatment (cool weather)	AC12-5TR, RC-250, MC-800, MC-3000, CMS-2P
Precoating	PG 58-22, 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, CSS-1H 50/50, CSS-1H 40/60, CSS-1H 30/70, CMS-1P
Hot-mixed, cold-laid asphalt mixtures	AC-0.6, AC-1.5, PG 58-22, CMS-2
Patching mix	MC-800, SCM I
Recycling	AC-0.6, AC-1.5, recycling agent, ARA-1, ARA-1P
Crack sealing	Polymer-modified AE crack sealant, asphalt-rubber crack sealers (Class A, Class B)
Microsurfacing	CSS-1P
Prime	MC-30, AE-P, AE-P 50/50, AE-P 40/60, AE-P 30/70, 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





## Item 100s Changes

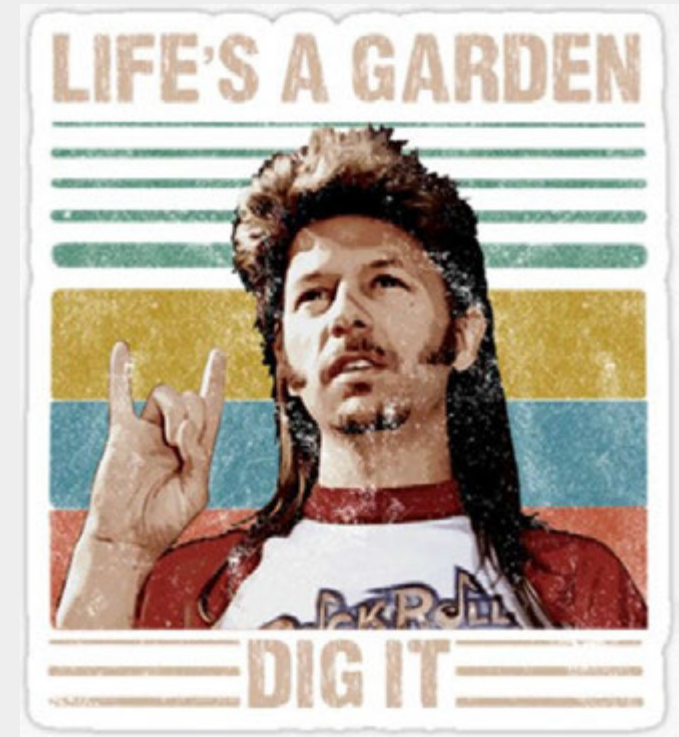
- 150 – Blade
  - No significant changes
- 152 – Road Grader
  - No significant changes
- 154 – Scraper
  - No significant changes
- 156 – Bulldozer
  - No significant changes
- 158 – Special Excavation
  - No significant changes





## Item 100s Changes

- 160 – Topsoil
  - Adjectives revised
    - “cultivate” replaced with “scarify”
  - **General Notes and Plan Preparation**
    - Testing beyond PH should be requested by district’s general notes
    - Some districts like to test for percent of organics
  
- 161 – Compost
  - No significant changes





# Item 100s Changes

- 162 – Sod
  - Adjectives revised
    - “cultivate” replaced with “scarify”
- 164 – Seed
  - Adjectives revised
    - “cultivate” replaced with “scarify”
  - New seed tables
  - Moving seeding season to Item 3.1
  - Broadcast seed requires 25% increase
  - Added notes regarding substitute when seeds are not available
  - **Table 5 for flower mix included with perm seed mix**



Use Tables 1–5 to determine the appropriate seeding mix and rates as shown on the plans. Include flower seeding mix in accordance with Table 5 with seeding mix shown in Table 1 and Table 2.

**Table 5  
Flower Seeding Mix**

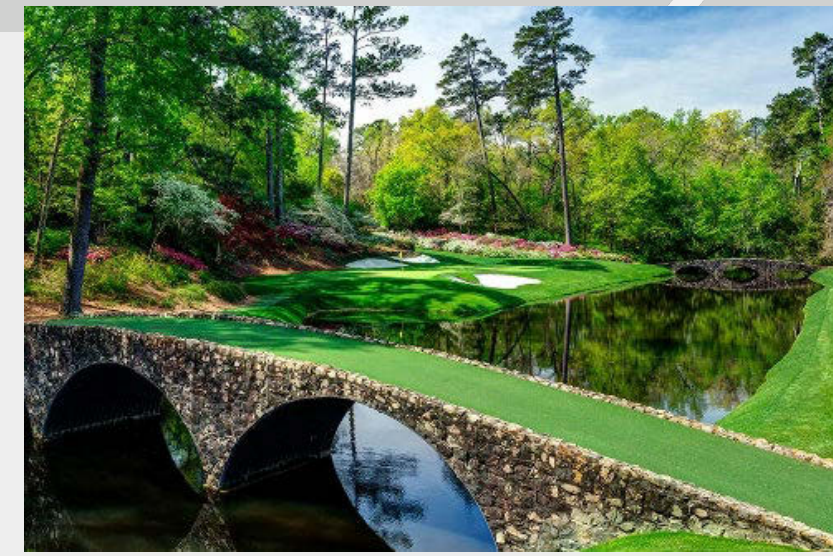
District	All Soils Species and Rates (lb. PLS per acre)
1 (Paris), 10 (Tyler), 11 (Lufkin), 12 (Houston), 17 (Bryan), 19 (Atlanta), 20 (Beaumont)	Herbaceous Mimosa (Crockett) 1.5
	Illinois Bundleflower (Sabine) 1.5
	Thickspike Gayfeather (Pineywoods) 1.5
	Purple Prairie Clover (Kaneb) 0.6
	Rio Grande Clammyweed (Zapata) 2.0
2 (Fort Worth), 3 (Wichita Falls), 4 (Amarillo), 5 (Lubbock), 6 (Odessa), 7 (San Angelo), 8 (Abilene), 9 (Waco), 18 (Dallas), 23 (Brownwood), 25 (Childress)	Engelmann Daisy (Eldorado) 1.5
	Awnless Bushsunflower (Plateau) 1.5
	Partridge Pea 1.5
	Illinois Bundleflower (Sabine) 1.5
	Rio Grande Clammyweed (Zapata) 2.0
13 (Yoakum), 14 (Austin), 15 (San Antonio), 16 (Corpus Christi), 21 (Pharr), 22 (Laredo), 24 (El Paso)	Indian Blanket (Fuego) 1.0
	Awnless Bushsunflower (Venado) 0.4
	Prostrate Bundleflower (Balli) 1.5
	Orange Zexmenia (Goliad) 0.4
	Rio Grande Clammyweed (Zapata) 2.0





# Item 100s Changes

- 166 – Fertilizer
  - No significant changes
- 168 – Watering
  - 1000 gallons is TGL, not MG







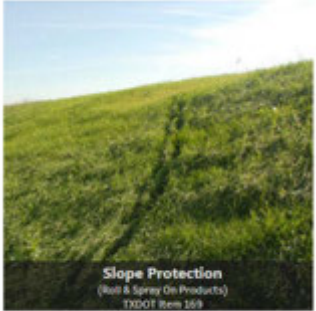
# Item 100s Changes

- 169 – Soil Blankets
  - New categories to products list
  - Added Wildlife category
  - Required to mow prior to install

0169-7035	SOIL RET BLKT(CHAN_TEMP_2 PSF_WLDLFE)
0169-7036	SOIL RET BLKT(CHAN_TEMP_4 PSF_WLDLFE)
0169-7037	SOIL RET BLKT(CHAN_PERM_2 PSF_WLDLFE)
0169-7038	SOIL RET BLKT(CHAN_PERM_4 PSF_WLDLFE)
0169-7039	SOIL RET BLKT(CHAN_PERM_6 PSF_WLDLFE)
0169-7040	SOIL RET BLKT(CHAN_PERM_8 PSF_WLDLFE)


Texas A&M Transportation Institute  
Interactive Approved Products List

Select Erosion Control Application



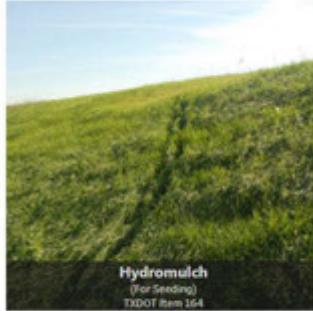
**Slope Protection**  
(Roll & Spray On Products)  
TXDOT Item 169

Approved roll (blanket) and spray on products



**Channel Protection**  
(Temporary & Permanent Products)  
TXDOT Item 169

Approved temporary and permanent channel products



**Hydromulch**  
(For Seeding)  
TXDOT Item 164

Products tested at a 4:1 slope (4:1V) and approved for hydroseeding on slopes 4:1 and flatter

- Champions Golf Club, Houston 1st hole, 445 yards, par 4
- Champions Golf Club, Houston 4th hole, 246 yards, par 3
- Champions Golf Club, Houston 5th hole, 499 yards, par 5
- Colonial Country Club, Fort Worth 5th hole, 466 yards, par 4
- Houston Country Club, Houston 5th hole, 413 yards, par 4
- Great Southwest Golf Club, Grand Prairie 3rd hole, 236 yards, par 3
- Municipal Golf Course, Austin 7th hole, 420 yards, par 4
- Preston Trail Golf Club, Dallas 16th hole, 428 yards, par 4
- Woodlake Golf Club, San Antonio 18th hole, 583 yards, par 5

0169-7017	SOIL RET BLKT(SL_MOD_CLAY_SHORT_SPRY)
0169-7018	SOIL RET BLKT(SL_MOD_CLAY_LONG_SPRY)
0169-7019	SOIL RET BLKT(SL_MOD_SAND_SHORT_SPRY)
0169-7020	SOIL RET BLKT(SL_MOD_SAND_LONG_SPRY)
0169-7021	SOIL RET BLKT(SL_STEEP_CLAY_SHORT_SPRY)
0169-7022	SOIL RET BLKT(SL_STEEP_CLAY_LONG_SPRY)
0169-7023	SOIL RET BLKT(SL_STEEP_SAND_SHORT_SPRY)
0169-7024	SOIL RET BLKT(SL_STEEP_SAND_LONG_SPRY)





## Item 100s Changes

- 170 – Irrigation System
  - Contractor to provide system design
  - Water consumed paid by department
  - Added a performance period
    - Ends 30 days after plant installation is complete
  - Added operation requirement
  - Created a 2-step payment structure for initial and final payment
    - 95% when installed
    - 5% when perform period complete

**Performance Period.** Operate and maintain each system for 30 days after plant installation is complete. Repair and maintain in accordance with Section 193.3.6., "Irrigation System Operation and Maintenance." This period will extend until repairs are completed.

**Operation.** Begin operation of each system after plant installation has begun. Operate the system until work is completed on the project. Inspect the system for proper operation, damage, and leaks every 3 mo. Adjust the irrigation schedule during inspection to provide proper soil moisture. Shut down the system and notify the Department if the system requires repairs.







## Item 100s Changes

- 180 – Wildflower Seeding
  - No significant changes
- 192 – Landscape Planting
  - Added 2014 special spec items to 2024
    - Tree Transplant
    - Loose Aggregate
    - Soil Amendment
  - Adjusted payment % for plants
    - 70%, 10%, 10%, 10%

**Initial Payment.** When the planting and installation of related materials are completed and approved, 70% of the unit price bid for each related plant will be paid.

**30-Day Payment.** When the first 30 days of the plant maintenance (in accordance with Section 192.3.17., Maintenance.) are completed and approved, an additional 10% of the unit price bid for each related plant will be paid, but if the maintenance is not completed and approved, this portion of the payment will be forfeited.

**60-Day Payment.** When the second 30 days of the plant maintenance are completed and approved, an additional 10% of the unit price bid for each related plant will be paid, but if the maintenance is not completed and approved, this portion of the payment will be forfeited.

**Final Payment.** After the final inspection and acceptance of the project or the completion of the 90-day maintenance, whichever occurs later, an additional 10% of the unit price bid for all plants will be paid, but if the maintenance is not completed and approved, this portion of the payment will be forfeited.

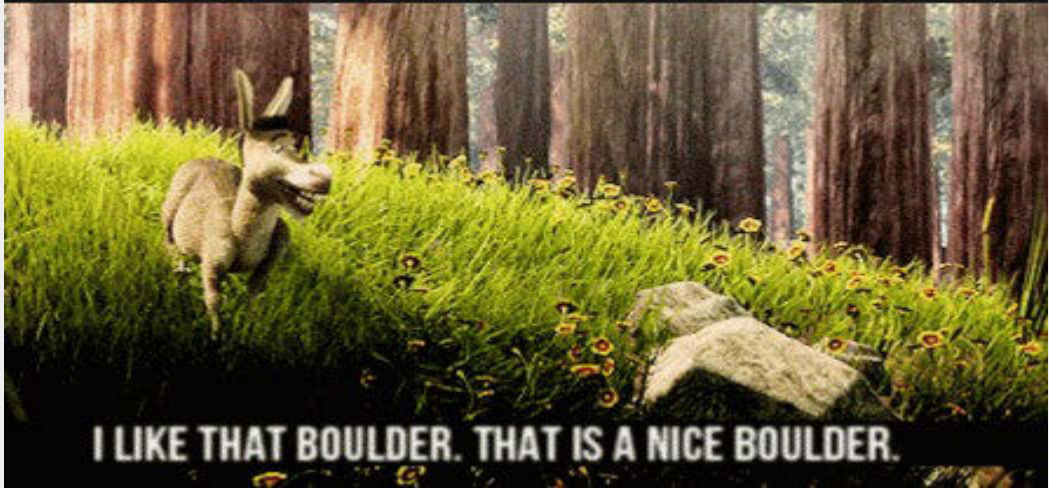
## PLANTS EVEN YOU CAN'T KILL





# Item 100s Changes

- 193 – Landscape Establishment
  - Water consumed paid by department
  
- 194 – Roadside Amenity
  - New for trash cans, benches, boulders, etc.
  - Avoid creation of special specification
  - **General Notes and Plan Preparation**
    - **Generic item requires notes and plans to detail the amenity.**



0194-7001	ROADSIDE AMENITY (INTERPRETIVE SIGN)	EA
0194-7002	ROADSIDE AMENITY (TRAIL HEAD SIGN)	EA
0194-7003	ROADSIDE AMENITY (PICNIC TABLE)	EA
0194-7004	ROADSIDE AMENITY (TRASH/RECYCLE BIN)	EA
0194-7005	ROADSIDE AMENITY (BENCH)	EA
0194-7006	ROADSIDE AMENITY (ADA PARKING SIGN)	EA
0194-7007	ROADSIDE AMENITY (WHEEL STOP)	EA
0194-7008	ROADSIDE AMENITY (WHEEL STOP REMOV&RESET)	EA
0194-7009	ROADSIDE AMENITY (GATE)	EA
0194-7010	ROADSIDE AMENITY (BOULDER)	EA
0194-7011	ROADSIDE AMENITY	EA
0194-7012	ROADSIDE AMENITY (TYPE 1)	EA
0194-7013	ROADSIDE AMENITY (TYPE 2)	EA





# 2024 Standard Specifications Changes 200 Series Items

Subgrade Treatments and Base







## Item 250 – Geogrid Base Reinforcement





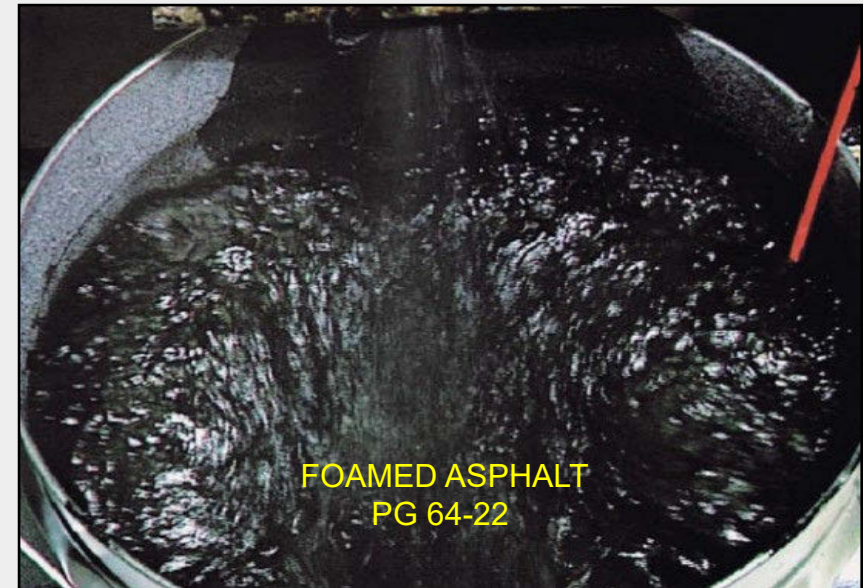


## Item 290 – Emulsified Asphalt Treatment (Road-Mixed)





## Item 291 – Foamed Asphalt Treatment (Road-Mixed)







## Item 295 – Ultra-High-Pressure Water Cutting Treatment





## 1. Item 263 – Lime Treatment (Plant-Mixed)

- *Two projects let under 2014 specification, both change ordered to zero quantity.*

## 2. Item 265 – Fly Ash or Lime-Fly Ash Treatment (Road-Mixed)

- *Eight projects let under 2014 specification.*
- *Latest project let 3/2021.*
- *Fly Ash supply is limited.*

# New - Random Density & Moisture Testing Locations



- Added to all embankment (soils) and base specification items.
- Provide the Engineer with the beginning and ending station numbers of the area completed.
- Engineer will determine the width, and the random testing locations in accordance with Tex-115-E, Part IV.
- When the density is less than the specification requirement, Engineer may perform additional testing to determine the extent of the area to correct.





- Added to all base specification items.
- *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 density testing but may be tested as directed.*





## 204, Sprinkling

- *Unit of Measure (UOM) will be referenced as TGL for 1,000 gallons.*
- *Addresses confusion from UOM of MG - Millie Gallons that has been mistaken for Mega Gallons.*

210, Rolling – *Editorial Only.*

216, Proof Rolling – *Editorial Only.*





Unconfined compressive strength for Grade 1-2 may be waived.

- *Unless otherwise shown on the plans, the unconfined compressive strength is waived when the flexible base material meets a #200 sieve requirement.*
- *#200 sieve requirement added to material requirements.*
- *When the #200 sieve requirement does not meet specification, the unconfined compressive strength is required.*



# Item 247 – Flexible Base



- #200 sieve requirement is only applicable to stockpile samples, 85 – 95% retained (5 – 10% passing).
- Compressive strength and #200 sieve requirements are waived when treating the flexible base with asphalt, cement, or lime, unless otherwise shown on the plans.
- Grade 3 may be substituted for Grade 1-2 or 5 only when treating with an additive. Must meet wet ball mill requirements of the substituted grade.

**Table 1  
Material Requirements**

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

1. The #200 sieve test is only required to meet the waiver of the unconfined compressive strength requirement. The #200 sieve test requirement is only applicable to stockpile samples from Section 247.2.4.
2. 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.
3. 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 as applicable.





## Recycled Materials

- *Removed language referencing ‘Department-Furnished’ recycled materials.*
- *Applies to recycled materials supplied by the Contractor when shown on the plans.*
- *Final product must meet requirements in Table 1 of material requirements for the grade specified except when the Department requires the use of Department-furnished RAP, unless otherwise shown on the plans.*





## Stockpile Approval

*New section added with two subsections.*

1. Sampling
2. Referee Testing.







## Sampling

- *Contractor and the Engineer will sample flexible base from completed stockpiles at the same time.*
- *Contractor will witness the Engineer's sampling and sample the stockpile for their own testing.*
- *Contractor may sample the stockpile for the Engineer when shown on the plans. The Engineer must witness the sampling.*







## Referee Testing

- *MTD is the referee laboratory and only applicable for stockpile testing.*
- *MTD may designate an approved laboratory as the referee laboratory as deemed necessary. Laboratory cannot be performing 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 and the Contractor's sample for the same failing Department test, passes.*





## Density and Moisture Control

- *Requirement for Contractor to measure moisture content and report the results the same day to the Engineer has been removed.*
- *Language has been added directed to the Contractor to maintain moisture during compaction within  $\pm 2.0\%$  of the optimum moisture content from the moisture-density curve.*





## Ride Quality

- *Reprofile 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.*





- Editorial changes.
- Miscellaneous and Small Areas.



Dry Application – *Quicklime*

Slurry Application – *Quicklime or Commercial Lime Slurry*

Carbide lime slurry removed, not used for any 2014 lettings.





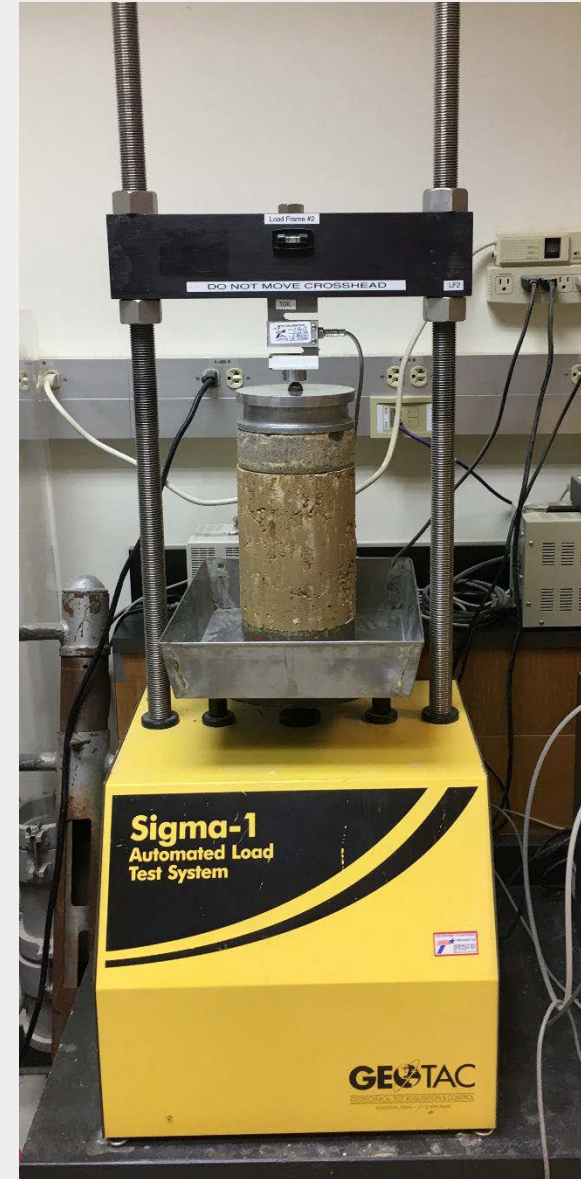
- Unconfined compressive strength of treated material.
  - ✓ *Greater than 50 psi for treated subgrade.*
  - ✓ *Greater than 150 psi for treated base or treated base mixed with existing material*
  - ✓ *Strength requirements may be different when shown on the plans.*
  
- When flexible base is added, strength of the stockpiled base is waived.



# Item 275 – Cement Treatment (Road-Mixed)



- Unconfined compressive strength of treated material must be greater than 150 psi, unless otherwise shown on the plans.
- When flexible base is added, strength of the stockpiled base is waived unless otherwise shown on the plans.





## Ride Quality

- *When shown on the plans, measurement of ride quality applies to final travel lanes with a one- or two-course surface treatment for the final riding surface.*
- *Same language as Item 247, Flexible Base.*



- *No changes to unconfined compressive strength requirements.*
  - ✓ *L – minimum 500 psi*
  - ✓ *M – minimum 300 psi*
  - ✓ *N – as shown on the plans.*
  
- *Strength of the stockpiled flexible base before mixing is waived unless otherwise shown on the plans.*





## Materials – Mixing Plant

- *Language and requirements from Item 520, Weighing and Measuring Equipment have been added.*
  - ✓ Equip plants with automatic proportioning and metering devices, **certified scales, and scale installations.**
  - ✓ Use belt scales for proportioning aggregate that are **accurate to within 1.0% based on the average of three test runs,** where no individual test run exceeds 2.0% from the average.
  - ✓ Provide personnel, facilities, and equipment for checking scales as approved. **Check all weighing and measuring equipment after each move and at least once every 6 mo. or when requested.**



## Microcracking

- *Only required when shown on the plans, not the default requirement.*
- *No changes to the requirements.*



# Item 292 – Asphalt Treatment (Plant-Mixed)



Harmonized language with Item 341 Hot-Mix Asphalt specification.

- *Additives, Antistripping & Warm-Mix Asphalt.*
- *Certification & Reporting*
- *Coring & Sampling*
- *Ignition Oven Correction Factors*
- *Measurement and Payment*
- *Miscellaneous Areas*
- *Recycled Materials*
- *Storage, Heating, Mixing, and Discharge of Materials*
- *Sampling Asphalt and Tack Coat Binders*
- *Tack Coat*





## Recycled Asphalt Pavement (RAP)

- *Unfractionated RAP removed.*
- *Fractionated RAP increased to 35%.*





## Mixture Design

- *Requires Tex-204-F, Part IV, Superpave mixture design procedure.*
- *Target laboratory-molded density from 96.0 to 97.0%.*
- *50 to 75 gyrations, may be changed within 35 to 100 gyrations when approved.*
- *Grade 3 revised to be applicable to 1” bond breaker mixtures.*
  - ✓ Finer gradation
  - ✓ Higher minimum asphalt content.



## Trial Batch Testing

*Engineer will sample and test within one full working day.*

- ✓ Asphalt Content
- ✓ Gradation
- ✓ Indirect Tensile Strength
- ✓ Laboratory-Molded Density







## Production Testing

- *Engineer will sample and perform production tests.*
- *Laboratory-molded density must be within  $96.0 \pm 1.0\%$ .*
- *Gradation of aggregate must be within 5% of the trial batch gradation and within master grading limits.*
- *Asphalt content cannot be less than the minimum asphalt content and not vary by more than 0.5% from the optimum asphalt content from the mixture design.*



## Placement Sampling - Coring

- *Random coring locations.*
- *Trimming, witnessing, and custody of cores the same as hot-mix asphalt specifications.*
- *Minimum untrimmed core height eligible for density testing is 1.75 in.*
  - ✓ Thin bond breakers not subject to coring and in-place air void requirements.



## Density Control

- *Contain 3.8 to 8.5% in-place air voids, unless otherwise shown on the plans.*
- *In-place air voids determined from roadway cores.*
- *Measured from the bulk specific gravity and theoretical maximum specific gravity (Rice gravity).*





Density Control – When air voids are not within acceptable range.

- *Take immediate corrective action.*
- *Engineer may suspend operations or allow Contractor to continue operations for no more than one day while taking corrective action.*
- *Suspend operations if in-place air voids are not within acceptable range within one full day of operation.*



Ride Quality is only required when shown on the plans using Surface Test Type A.

- *2014 specification requires Surface Test Type A unless otherwise shown on the plans.*



# 2024 Standard Specifications Changes 300 Series Items

Surface Courses and Pavements



- **Item 300, Asphalts, Oils, and Emulsions**
- **Item 310, Prime Coat**
- **Item 314, Emulsified Asphalt Treatment**
- **Item 315, Fog Seal**
- **Item 316, Seal Coat**





## ■ Asphalt Cement:

- Updated Solubility in Trichloroethylene to Solubility
- Updated 5-hr Polymer Separation to 48-hr test (Tex-540-C)
- Updated Viscosities for AC-0.6, AC-1.5
- Removed AC-3, AC-5, AC-10
- Removed Softening Point Test

**Table 2  
Asphalt Cement**

Property	Test Procedure	Viscosity Grade			
		AC-0.6		AC-1.5	
		Min	Max	Min	Max
Viscosity 140°F, poise 275°F, poise	T 202	40 0.4	80 -	100 0.7	200 -
Penetration, 77°F, 100g, 5 sec.	T 49	350	-	250	-
Flash point, C.O.C., °F	T 48	425	-	425	-
Solubility, %	T 44	99.0	-	99.0	-
Spot test	<a href="#">Tex-509-C</a>	Neg.		Neg.	
Tests on residue from RTFOT:	T 240				
Viscosity, 140°F, poise	T 202	-	400	-	1,000
Ductility, <sup>1</sup> 77°F 5 cm/min., cm	T 51	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.



- **Cutback Asphalt:**

- Updated Solubility in Trichloroethylene to Solubility
- Removed RC-800, RC-3000; MC-250; MC-2400L, SCM-II



## ■ **Emulsified Asphalt:**

- **Updated** Solubility in Trichloroethylene to Solubility
- **Updated** minimum Penetration limit matching AASHTO/ASTM standards
- **Updated** FDR EM-HY requirements (added sieve, cement mix, storage stability, etc. , removed rejuvenating agent requirement)
- **Removed** tests on rejuvenating agents (esp. CMS-1P, CMS-2P, FDR EM-HY)
- **Removed** AES-300, AES-150P, AES-300P, AES-300S, SS-1P (Anionic Emulsions); CRS-2H and CMS-2S (Cationic Emulsions)



## ■ Emulsified Asphalt:

- **Added** dilution options 50/50, 40/60, 30/70 (%Emulsion to %Water)
- *Suppliers will be getting related QM lab numbers following Tex-545-C.*

**Table 12**  
Cationic Diluted Emulsified Asphalt

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.	T 59	30	-	24	-	18	-
Oil distillate, % by volume of emulsion		-	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 12A**  
Diluted Specialty Emulsions

Property	Test Procedure	Type-Grade					
		Diluted Slow-Setting					
		AE-P 50/50		AE-P 40/60		AE-P 30/70	
		Min	Max	Min	Max	Min	Max
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.	T 59 and T 78	20	-	16	-	12	-
Total oil distillate from both distillations, % by volume of emulsion		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





## ■ Performance-Graded Binders:

- Updated 5-hr Polymer Separation test to 48-hr test (Tex-540-C)
- Updated allowable maximum DSR PAV parameter [ $G^* \cdot \sin(d)$ ] from 5000 kPa to 6000 kPa as long as Phase Angle  $\geq 42$  deg.
- Removed reference to Item 340.



- **Removed** Reference to separate MPL for prime coat binders removed. Now it only allows Item 300 compliant materials to be used in prime coats.

2.1. **Binder.** Use material of the type and grade shown on the plans in accordance with Item 300, "Asphalts, Oils, and Emulsions," ~~or as listed in the Department's MPL for prime coat binders.~~



- **Removed** the reference to *Item 204, Sprinkling*.
- **Re-defined** Diluted Emulsion as a %volume-based mixture of Emulsion and Water.
- **Defined** how treatment is measured in terms of payment.

2.	<b>MATERIALS</b>  Furnish materials of the type and grade shown on the plans and in accordance with the following.
2.1.	<b>Emulsion.</b> Furnish emulsified asphalt in accordance with Item 300, "Asphalts, Oils, and Emulsions."
2.2.	<b>Emulsion and Water Mixture.</b> Dilute the emulsion by adding water to create a mixture containing a proportion of emulsion, expressed as a percentage of total volume, in conformance with the percentage shown on the plans or as directed.
5.	<b>MEASUREMENT</b>  <del>The treatment will be measured by the gallon of emulsified asphalt used in the emulsified asphalt and water mixture.</del>  The treatment will be measured by the gallon of emulsion at the specified dilution ratio. Material will be measured at the applied temperature by strapping the tank before and after road application. The distributor-calibrated strap stick will be used for measuring the emulsion and water mixture level in the distributor asphalt tank. The certified tank chart will be used to determine the beginning gallons and the final gallons in the distributor tank. The quantity to be measured for payment will be the difference between the beginning gallons and the final gallons.



- **Removed** the reference for water to *Item 204.2, Materials*.
- **Re-defined** Diluted Emulsion as a %volume-based mixture of Emulsion and Water.
- **Defined** how treatment is measured in terms of payment.

<b>2.</b>	<b>MATERIALS</b>
	Furnish materials of the type and grade shown on the plans in accordance with the following.
2.1.	<b>Emulsion.</b> Furnish emulsified asphalt in accordance with Item 300, "Asphalts, Oils, and Emulsions."
2.2.	<b>Emulsion and Water Mixture.</b> Dilute the emulsion by adding water to create a mixture containing a proportion of emulsion, expressed as a percentage of total volume, that meets the percentage shown on the plans or as directed.
<b>5.</b>	<b>MEASUREMENT</b>
	<del>The treatment will be measured by the gallon of emulsified asphalt used in the emulsified asphalt and water mixture.</del>
	The treatment will be measured by the gallon of emulsion at the specified dilution ratio. Material will be measured at the applied temperature by strapping the tank before and after road application. The distributor-calibrated strap stick will be used for measuring the emulsion and water mixture level in the distributor asphalt tank. The certified tank chart will be used to determine the beginning gallons and the final gallons in the distributor tank. The quantity to be measured for payment will be the difference between the beginning gallons and the final gallons.





- **Replaced** the reference for Item 340 to Item 341.
- Added SP316-002 (2019) S&T requirements as Section 4.8.5.

4.8.5.

**Sampling.** Collect all samples in accordance with [Tex-500-C](#) 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 the Materials and Tests Division (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.

- *Measurement of aggregate quantity in cubic yards “unless otherwise shown on the plans”*
- *“Hauling will be paid by force account work. Hauling of any aggregate to consolidate stockpiles at the end of the project when directed by the Engineer will be paid by force account work.”*



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- **Item 341, Dense-Graded Hot-Mix Asphalt**
- **Item 342, Permeable Friction Course**
- **Item 344, Superpave Mixtures**
- **Item 346, Stone-Matrix Asphalt**
- **Item 347, Thin Overlay Mixtures**
- **Item 348, Thin Bonded Friction Course**



- **Section within the Specification.** ~~Language that has been removed from the specification will be red and have a strike through.~~ New language that has been added to the specification will be highlighted yellow.

## Navigation Key





Fine Aggregate		
Linear shrinkage, %, Max	<a href="#">Tex-107-E</a>	3
Sand equivalent, %, Min	<a href="#">Tex-203-F</a>	45 <sup>3</sup>
<a href="#">Organic impurities</a>	<a href="#">Tex-408-A</a>	<a href="#">Note 4</a>
<p>1. Used to estimate the magnesium sulfate soundness loss in accordance with Section <del>341076</del> 2.1.1.2., "Micro-Deval Abrasion."</p> <p><del>2.</del> Only applies to crushed gravel.</p> <hr/> <p><del>2.</del> <a href="#">The Department may perform Tex-252-F on fine aggregates not meeting this minimum requirement. Fine aggregates with a methylene blue value of 10.0 mg/q or less below may be used.</a></p> <p>3.</p> <p><del>3.4.</del> <a href="#">Optional test.</a></p>		

- Note added to Sand Equivalent to allow Methylene Blue
- **Lime and Liquid Antistripping Agent.** ~~If stripping is observed during testing or during production, the Engineer may require the addition of lime or antistrip.~~ [Lime or liquid antistripping agent is required when shown on the plans.](#)



■ Surface, intermediate, and base mixes referenced in Tables 4 and 5 are defined as follows, unless otherwise shown on the plans:

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

\*SMA still designates surface and non-surface, however, “surface” definition has changed



**Table 4**

**Maximum Allowable Amounts of RAP<sup>1</sup>**

Maximum Allowable Fractionated RAP (%)		
Surface	Intermediate	Base
1520.0	2530.0	3035.0

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

**Table 5**

**Allowable PG Binders and Maximum Recycled Binder Ratios**

Originally Specified PG Binder	Allowable Substitute PG Binder for Surface Mixes	Allowable Substitute PG Binder for Intermediate and Base Mixes	Maximum Ratio of Recycled Binder <sup>1</sup> to Total Binder (%)		
			Surface	Intermediate	Base
76-22	70-22	70-22	10.0-15.0	20.0-25.0	25.0-30.0
70-22	Note 2	64-22	10.0-15.0	20.0-25.0	25.0-30.0
64-22	Note 2	Note 2	10.0-15.0	20.0-25.0	25.0-30.0
76-28	70-28	70-28	10.0-15.0	20.0-25.0	25.0-30.0
70-28	Note 2	64-28	10.0-15.0	20.0-25.0	25.0-30.0
64-28	Note 2	Note 2	10.0-15.0	20.0-25.0	25.0-30.0

1. Combined recycled binder from RAP and RAS. RAS is not permitted in surface mixtures unless otherwise shown on the plans.
2. No binder substitution is allowed.

■ Item 341

- Table 4: Increase in allowable RAP Bin by 5%
- Table 5: Increase in RBR by 5%

\*Keep in mind that surface definitions have changed, so your mix may now be considered intermediate as well



- Item 341

- **Design Requirements.** ~~A Texas Gyrotory Compactor (TGC) may be used when shown on the plans.~~ Design the mixture using a Superpave Gyrotory Compactor (SGC)

- Item 347

- **Design Requirements.** ~~The Contractor may design the mixture using a Texas Gyrotory Compactor (TGC) or a Superpave Gyrotory Compactor (SGC).~~ Design the mixture using a Superpave Gyrotory Compactor (SGC), and 50 gyrations as the design number of gyrations (Ndesign). Use a target laboratory-molded density of 96.0% to design the mixture; however, adjustments can be made to the Ndesign value as noted in Table 7. The Ndesign level may be reduced to a minimum of 35 gyrations at the Contractor's discretion.

\*TGC is no longer allowed. Currently only active in HMCL, LRA, Patching Mix





- Item 342
  - PFCR-F and PFCR-C have been removed from the specification
  - Exempt production removed
- Item 344
  - The “Restricted Zone” or “Reference Zone” has been removed from the specification
- Item 346
  - SMAR-C has been removed from the specification
- Item 347
  - Exempt production removed
- Item 348
  - PFCR-C has been removed from the specification
  - Exempt production removed



- **Design Requirements.** Use an approved laboratory from the Department's MPL to perform the Hamburg Wheel test and provide results with the mixture design or provide the laboratory mixture and request that the Department perform the Hamburg Wheel test. Use an approved laboratory from the Department's MPL to perform the Overlay test and provide results with the mixture design or provide the laboratory mixture and request that the Department perform the Overlay test.



■ Note 1 modification

- Historical language stated: When the rut depth is less than 3 mm, the “Engineer may require” the contractor to lower the gyrations to 35.
- New language: “The Hamburg Wheel Test will have a minimum rut depth of 2.5 mm”

**Table 10  
Hamburg Wheel Test Requirements**

High-Temperature Binder Grade	Test Method	Minimum # of Passes @ 12.5 mm <sup>1</sup> Rut Depth, Tested @ 50°C
PG 64 or lower	<a href="#">Tex-242-F</a>	10,000 <sup>2</sup>
PG 70		15,000 <sup>3</sup>
PG 76 or higher		20,000

1. ~~The Hamburg Wheel Test will have a minimum rut depth of 2.5 mm. When the rut depth at the required minimum number of passes is less than 3 mm, the Engineer may require the Contractor to lower the Ndesign level (SGC) to a minimum of at least 35 gyrations.~~
2. May be decreased to a minimum of at least 5,000 passes when shown on the plans.
3. May be decreased to a minimum of at least 10,000 passes when shown on the plans.



- Clarification of “The Engineer will be allowed 10 working days” throughout each specification.
  - Upon receiving the sample from the Contractor, the Engineer will be allowed 10 working days to provide... (Hamburg and Overlay results if applicable, for Design and Trial Batch)
- **Ignition Oven Correction Factors.**
  - No longer requires a Level 2 Technician to develop correction factors. A Level 2 must still batch and mix the samples, however, the ignition oven burn washed gradation, and correction factor determination can be performed by a Level 1A.
  - Based on a FHWA Stewardship review, TxDOT MUST witness the mixing and batching of correction factors.
    - New test method Tex-236-F, Part III





- **Ignition Oven Correction Factors.**

- Contractor:

Notify the Engineer prior to performing Tex-236-II. Allow the Engineer to witness the mixing of ignition oven correction factor samples.

If the Engineer witnesses the mixing of the ignition oven correction factor samples, provide the Engineer with identically prepared ~~split~~ samples of the mixtures...



- **Ignition Oven Correction Factors.**

- Engineer:

The Engineer can determine ignition oven correction factors by one of the following options:

- Witness the mixing of ignition oven correction factor samples by the Contractor in accordance with Tex-236-F, Part III. The Engineer will use the identically prepared samples provided by the Contractor to determine the aggregate and asphalt correction factors for the ignition oven in accordance with Tex-236-F, Part II.
- If the Engineer does not witness the mixing of ignition oven correction factor samples, the Engineer will prepare the samples to determine the aggregate and asphalt correction factors for the ignition oven in accordance with Tex-236-F, Part II.

Notify the Contractor prior to performing Tex-236-F, Part II. Allow the Contractor to witness the Engineer performing Tex-236-F, Part II.



- **Approval of Lot 1 Production.** The Engineer will authorize the Contractor to proceed with JMF2 for Lot 1 production after a passing Hamburg result on the trial batch is achieved from a laboratory listed on the Department's MPL. The Contractor may proceed at their own risk with Lot 1 production without the results from the Hamburg Wheel test on the trial batch. The addition of a WMA additive to facilitate mixing or as a compaction aid does not require a new laboratory mixture design, trial batch, or both. **Current JMF changes that exceed the operational tolerances of JMF2 in accordance with Table 9 may require a new laboratory mixture design, trial batch, or both.**

\*Note that table numbers will vary by specification



- **Production Operations.** Perform a new trial batch when the plant or plant location is changed. All asphalt source changes will require a passing Hamburg result from a laboratory listed on the Department's MPL. The Contractor may proceed at their own risk with Lot 1 production without the results from the Hamburg wheel test on the trial batch. All aggregate source changes will require a new laboratory mixture design and trial batch.
- **Placement Operations.** Collect haul tickets from each load of mixture delivered to the project and provide the Department's copy to the Engineer approximately every hour, or as directed. Use a hand-held thermal camera or infrared thermometer, when a thermal imaging system is not used, to measure and record the internal temperature of the mixture as discharged from the truck or Material Transfer Device (MTD) before or as the mix enters the paver. Measure the mixture temperature at a minimum frequency of one per ten trucks, or as approved by the Engineer.





## ■ Weather Conditions.

- Unless specified by general note, the following sentence was removed from all specifications: ~~“the Engineer may restrict the Contractor from paving surface mixtures if the ambient temperature is likely to drop below 32°F within 12 hr. of paving.”~~

## ■ Compaction.

- Add to all specifications: Complete all compaction operations with breakdown rollers before the pavement temperature drops below 180°F ~~160°F~~ unless otherwise allowed. Compaction with a pneumatic or light finish roller operated in static mode is allowed for pavement temperatures above 160°F. ~~The Engineer may allow compaction with a light finish roller operated in static mode for pavement temperatures below 160°F.~~
- Add to Item 347: Use Tex-246-F to test and verify that the compacted mixture meets the water flow requirements. Measure the water flow once per subplot at locations directed by the Engineer. The water flow rate should be greater than 120 sec. Investigate the cause of the water flow rate test failures and take corrective actions during production and placement to ensure the water flow rate is greater than 120 sec. Suspend production if 2 consecutive water flow rate tests fail unless otherwise approved. Resume production after the Engineer approves changes to production or placement methods. Take additional water flow measurements when the minimum temperature of the uncompacted mat is below the temperature requirements in Table 12.



■ Note 3 was modified for all specifications to allow 20°F instead of 10°F. Additional technology was also added to include:

- Chemical WMA additive as a compaction aid
- MTD with remixing capabilities
- Paver hopper insert with remixing capabilities

\*Note that this table and temperatures may differ slightly for each specification

**Table 156**  
**Minimum Mixture Placement Temperature**

High-Temperature Binder Grade <sup>1</sup>	Minimum Placement Temperature (Before Entering Paving Operation) <sup>2,3,4</sup>
PG 64	260°F
PG 70	270°F
PG 76	280°F

1. The high-temperature binder grade refers to the high-temperature grade of the virgin asphalt binder used to produce the mixture.
2. The mixture temperature must be measured using a hand-held thermal camera or infrared thermometer immediately before entering MTD or paver.
3. Minimum placement temperatures may be reduced 20°F if using a chemical WMA additive as a compaction aid, MTD with remixing capabilities, or paver hopper insert with remixing capabilities. Minimum placement temperatures may be reduced 20°F if using a chemical WMA additive as a compaction aid or MTD with remixing capabilities.
4. When using WMA, the minimum placement temperature is 215°F.



■ **Production Sampling.**

- **Mixture Sampling.** The Engineer will perform or witness the sampling of production **sublots** from trucks at the plant in accordance with Tex-222-F. The sampler will split each sample into three equal portions in accordance with Tex-200-F and label these portions as “Contractor,” “Engineer,” and “Referee.”
- **Blind Sample.** For one subplot per lot, the Engineer will sample, split, and test a “blind” production sample instead of the random sample collected by the Contractor. The location of the Engineer’s “blind” sample will not be disclosed to the Contractor prior to sampling. The Engineer’s “blind” sample may be randomly selected in accordance with Tex-225-F for any subplot or selected at the discretion of the Engineer. The Engineer may sample and test an additional blind sample when the random sampling process does not result in obtaining a sample.

For one subplot per lot, the Contractor will obtain a “blind” production sample collected by the Engineer. If desired, the Contractor may witness the collection of blind samples. Test either the “blind” or the random sample; however, referee testing for the subplot (if applicable) will be based on a comparison of results from the “blind” sample.



- **Hamburg Wheel Test.** The Engineer may perform a Hamburg Wheel test on plant produced mixture at any time during production. ~~In addition to testing production samples, the Engineer may obtain cores and perform Hamburg Wheel tests on any areas of the roadway where rutting is observed.~~ Suspend production until further Hamburg Wheel tests meet the specified values when the production ~~or core~~ samples fail the Hamburg Wheel test criteria in accordance with Table 8. ~~Core samples, if taken, will be obtained from the center of the finished mat or other areas excluding the vehicle wheel paths.~~ The Engineer may require up to the entire subplot of any mixture failing the Hamburg Wheel test to be removed and replaced at the Contractor's expense.

If the Department-approved laboratory's Hamburg Wheel test results in a "remove and replace" condition, the Contractor may request that the **Materials and Tests Division determine the final disposition of the material in question by re-testing the failing material.**





- **Miscellaneous Areas.**

- Added to all specifications: “pavement repair sections under 300 linear feet”
- Added to Item 342, 347, 348: Miscellaneous areas are not subject to thermal profiles or water flow testing.

- **Informational Shear Bond Strength Testing.** The Engineer will select one random subplot within the first four lots of the project for shear bond strength testing. Obtain full depth cores in accordance with Tex-249-F unless the HMA is being placed directly on concrete pavement. Label the cores with lot and subplot numbers and provide to the Engineer. Inspector must use pertinent Department form to document the Control Section Job (CSJ), producer of the tack coat, mix type, and shot rate. The Engineer will ship the cores to the Materials and Tests Division or district laboratory for shear bond strength testing. Results from these tests will not be used for specification compliance.



▪ **Segregation (Density Profile).** Test for segregation using density profiles in accordance with Tex-207-F, Part V. Density profiles are not required and are not applicable when using a thermal imaging system. Density profiles are not applicable in areas described in Section 341.4.9.3.1.4., “Miscellaneous Areas.”

Perform a minimum of one density profile per subplot. Perform additional density profiles when any of the following conditions occur, unless otherwise approved:

- areas that are identified by either the Contractor or the Engineer with severe thermal segregation;
- any visibly segregated areas that exist;
- the paver stops due to lack of material being delivered to the paving operations and the temperature of the uncompacted mat before the initial break down rolling is less than the temperatures shown in Table 17.

**Table 17**  
**Minimum Uncompacted Mat Temperature Requiring a Segregation Profile<sup>1</sup>**

High-Temperature Binder Grade <sup>2</sup>	Minimum Temperature of the Uncompacted Mat Allowed Before Initial Break Down Rolling <sup>3,4,5</sup>
PG 64	<250°F
PG 70	<260°F
PG 76	<270°F

1. Only applicable to paver stops that occur due to lack of material being delivered to the paving operations and when not utilizing a thermal imaging system.
2. The high-temperature binder grade refers to the high-temperature grade of the virgin asphalt binder used to produce the mixture.
3. The surface of the uncompacted mat must be measured using a hand-held thermal camera or infrared thermometer.
4. Minimum uncompacted mat temperature requiring a segregation profile may be reduced 20°F if using a chemical WMA additive as a compaction aid, MTD with remixing capabilities, or paver hopper insert with remixing capabilities.
5. When using WMA, the minimum uncompacted mat temperature requiring a segregation profile is 215°F.



▪ **Exempt Production.** The mixture may be deemed as exempt production when mutually agreed between the Engineer and the Contractor or when shown on the plans. Exempt production may be used for the following conditions:

- anticipated daily production is less than 500 tons;
- total production for the project is less than 5,000 tons;
- pavement repair sections equal to or greater than 300 feet. For pavement repair sections less than 300 feet, refer to Section 341.4.9.3.1.4., “Miscellaneous Areas.”

Exempt production is not eligible for referee testing. For exempt production, the Contractor is relieved of all production and placement QC/QA sampling and testing requirements, except for coring operations when required by the Engineer. When mutually agreed between the Engineer and the Contractor, production sampling will be allowed at the point of delivery. When 100 tons or more per day are produced, the Engineer must perform acceptance tests for production and placement in accordance with Table 16.



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- **Item 360, Concrete Pavement**
- **Item 361, Full-Depth Repair of Concrete Pavement**

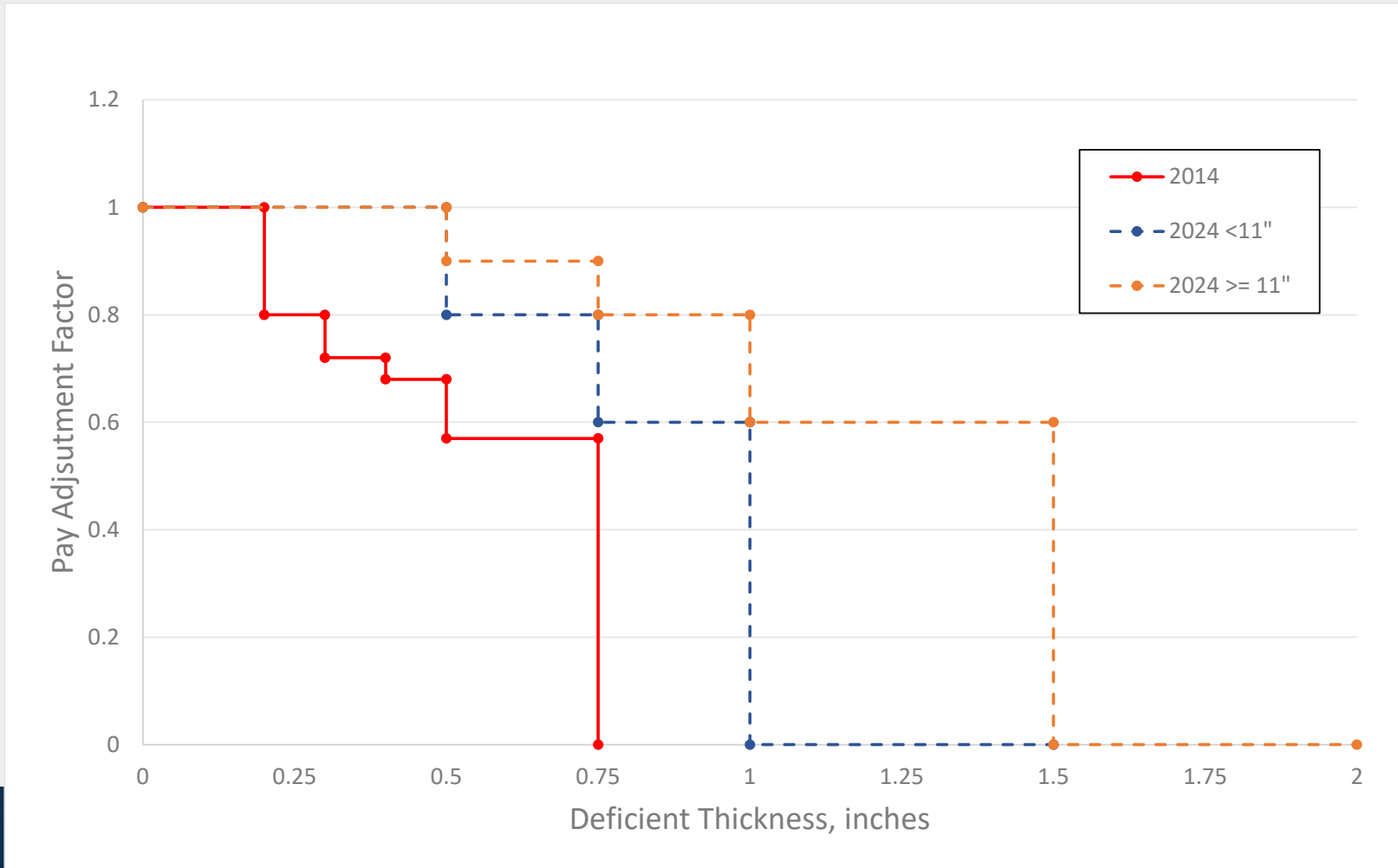


- Removed Flexural Strength testing
- Created DMS-7325, “Dowel Bars for Concrete Pavements”
- Removed Alternate Reinforcing Materials
- Allow anchor pins to remain in final pavement
- Removed all job control testing – TxDOT to perform all acceptance testing
- Added testing of epoxy grouted long. steel
- Added requirement for repairing honeycombed areas
- Curbs now completely covered by Item 529
- Longitudinal tining now default
- Engineer to evaluate uncontrolled cracking
- Engineer will check saw cut depths





- Clarified Opening to Traffic requirements
- Thickness pay adjustment revisions





- Title Change
- Moved half-depth repair to Item 720
- Require estimate of number of epoxy cartridges
- Clarified that new base is not needed
- Added Maturity method reference
- Measurement changed to Cubic Yard measured in place







# 2024 Standard Specifications Changes 400 Series Items Structures



- Changes to the Specifications
  - Deleted wording : ~~wording is in red and struck through~~
  - New wording: wording is in green and underlined
  - Changed wording: the ~~old~~ new wording

The information presented is a quick comparison between the 2014 and 2024 Standard Specifications Books.

Due to the number of revisions made, not every change is listed. Multiple Items have changes so significant that a quick comparison would not suffice. To familiarize yourself with the Items of the 2024 Standard Specifications Book, you will need to read the Item Specification in its entirety.



- 62 Items in 2014 Spec Book
- 2 Items are being retired
  - Item 461 Structural Plate Structures
  - Item 497 Sale of Salvageable Material
- 2 “New” Items
  - Item 468 Thermoplastic Pipe Culverts and Drains
  - Item 419 Concrete Sound (Noise) Walls
- 62 Items in 2024 Spec Book



## 1. Description

- No changes

## 2. Materials

- No changes

## 3. Construction

- **3.1.2. Bridge Foundations and Retaining Walls. 2nd Paragraph**
- Collect core samples to determine the character of the supporting materials if requested. Provide an intact sample adequate to judge the character of the founding material. Collect these cores when the excavation is close to completion. Cores ~~should~~ must be approximately 5 ft. deeper than the proposed founding grade.
- 3.2.2. Optional Shaping and Bedding for Precast Concrete Pipe. For precast concrete pipe, the beddings in accordance with ASTM C1479 are permissible.

## 4. Measurement

- ~~4.1.1.2. Structural Plate Structures. No material outside of vertical planes 3 ft. beyond and parallel to the horizontal projection of the outside surfaces of the structure will be included. When the quality of the existing soil or embankment is less than that of the proposed backfill material, the limits of measurement will be extended to vertical planes located 1/2 of the span beyond the horizontal projection of the outside surfaces of the structure.~~





## 5. Payment

- **5.2.2. Structural Excavation Not a Pay Item.** Where special materials for backfill are not required or specified, payment for the authorized removal and replacement of unstable or incompressible material will be measured and paid for at ~~\$15~~ \$18 per cubic yard of material removed. This price is full compensation for removing the unstable or incompressible material; furnishing, hauling, placing, and compacting suitable replacement material; and equipment, labor, tools, and incidentals.
- As shown on the plans or when directed, for the use of special materials such as flexible base, cement-stabilized base, cement-stabilized backfill, or other special material, excavation below the footing grades will be paid for at ~~\$10~~ \$12 per cubic yard. Payment for furnishing, hauling, placing, and compacting the flexible base, cement-stabilized base, cement-stabilized backfill, or other special materials will be made at the unit price bid for these Items, or, if the required material is not a bid Item, in accordance with Article 9.7.

Variance of Revised Footing Grade from Plan Grade	Payment Terms	Variance of Revised Footing Grade from Plan Grade
	“Structural Excavation” is a Bid Item	“Structural Excavation” is Not a Bid Item
Up to and including 5 ft.	Unit price equal to 115% of unit price bid for “Structural Excavation”	<del>\$10</del> <u>\$12</u> per cubic yard
Over 5 ft. up to 10 ft.	Unit price equal to 125% of unit price bid for “Structural Excavation”	<del>\$12</del> <u>\$15</u> per cubic yard
Over 10 ft.	In accordance with Article 9.7.	



1. **Description**
  - No Changes
2. **Materials**
  - No Changes
3. **Construction**
  - Prevent the movement of any inserted structure from its ~~designated~~ specified location.
  - Furnish a mix ~~meeting the requirements of~~ in accordance with Table 2 unless otherwise shown on the plans.
  - Typo Table 2 – “Air dontent” should be “Air content”
  - Transport, strip, and cure the test specimens as scheduled at the ~~designated~~ specified location.
4. **Measurement**
  - No Changes
5. **Payment**
  - No Changes



### 1. Description

- Furnish and place excavation protection for trenches 5 ft. or greater in depth for pipe, box culvert, electrical or telephone conduit, duct, or other utility installation for pipe, box culvert, electrical or telephone conduit, duct, or other utility installation.

### 2. Materials

- No Changes

### 3. Equipment

- No Changes

### 4. Construction

- No Changes

### 5. Measurement

- No Changes

### 6. Payment

- No Changes



### 1. Description

- No changes

### 2. Materials

- ~~– Furnish materials that meet the requirements of Item 423, “Retaining Walls,” when using temporary Mechanically Stabilized Earth (MSE) walls.~~

### 3. Equipment

- No changes

### 4. Construction

- ~~– Construct temporary MSE walls, when used, in accordance with Item 423, “Retaining Walls.”~~

### 5. Measurement

- No changes

### 6. Payment

- No changes





1. **Description** - No Changes
2. **Equipment**
  - XX2.1 Driving Equipment – 10th paragraph
  - Equip pile drivers with leads constructed to allow freedom of movement of the hammer and to provide adequate support to the pile during driving. The longitudinal axis of the leads, hammer, and pile ~~should~~ must coincide.
3. **Construction**
  - XX3.1 Tolerance for Driving. Drive piling to the required vertical or batter alignment, within the tolerances in accordance with this Section. Drive piling with rigid templates when using swinging leads or when necessary to comply with tolerances. Drive battered piles using a two-tiered template or a template equipped with a device to hold the pile at the required batter. Construct the template to allow the pile to pass freely through the template without binding. Cut off piling reasonably square at the elevation as shown on the plans, with a tolerance of no more than 2 in. above or below established cutoff grade. Submit for approval a structural analysis and proposed corrective action, signed and sealed by a licensed professional engineer, when tolerances are exceeded, and the Engineer requires corrective action.
  - 3.2 Penetration. Piling lengths shown on the plans are the lengths estimated to provide required bearing and for estimating purposes only. Drive piling to plan tip elevations or to greater depths as necessary to obtain the required allowable dynamic resistance meeting or exceeding the foundation load shown on the plans.
4. **Measurement & Payment** - No Changes



1. **Description** - No Changes
2. **Materials** - No Changes
3. **Equipment** - No Changes
4. **Construction**
  - Perform the foundation load test as shown on the plans and in accordance with the following.
  - ASTM D1143
  - ASTM D4945
  - ASTM D7383
  - [ASTM D8169](#)
5. **Measurement** - No Changes
6. **Payment**
  - Test piling or test shafts [and pertinent reaction piling or shafts](#) that are not part of the permanent structure will not be paid for directly but will be subsidiary to this Item. Test piling or test shafts that are part of the permanent structure will be paid for under the pertinent Items.



### 1. Description

- No Changes

### 2. Materials

- Furnish timber piling in accordance with ASTM D25. Use any species of durable timber for untreated piling that will satisfactorily stand driving. Use Southern pine ~~or Douglas fir~~ impregnated with a preservative for treated piling in accordance with Item 492, “Timber Preservative and Treatment,” or as shown on the plans.
- Furnish round piling in the lengths as shown on the plans, with a minimum circumference of 38 in. for piling 40 ft. or less in length, and 41 in. for piling more than 40 ft. Measure the circumference under the bark at a section 3 ft. from the butt or at the tip.
- **2.1 Inspection.** All piling is subject to inspection before and after treatment. Allow the inspector free access to all sites where materials are being produced or processed and provide any assistance necessary for the proper inspection of materials. ~~The engineer or inspection agency that performed the inspection must brand the butt and tip of each acceptable pile with a marking hammer showing identity of the engineer or inspection agency.~~

### 3. Equipment

- No Changes



### 4. Construction

- 4.1 Splices, Build-Ups, and Cutoffs. Build-up piling by splicing on an additional length of piling of the same diameter and quality when required. Make splices in accordance with the details shown on the plans or as directed. Construct the splice after the pile head and the lower end of the build-up section have been squared up and treated in accordance with Section 406.4.2., “Treatment of Pile Ends.” ~~Use a long enough build-up section to preclude the need for more than 1 splice.~~ Use no more than 1 splice in any single pile.
- 4.2.2. Untreated Timber. Coat the heads of piling thoroughly with a thick protective coat of hot tar, hot asphaltum, ~~or hot creosote.~~

### 5. Measurement

- No Changes

### 6. Payment

- No Changes



### 1. Description

- No Changes

### 2. Materials

- 5<sup>th</sup> Paragraph The Department maintains an MPL of approved paint systems for steel piling.

### 3. Construction

- XX3.2 Painting. Spot-clean and paint in accordance with Item 446. Clean and paint damaged areas, field splices, or areas missing the shop coat with enough epoxy zinc primer to bring the total zinc primer to the minimum ~~3.0~~ 3.5-mil DFT. Follow the repair procedures recommended by the manufacturer of the marine-grade immersion coating system for piling with marine-grade immersion coatings.
- After driving piling, apply at least 2.0 mil DFT of each of epoxy intermediate and polyurethane appearance coating when System III-B is shown on the plans, or apply at least 2.0 mil DFT of the acrylic latex appearance coating when System IV is shown on the plans. ~~Use a concrete gray appearance coating~~ Use an appearance coating in accordance with Federal Standard 595C, Color 35630, unless shown otherwise on the plans. Extend the appearance coat 1 ft. below finished ground line unless the piling is standing in water, in which case extend the appearance coat to the low-water line. Replace any earthen material removed for this painting after the paint has dried.

### 4. Measurement

- No Changes

### 5. Payment

- No Changes





### 1. Description

- No Changes

### 2. Materials

- 2.1 Hydraulic Cement Concrete. Use materials in accordance with Item 421, “Hydraulic Cement Concrete.” Provide a neat cement or sand-cement mixture for the grout for soil nail anchors with a 7-day compressive strength of 3,000 psi. Determine grout strength by testing the grout used for the test soil nail anchors in cubes in accordance with ~~Tex-307-D~~ Tex-442-A, “Determining Compressive Strength of Grouts,” or cylinders in accordance with Tex-418-A, “Compressive Strength of Cylindrical Concrete Specimens.” Test further as directed or if the grout mixture is modified. Fly ash may be included in the grout.
- 2.3 Reinforcing Steel. Use materials in accordance with Item 440, “Reinforcement for Concrete.” Provide epoxy-coated reinforcing steel bar of the size and grade as shown on the plans for permanent walls. The minimum allowable epoxy-coating thickness is 12 mils. Temporary walls are not required to provide epoxy-coated steel bars unless otherwise shown on the plans.

### 3. Equipment

- XXFurnish suitable equipment to drill the holes to the specified diameter, depth, and line. Provide a drill rig with an articulating head in the vertical plane and continuous flight augers. If an auger becomes worn to the degree that the drilled hole is less than the required diameter, remove the auger from service until it is repaired and can provide a hole of at least the required diameter. ~~Return the auger to service once it is repaired and can provide a hole of at least the required diameter.~~



### 4. Construction

- No Changes

### 5. Measurement

- 5.2 Verification Tests. Verification tests will be measured by each complete load test satisfactorily performed, reported, and accepted.

### 6. Payment

- 6.1 Proof Tests. Soil nail anchor proof tests will not be paid for directly, but will be subsidiary to this Item.



## 1. Description

- No Changes

## 2. Materials

- 2.1 Hydraulic Cement Concrete. Use materials in accordance with Item 421, “Hydraulic Cement Concrete.” Provide a neat cement or sand-cement mixture for the grout for soil nail anchors with a 7-day compressive strength of 3,000 psi. Determine grout strength by testing the grout used for the test soil nail anchors in cubes in accordance with ~~Tex-307-D~~ Tex-442-A, “Determining Compressive Strength of Grouts,” or cylinders in accordance with Tex-418-A, “Compressive Strength of Cylindrical Concrete Specimens.” Test further as directed or if the grout mixture is modified. Fly ash may be included in the grout.
- 2.3 Reinforcing Steel. Use materials in accordance with Item 440, “Reinforcement for Concrete.” Provide epoxy-coated reinforcing steel bar of the size and grade as shown on the plans for permanent walls. The minimum allowable epoxy-coating thickness is 12 mils. Temporary walls are not required to provide epoxy-coated steel bars unless otherwise shown on the plans.

## 3. Equipment

- XXFurnish suitable equipment to drill the holes to the specified diameter, depth, and line. Provide a drill rig with an articulating head in the vertical plane and continuous flight augers. If an auger becomes worn to the degree that the drilled hole is less than the required diameter, remove the auger from service until it is repaired and can provide a hole of at least the required diameter. ~~Return the auger to service once it is repaired and can provide a hole of at least the required diameter.~~



### 4. Construction

- No Changes

### 5. Measurement

- 5.2 Verification Tests. Verification tests will be measured by each complete load test satisfactorily performed, reported, and accepted.

### 6. Payment

- 6.1 Proof Tests. Soil nail anchor proof tests will not be paid for directly, but will be subsidiary to this Item.



### 1. Description

- No Changes

### 2. Materials

- No Changes

### 3. Construction

- **3.5 Reinforcing Steel** Maintain the minimum length of steel required for lap with column steel. Use dowel bars if the proper lap length is provided both into the shaft and into the column. Locate and tie all dowel bars into the cage before placing concrete ~~or insert dowel bars into fresh, workable concrete.~~
- **3.6 Concrete.** Perform all work in accordance with Item 420, “Concrete Substructures.” Provide concrete with maximum placement temperatures as shown in Table 4. Provide thermal analysis to show, and temperature-recording devices to verify, maximum concrete core temperature requirements are met in accordance with Section 420.4.7.14, “Mass Placements,” for shafts with diameter exceeding 7 ft. Instrument the first shaft for each size shaft exceeding 7 ft. diameter, and as directed if results are not in conformance with Specifications and when the concrete mix design changes.
- Remove loose material and accumulated seep water from the bottom of the excavation before placing concrete. No more than 3 in. of water may be present within the base of the excavation at the time of concrete placement. The rate of inflow must be confirmed by observation to be less than 12 in. per hour. Place concrete using underwater placement methods if seepage exceeds the tolerable levels cited above.





### 3. Construction

- **3.7 Additional Requirements for Slurry Displacement or Underwater Concrete Placement Methods.** Place concrete on the same day the shaft is excavated and as soon as possible after all excavation is complete and reinforcing steel is placed. Rework the hole by over-drilling a minimum 1/2 in. on all sides on the same day that concrete is placed when drilling of a hole is performed on multiple days if approved.

### 2. Measurement

- No Changes

### 3. Payment

- No Changes



### 1. Description

- No Changes

### 2. Materials

- No Changes

### 3. Equipment

- No Changes

### 4. Construction

- **4.7.10 Installation of Dowels and Anchor Bolts.** As shown on the plans, provide an Adhesive Anchor Installer certified by ACI.
- **4.13 Ordinary Surface finish** (2nd bullet point)
- Clean and fill holes or spalls caused by the removal of form ties, etc., with latex grout, cement grout, or epoxy grout as approved. ~~Fill only the holes.~~ Do not blend the patch with the surrounding concrete. ~~On surfaces to receive a rub finish in accordance with Item 427, “Surface Finishes for Concrete,” chip out exposed parts of metals chairs to a depth of 1/2 in. and repair the surface.~~



### 5. Measurement

- No changes

### 6. 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 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; ~~furnishing, placing, and stressing post-tensioning system;~~ 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.



### 1. Description

- No Changes

### 2. Materials

- Natural Pozzolans. Furnish natural pozzolans in accordance with DMS-4635, “Natural Pozzolans.”
- Table 1 added note 1

### 3. Equipment

- Require calibration documentation for Contractor supplied strength testing equipment

### 4. Construction

- Removed Coarse agg. grade for classes of concrete and added requirements for max agg. size
- Reverted to 2004 air entrainment requirements when entrained air is specified
- Allow up to 70% replacement for mass concrete
- Allow lab trial batches

### 5. Acceptance of Concrete

- Added 56-day test specimens

### 6. Measurement & Payment

- Updated concrete evaluation process to include 56-day set of specimens
- Established 7-day deadline for decision



## 1. Description

- No Changes

## 2. Materials

- No Changes

## 3. Equipment

- **3.3. Vibrators.** Provide at least two standby vibrators for emergency use.
- **3.4. Screeds and Work Bridges for Bridge Slabs.** Equip transverse screeds with a pan float and skew kit.

## 4. Construction

- **4.6.5. Preparation of Surfaces.** 4<sup>th</sup> Sentence Ensure the surface of the existing concrete is in an SSD condition just before placing subsequent concrete. Pre-wet the existing concrete by ponding water on the surface for 24 hr. before placing subsequent concrete. Use high-pressure water blasting to achieve SSD conditions 15 -30 min. before placing the concrete if ponding is not possible. An SSD condition is achieved when the surface remains damp when exposed to sunlight for 15 min.
- **4.6.6. Expansion joints** 4<sup>th</sup> and 5<sup>th</sup> paragraph ~~Provide preformed fiber joint material or a high-density foam in the vertical joints of the roadway slab, curb, median, or sidewalk when the plans show a Type A joint and fill the top 1 in. with the specified joint sealing material unless noted otherwise. Install the sealer in accordance with Item 438, "Cleaning and Sealing Joints," and the manufacturer's recommendations.~~
- ~~Use light wire or nails to anchor any preformed fiber joint material to the concrete on 1 side of the joint.~~





### 4. Construction

- **4.11. Final Surface Texture.** Saw-cut grooves in the hardened concrete of bridge slabs, bridge approach slabs, and direct traffic culverts to produce the final texturing after completion of the required curing period unless otherwise noted. Cut grooves ~~perpendicular~~ parallel to the structure centerline. Cut grooves across the slab within 18 in. of the barrier rail, curb, or median divider. Adjust groove cutting at skewed metal expansion joints in bridge slabs ~~by using narrow-width cutting heads~~ so all grooves end within 6 in. of the joint, measured perpendicular to the centerline of the metal joint. Leave no un-grooved surface wider than 6 in. adjacent to either side of the joint. ~~Ensure the minimum distance to the first groove, measured perpendicular to the edge of the concrete joint or from the junction between the concrete and the metal leg of the joint, is 1 in.~~

### 5. Measurement

- No Changes

### 6. Payment

- No Changes



1. Description – No Changes
2. Materials
  - 2.1. General. (Last Paragraph)
    - Construct permanent retaining walls approved for use in accordance with DMS-4800, “Proprietary Earth Retaining Wall System,” and on the Approved System List for Concrete Block Retaining Walls Systems and Mechanically Stabilized Earth Panel Type Systems.
  - 2.2. Definitions.
    - **Mechanically Stabilized Earth (MSE) Wall.** A wall consisting of a volume of select backfill with tensile earth reinforcement elements distributed throughout. Permanent MSE walls use a precast concrete panel as a facing element. Provide the approved MSE-panel type systems in accordance with DMS-4800. Temporary MSE walls use welded wire fabric with filter fabric backing as a facing element.
    - **Concrete Block Wall.** A retaining wall that uses machine-made, precast concrete block units as facing elements. The walls may use a volume of select fill with tensile earth reinforcements distributed throughout, or may use only the facing unit and unit fill weight for support. Provide the approved concrete block retaining wall systems in accordance with DMS-4800.
  - 2.4.2. Select. (5th Paragraph)
    - In addition to the requirements for Type CS select fill, ~~the fraction finer than the No. 200 sieve~~ must have a Plasticity Index (PI) in accordance with Tex-106-E not greater than 6.
  - 2.4.3. Drainage Aggregate for Concrete Block Wall.



### 3. Construction

- **3.3. Submittals. ~~Working Drawings.~~** When proprietary wall systems are used for permanent or temporary walls, submit working drawings, including casting drawings, construction drawings, and design calculations, bearing the seal of a licensed professional engineer for review and approval in accordance with the Department’s Guide to Shop Drawing Submittals process. Upon completion of construction, submit a set of reproducible as-built drawings.
- **3.6. Concrete Block Retaining Walls.** The concrete block units may be sampled and tested by the Engineer before shipment or upon delivery to the construction site. Display samples of block units indicating the color, texture, and finish for approval. Store, transport, and handle all block units carefully to prevent cracking or damage.

### 4. Measurement – No Changes

### 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 “Retaining Walls” of the type or special surface finish specified. This price is full compensation for excavation in back of retaining walls and for footings; furnishing and placing footings, leveling pads, copings, and traffic railing foundations; furnishing, placing, and compacting backfill (except in embankment areas), including cement for stabilization; proof rolling; furnishing and placing concrete, reinforcing steel, waterproofing material, ~~filter material and drain pipe~~, joint material, water stop, and filter fabric when required; fabricating, curing, and finishing all panels; furnishing and placing earth reinforcement, anchorage systems, and fasteners; wall erection; and equipment, labor, tools, and incidentals.
- The underdrain filter material and drainpipe will be considered part of the quantities measured and paid for under Item 556.



### 1. Description

- Box Beams. For this Specification, all box beams, X-beams, slab beams, and decked slab beams are referred to as “box beams.”

### 2. Materials

- No Changes

### 3. Equipment

- No Changes

### 4. Construction

- 4.2.1.2. Internal Forms 4th Paragraph

~~– Vent void forms without solid cores to eliminate high air pressure caused by heat of hydration. Insert a 3/4 in. diameter plastic tube into the top of the void before placing concrete and leave it in place until there is no possibility of damage from pressure. Remove the plastic tube afterwards and seal the hole with an approved repair material and procedure.~~



### 4. Construction

- 4.2.3. Placing Reinforcing Steel. 2nd Paragraph
- Weld steel components in accordance with ~~Item 448~~ Item 441, “Steel Structures.”
- ~~4.2.7.1.3. Ponding Method. Use an approved retarder when the air temperature is above 85°F in accordance with the manufacturer’s recommendations if necessary to control concrete slump loss and lengthen the time for placing, consolidating, and finishing operations.~~
- 4.2.7.1.3. Ponding Method. Continuously cover exposed concrete surfaces with standing water.

### 5. Measurement & Payment

- No Changes





## 1. Description

- No Changes

## 2. Materials

- **2.3. Prestressing Steel.** After bullet points 1st paragraph

~~- Maintain copies of the manufacturer's certified Domestic Certification Form D-9-PS-1 for 7-wire steel strand and supply to the Department upon request.~~

## 3. Construction

- No Changes

## 4. Measurement

- No Changes

## 5. Payment

- No Changes



### 1. Description

- No Changes

### 2. Materials

- **2.1. Prestressing Steel.** Furnish prestressing steel strand conforming to one of the following types:
  - seven-wire steel strand in accordance with DMS-4500, “Steel Strand, Uncoated Seven-Wire ~~Stress-Relieved and~~ Low-Relaxation for Prestressed Concrete,” or
- **2.2. Post-Tensioning System.** Furnish a post-tensioning system following the minimum requirements for Protection Level 2 (PL-2), or higher protection level as shown on the plans, in accordance with PTI/ASBI M50.
  - The following exceptions apply.(2nd Bullet Point)
  - Provide pre-packaged grouts in accordance with DMS-4670, “Grouts for Post-Tensioning.” ~~and Class C grout per PTI M55.~~ Do not use grouts that exceed the manufacturers’ recommended shelf life or 6 mo. after date of manufacture, whichever is less.

### 3. Equipment

- No Changes



### 4. Construction

- 4.2.3. Grouting Plan. New Requirements for Submittals
- 4.2.4. Stressing Safety Plan. New Article Read
- 4.4. Duct and Prestressing Steel Installation for Post-Tensioning. (Read 2nd & 4th Paragraph)
- 4.5. Grouting. Grout in accordance with PTI M55. Provide grout mock-ups as shown on the plans.
- Table 1 added note 2:
- 2. Verify wet density is within the range established by the manufacturer.

### 5. Measurement

- Read for Major changes—No longer Subsidiary

### 6. Payment

- Read for Major changes—No longer Subsidiary



1. Description - No Changes
2. Materials
  - 2.1.4. Epoxy Waterproofing. Provide Type X epoxy in accordance with DMS-6100, “Epoxies and Adhesives,” or another approved waterproofing epoxy designed to limit the moisture vapor transmission into a concrete or steel surface. Match color of coating with Federal Standard 595C color 35630, concrete gray, unless otherwise shown on the plans.
3. Equipment
  - **3.1. Low-Pressure Water Blasting.** Use equipment capable of supplying a minimum pressure at the nozzle end of 3,000 psi ~~at a minimum flow rate of 3 gpm. Use a 0° rotary, vibratory, or wobble type nozzle. Use equipment capable of including abrasives in the water stream when specified on the plans.~~
4. Construction
  - **4.2.2. Coating Application.** Mix coating materials in conformance with the manufacturer’s instructions
    - ~~– 4.2.2.2. Concrete Paint~~
    - ~~– 4.2.2.3. Opaque Sealer~~
    - ~~– 4.2.2.4. Silicone Resin Paint~~
5. Measurement - No Changes
6. Payment - No Changes



## 1. Description

- No Changes

## 2. Materials

- **2.4 Concrete.** Provide Class C concrete for substructures, Class S concrete for decks, or concrete of the specified design strength unless noted otherwise as follows:

- ~~- as an option for vertical/overhead repairs greater than 6 in. thick;~~
- ~~- for full or partial depth slab repairs;~~
- ~~- for replacement of entire members or elements;~~
- ~~- as an option for horizontal repairs greater than 4 in. thick.~~

2.6. Mechanical and Adhesive Anchors. When mechanical or adhesive anchors are required to bind repair material to the parent concrete, provide anchors conforming to one of the following.

Provide stainless steel expansion anchors. Other anchors, such as galvanized or zinc-painted metal, may be used with approval.

Provide reinforcing steel or threaded stainless steel pins (1/2-inch diameter minimum) anchored in place using a Type III epoxy anchoring adhesive, in accordance with DMS-6100.





### 3. Equipment

- The Engineer may require demonstration of the equipment's abilities.
- 3.1. Abrasive Blasting. Provide equipment capable of removing oil, dirt, slurry, curing compound, laitance, and other similar materials from the surface of the concrete.
- 3.2. Water Blasting. Provide equipment capable of supplying a minimum pressure at the nozzle end of 3,000 psi at a minimum flow rate of 3 gpm. Use a 0° rotary, vibratory, or wobble-type nozzle.
- 3.3. Sawing. Provide equipment capable of sawing concrete to the depth specified when required.
- 3.4. Power-Driven Chipping Tools. Provide tools not heavier than a nominal 30-lb. class for bulk removal of concrete.
- 3.5. Chipping Hammers. Provide chipping hammers not heavier than a nominal 15-lb. class to remove concrete beneath any reinforcing bars.
- 3.6. Hand Tools. Provide applicable hand tools for placing, consolidating, striking-off, and finishing stiff plastic concrete.



### 4. Construction

- Place repair material while the concrete substrate is in a saturated surface dry (SSD) condition. Obtain an SSD condition by applying a high-pressure water blast to the surface for at least 15 min. An SSD condition is achieved when the surface remains damp until the repair material is applied. The surface must be free of standing water. Remove all free (ponded) water just before placing repair material.
- Do not use a proprietary epoxy bonding layer instead of an SSD substrate unless approved. If use of a proprietary bonding agent is authorized, mix it in conformance with the manufacturer's requirements. Use only Department-approved Type V or Type VII material in accordance with DMS-6100.

### 5. Measurement

- Measurement will be made before blending repair edges with parent material in accordance with the Concrete Repair Manual.

### 6. Payment

- No Changes



## 1. Description

- No Changes

## 2. Materials

- No Changes

## 3. Construction

- **3.2 Surface preparation.** 2nd paragraph
- Achieve SSD conditions by high-pressure water blasting 15 to 30 min. before placing the repair material, ~~soaking a minimum of 12 hr., or by other approved methods. An SSD condition is achieved when the surface remains damp when exposed to sunlight for 15 min.~~ An SSD condition is achieved when the surface remains damp until the concrete is applied. The surface must be free of standing water. Remove all free (ponded) water just before placing concrete.

## 4. Measurement

- No Changes

## 5. Payment

- No Changes



### 1. Description

- No Changes

### 2. Materials

- Major Changes Read Spec Article **2.3 Stone Riprap**. 2nd Paragraph Pay attention to Tables 1 & 3

### 3. Construction

- Major Changes Read Spec Article **3.2 Stone Riprap** Paragraph 3-6

### 4. Measurement

- No Changes

### 5. Payment

- No Changes



### 1. Description

- No Changes

### 2. Materials

- **2.1. Plain and Laminated Elastomeric Bearings.** 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 an MPL 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.





### 2. Materials

- **2.1.1 Elastomer.** 6<sup>th</sup> paragraph voided and replaced with the following:
- The Department will perform bond strength testing of laminated prequalification samples 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. The Department will verify the presence of chlorinated compounds (neoprene) in the elastomer in accordance with Tex-601-J, Part III—“Chlorinated Compound Test Method 3.”
- **2.2.1.2 Laminated Elastomeric Bearing Pad and Steel Plate.** Supplemented with the following:
- Bearing manufacturers that produce the laminated elastomeric bearing pad component of a sliding elastomeric bearing must comply with the AASHTO Product Evaluation & Audit Solutions Committee Work Plan for Evaluation of Plain and Laminated Elastomeric Bridge Bearing Manufacturers.
- Elastomeric Bridge Bearing Manufacturers.



### 3. Construction

#### – 3.1.1. Markings.

~~– direction of slope.~~

#### – 3.1.2 Testing and Acceptance. Voided and replaced with the following:

- Perform testing, inspection, and acceptance of plain and laminated elastomeric bearing pads in accordance with DMS-7365.

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.

#### – 3.2.2.1. Lower Component.

- PTFE physical properties in accordance with Table 1, except for Melting Point Testing (ASTM D4894).

### 4. Measurement

- No Changes

### 5. Payment

- No Changes



### 1. Description

- No Changes

### 2. Materials

- Use sealants of the class shown on the plans that meet the requirements of DMS-6310, “Joint Sealants and Fillers,” except as modified herein. Use primers recommended by the manufacturer of the sealant if required.
- When a foam-type joint seal is specified, provide one of the listed systems shown on the plans with material meeting the requirements of Section 454.3.4., “Foam-Type Joint Seal.”

### 3. Equipment

- No Changes

### 4. Construction

- When foam-type joint seal is shown on the plans, provide a technician associated with the joint seal manufacturer for training and installation of the initial joint. Provide written instructions from the manufacturer for joint seal installation. Measure all joint openings and size the width of joint seal in conformance with the manufacturer’s specifications.

### 5. Measurement

- No Changes

### 6. Payment

- No Changes



### 1. Description

- Overlay concrete bridge deck surface with concrete overlay (CO), latex-modified concrete overlay (LMC), multi-layer polymer overlay (MLPO), or polyester polymer concrete overlay (PPC).

### 2. Materials

- Major Changes with the addition of multiple materials and removal of ~~2.3.1. Crack Sealant~~

### 3. Equipment

- Major Changes to equipment read spec including:3.2.5. Polyester Polymer Concrete Overlay (PPC). &  
– 3.4. Finishing Equipment for Polyester Polymer Concrete Overlay (PPC).

### 4. Construction of Concrete or Latex-Modified Concrete Overlays

- Major Changes read 4.2.1. Concrete Overlay (CO)., 4.2.2. Latex-Modified Concrete Overlay (LMC)., 4.3. Surface Preparation., & 4.4. Placing and Finishing Concrete.



### 5. Construction of Multi-Layer Polymer Overlay

~~– 5.6. Application of Crack Sealant.~~

– 5.6. Application of Polymer Overlay. & Table 7

### 6. Construction of Polyester Polymer Concrete Overlays(New Articles & Sections)

– 6.1., 6.1.1., 6.1.2., 6.1.4., 6.1.5., 6.2., 6.3., 6.3.1., 6.3.2., 6.3.3., 6.3.4., 6.3.5., 6.4., 6.5., & 6.6.

### 7. Measurement

– CO, LMC, MLPO, and PPC will be measured by the square yard of surface overlaid using the dimensions shown on the plans.

### 8. Payment

– The addition of “Polyester Polymer Concrete Overlay”





## 1. Description

- No Changes

## 2. Materials

- **2.1. Approved Mills.** Significant changes read
- **2.2. Deformed Steel Bar Reinforcement.** Removed Grade 75
- **2.3. Smooth Steel Bar Reinforcement.** ~~Provide smooth bars for concrete pavement with a yield strength of at least 60 ksi~~
- **2.5. Weldable Reinforcing Steel.** Calculate CE using the following formula:  $C.E. = \%C + \%Mn/6$
- **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. **Materials 2.9. Mechanical Couplers.** 2<sup>nd</sup> paragraph voided and replaced with the following:

- Furnish only couplers pre-qualified in accordance with DMS-4510. 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.

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

- **2.11. Low-Carbon and Low-Chromium Reinforcing Steel.** Provide deformed steel bars in accordance with ASTM A1035, Grade 100, Type CS when low carbon and low chromium reinforcing steel is required on the plans. Type CM will be permitted only if specifically allowed as shown on the plans.

~~- **2.12. Dual-Coated Reinforcing Steel.**~~

- 2.12. Glass-Fiber Reinforced Polymer (GFRP) Bars.

- 2.13. Galvanized Reinforcement. Provide galvanized reinforcing steel in accordance with one of the following as shown on the plans:

- zinc-coated, hot-dip galvanized Class I or II steel reinforcement in accordance with ASTM A767, Grade 60 or 80; or
- continuously hot-dip galvanized reinforcement in accordance with ASTM A094 steel reinforcement, Grade 60 or 80.
- Tables 5 & 6 have major changes read carefully



### 3. Construction

- **3.1 Bending.** Supplemented with the following:

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

Bending CGR is permitted after galvanizing.

- **3.5 Placing.** 4th paragraph is supplemented with the following:

Use Class 1 or Class 1A supports with CGR.

- **3.7. Repair of Galvanized Reinforcing Steel.** Repair damaged galvanized surfaces in accordance with Section 445.3.4.2. “Repair Processes.”

### 4. Measurement & Payment

- No Changes



### 1. Description

- No Changes

### 2. Materials

- Major Changes Read Spec Article [2.2 Approved Electrodes and Flux-Electrode Combinations. & 2.4.1.2. Paint Inside Tub Girders and Closed Boxes.](#)

### 3. Construction

- Major Changes Read Spec Article [3.1.5.1. Plants.](#) (2nd paragraph) with bullet points. [3.1.5.2. Personnel.](#) [3.1.5.3. Nondestructive Testing \(NDT\).](#) [3.1.5.4. Welding Procedure Specifications \(WPSs\) Qualification Testing.](#) [3.1.6.1. Erection Drawings.](#) (4th paragraph) [3.1.9. Material Identification.](#) (2nd paragraph) [3.2.5.3. Magnetic Particle Testing \(MT\).](#) [3.8.1. Shop Painting](#) (6th Paragraph)

### 4. Measurement & Payment

- No Changes



## 1. Description

- No Changes

## 2. Materials

- **2.1.3.3. Fasteners.** Provide high-strength bolts in accordance with ASTM [F3125](#), Grade A325 ~~A490~~, unless otherwise shown on the plans. The Department may sample high-strength bolts, nuts, and washers for structural connections in accordance with Tex-719-I.
- ~~**2.6 Pipe Rail.** “Pipe” includes special extruded and bent shapes. Provide pipe that is rolled, extruded, or coldpressed from a round pipe or flat plate, and of the section shown on the plans. Ensure the design of the cold press and dies results in a pipe of uniform section free from die marks. Cut the pipe to the lengths required once it has been formed to the required section. Make the end cuts and notches at the angles to the axis of the pipe required to produce vertical end faces and plumb posts when required by the plans. Provide a neat and workmanlike finish when cutting and notching pipe.~~

## 3. Construction

- No Changes

## 4. Measurement

- (6<sup>th</sup> Paragraph) The weights of rolled materials (e.g., structural shapes and plate) will be computed based on nominal weights and dimensions using measurements shown on the plans. Deductions will not be made for material that is removed for copes, clips, planing, or weld preparation. [The weight of castings will be computed from the dimensions shown on the plans.](#) Shoes will be measured by the weights shown on the plans.

## 5. Payment

- No Changes





## 1. Description

- No Changes

## 2. Materials

- Table 1 ASTM ~~A153~~ F2329 Bolts, Nuts, Screws, Washers, & Other Miscellaneous Hardware

## 3. Construction

- 3.2.1. Surface Preparation. Do not water-quench or chromate-quench galvanized surfaces to be painted. Prepare the surface in accordance with ASTM D6386 or ASTM D7803, as applicable. Apply coating within 12 hr. of cleaning. Re-clean the surface if more than 12 hr. elapse before initial painting.
- ~~3.3 Galvanizing Weldments. If problems develop during galvanizing of welded material, the Engineer may require a compatibility test of the combined galvanizing and welding procedures in accordance with Section 441.3.2.6., “Testing of Galvanized Weldments,” and may require modification of one or both of the galvanizing and welding procedures.~~

## 4. Measurement & Payment

- No Changes



## 1. Description

- No Changes

## 2. Materials

- ~~2.1.2. System I-B (Overcoating, High Corrosion Environment).~~
- 2.1.2. System II.
- 2.1.3. System III-A.
- 2.1.4. System III-B.
- 2.1.5. System IV.
- **2.4. Special Protection System (SPS).** Provide the type of paint system shown on the plans or in conformance with Special Provisions to this Item. SPS paints must have completed ~~NTPEP Structural Steel Coatings (SSC)~~ ASHTO Product Evaluation & Audit Solutions Structural Steel Coatings testing regimen as a complete system, with full data available from ~~NTPEP~~ AASHTO unless specified otherwise.



### 3. Equipment

- Provide spray equipment that:
  - has adequate capacity and enough gauges, filters, agitators, regulators, and moisture separators to ensure delivery of clean, dry air in accordance with ASTM D4285 at the proper pressure and volume;
  - ~~will remove moisture from air stream in contact with the paint; and Keep paint pots no more than 20 ft. above or below the level of spray application of paint during painting operations. Do not allow fluid hoses to sag more than 10 ft. below the level of the bottom of the paint pot or actual spraying operations, whichever is the lowest point.~~
  - Submit to the Engineer documentation verifying ~~SSPC QP 1 certification~~ AMPP QP 2 Cat A certification. If the plans specify that the existing coating system does not contain hazardous materials, provide AMPP QP 1 certification.

### 4. Construction

- **Major Changes** important to read about specific Paint System, containment, general preparation, cleaning, application, waste, wastewater, & miscellaneous

### 5. Measurement

- No Changes

### 6. Payment

- No Changes



## 1. Description

- No Changes

## 2. Materials

- **2.2. Bolt Assemblies.** Provide ASTM F3125 bolts, nuts, and washers meeting the type, grade, and finish requirements shown in Table 1, unless otherwise shown on the plans.
- Table 1 added Note 1
- ASTM F3125 high strength structural bolts
- Table 2 updated tension numbers

## 3. Equipment

- No Changes

**Table 2**  
**Bolt Tension**

Nominal Bolt Size (in.)	Minimum Tension (kips)	
	Grade A325 Bolts	Grade A490 Bolts
1/2	12	15
5/8	19	24
3/4	28	35
7/8	39	49
1	51	64
1-1/8	<del>56</del> 64	80
1-1/4	<del>71</del> 81	102
1-3/8	<del>85</del> 97	121
1-1/2	<del>103</del> 118	148



### 1. Construction

- **4.4. Preparation of Faying Surfaces.** Perform blast cleaning or painting of faying surfaces in accordance with Item 441. Provide an **SSPG** AMPP-SP 10 blast cleaning before shipment for weathering steel. Do not wire-brush weathering steel faying surfaces.
- ~~Roughen galvanized faying surfaces by hand wire-brushing. Do not use power wire brushes to roughen galvanized faying surfaces.~~

### 2. Measurement & Payment

- No Changes





### 1. Description

- No Changes

### 2. Materials

- Use only electrodes and flux-electrode combinations in accordance with 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 pertinent 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. Resubmit electrodes or flux-electrode combinations every 12 mo.

### 3. Equipment

- No Changes

### 4. Construction

- 4.5. Welding Reinforcing Steel. Splice reinforcing steel by welding only at locations as shown on the plans. Before welding galvanized rebar, remove the zinc coating at least 1 in. from either side of the intended weld zone by grinding or equivalent means. After welding, repair the galvanized zinc coating damage in the welded area in accordance with Item 445, “Galvanizing.”

### 5. Measurement & Payment

- No Changes



### 1. Description

- No Changes

### 2. Materials

- Table 1 High Strength Steel [ASTM F3125](#) Bolt Standard has been added
- **2.3. Threads.** Provide anchor bolts with rolled or cut threads of UNC or 8UN series in accordance with ASME B1.1. [Anchor bolts 1 in. in diameter and smaller](#) and 1-3/4 in. in diameter and larger must have UNC series threads.

### 3. Construction

- **3.1. Fabrication.** (2nd paragraph)
- ~~If the anchor bolts will be installed in a template embedded in concrete, tack weld the anchorage nuts to the template in the shop. Perform this welding with appropriate jigs to ensure the anchor bolt is perpendicular to the template~~

### 4. Measurement & Payment

- No Changes



## 1. Description

- No Changes

## 2. Materials

- No Changes

## 3. Construction

- **3.1.2. Fabrication.** Fabrication plants that produce metal railing (steel and aluminum) must be approved in accordance with DMS-7395, “Metal Railing Fabrication Plant Qualification.” This required approval does not include fabricators of chain-link fence. The Department maintains an MPL of approved fabrication plants of metal railing.
- Permanently mark each metal railing post base plate, at a visible location when erected, with the fabrication plant’s insignia or trademark. For fabricated rail panels, provide this permanent mark on one post base plate per panel.
- ~~Fabricate stainless steel railing in accordance with AWS D1.3.~~
- ~~3.1.3. Castings.~~
- **3.3. Tests.** 2nd paragraph
- The Engineer will select ~~three~~ five anchor bars or bolts from the first day’s production to be tested after the epoxy has cured.



### 4. Measurement

- No Changes

### 5. Payment

- No Changes



### 1. Description

- No Changes

### 2. Materials

- Use primers recommended by the manufacturer of the sealant when required. Provide backer rods that are circular and are 25% larger than the joint opening. Use backer rods compatible with the sealant that do not react with or bond to the sealant.

### 3. Construction

- **3.3.2. Sealant.** (5<sup>th</sup> & 6<sup>th</sup> Sentence) Apply the primer, when required, at the specified rate and time interval before placing the sealant. Apply the sealant to dry joint surfaces unless otherwise recommended by the sealant manufacturer.
- 3.4. Foam-Type Joint Seal.
- 3.5. Type “A” Joint.

### 4. Measurement

- No Changes

### 5. Payment

- No Changes





## 1. Description

- No Changes

## 2. Materials

- See Table 2

Table 2  
Filler Stone Size Requirements

	Cage Height (in.)	Allowable Filler Stone Dimensions	
		Min (in.)	Max (in.)
Gabion mattress	6	3	5
	9	3	5
	12	4	8
Gabion	12	4	8
	18	4	8
	36	4	8

## 3. Construction

- **3.3. Filter Fabric Placement.** Place filter fabric, if required, as shown on the plans. Place the filter fabric with its long axis parallel to the centerline of the structure, highway, or dam. Overlap the uphill or upstream sheet over the downhill or downstream sheet. Ensure adjacent sheets of filter fabric have a minimum overlap of ~~3 ft.~~ 2 ft. in each direction, or, alternatively, provide a minimum overlap of 1 ft. and sew the adjacent sheets of filter fabric together. Lap the ends of rolls at joints by at least ~~3 ft.~~ 2 ft. Secure filter fabric in place with nails or pins. Use 12-in. long, 3/16-in. diameter nails with 1.5-in. washers, or U-shaped steel pins with each leg at least 9 in. long. Space nails or pins at a maximum of 10 ft. in each direction and 5 ft. along the seams. Along the seams, place nails or pins through both strips of filter fabric at approximately the midpoint of the overlap. Place additional nails or pins as necessary to hold the filter fabric in position. Alternative anchorage and spacing may be used when approved. Keep the fabric material free of tension, stress, folds, wrinkles, or creases.

## 4. Measurement

- No Changes

## 5. Payment

- No Changes



## 1. Description

- No Changes

## 2. Materials

- See Table 1

<b>Pipe Type</b>	<b>AASHTO Specification</b>
Galvanized steel and aluminized steel	M 36
Aluminized Type 2	M 36
Polymer - coated	M 245 <del>(M-36)</del>
Asphalt - coated	<u>M 190</u>
Aluminum	M 196

- **2.2. Protective Coating.** Furnish bituminous coating, when required, that meets AASHTO M 190 and that tightly adheres to the metal, does not chip off in handling, and protects the pipe from deterioration ~~as evidenced by samples prepared from the coating material successfully meeting the Shock Test and Flow Test in accordance with Tex 522-G.~~

## 3. Construction

- No Changes

## 4. Measurement

- No Changes

## 5. Payment

- No Changes



### 1. Description

- No Changes

### 2. Materials

- **2.1. General.** 3rd paragraph
- Furnish material for precast formed and machine-made box culverts in accordance with ~~DMS-7310~~ DMS-7305
- 2.2.2. Precast. Multi-project fabrication plants for precast formed and machine-made box culverts must be approved in accordance with DMS-7305. The Materials and Tests Division maintains a list of approved multi-project precast box culvert fabrication plants on the Department’s MPL. Fabricate precast boxes in accordance with DMS-7305.
- **2.3.2. Precast.** Make, cure, and test compressive test specimens for precast formed and machine-made box culverts in accordance with DMS-7305.
- **2.5. Marking.** Designation “TX” for precast units fabricated in accordance with DMS-7305,
- **2.6.1. Boxes for Jacking Operations.** Variations in laying lengths of two opposite surfaces of the box must not exceed 1/4 in. Defects and Repair. Repair precast boxes, if necessary, in accordance with the annex of DMS-7305. Precast boxes may be rejected for any of the conditions stated in this annex.



### 3. Construction

- No Changes

### 4. Measurement

- No Changes

### 5. Payment

- No Changes



### 1. Description

- No Changes

### 2. Materials

- **2.1. Fabrication.** Multi-project fabrication plants, in accordance with ~~DMS-7310~~ DMS-7305
- Furnish material and fabricate reinforced concrete pipe in accordance with ~~DMS-7310~~ DMS-7305.
- **2.3. Marking.** Furnish each section of reinforced concrete pipe marked with the following information in accordance with ~~DMS-7310~~ DMS-7305:
  - designation “TX” for precast units fabricated in accordance with DMS-7305,
- **2.5. Causes for Rejection.** Individual sections of pipe may be rejected for any of the conditions in accordance with the annex of ~~DMS-7310~~ DMS-7305.
- **2.6. Repairs.** Make repairs, if necessary, in accordance with the annex of ~~DMS-7310~~ DMS-7305.





### 3. Construction

- No Changes

### 4. Measurement

- No Changes

### 5. Payment

- No Changes



### 1. Description

- No Changes

### 2. Materials

- **2.1. Concrete.** Furnish concrete in accordance with ~~DMS-7310~~ DMS-7305

### 3. Construction

- **3.1. Precast Junction Boxes, Manholes, and Inlets.** Construct formed and machine-made precast junction boxes, manholes, and inlets in accordance with ~~Item 420~~ DMS-7305 and as shown on the plans, except as otherwise specified in accordance with this Item.
- Multi-project fabrication plants that produce junction boxes, manholes, and inlets will be approved by the Materials and Tests Division in accordance with DMS-7305.
- ~~3.1.1. Lifting Holes.~~
- **3.1.1. Marking.** designation “TX” for precast units fabricated in accordance with DMS-7305,
- **3.1.2. Defects and Repair.** Repair precast junction boxes, inlets, and manholes, if necessary, in accordance with the annex of DMS-7305. Precast junction boxes, inlets, and manholes may be rejected for any of the conditions in accordance with this annex.

### 4. Measurement

- No Changes

### 5. Payment

- No Changes



## 1. Description

- No Changes

## 2. Materials

- **2.2.6. Defects and Repairs.** Occasional imperfections in manufacture or accidental damage sustained during handling may be repaired in accordance with the Department's Concrete Repair Manual. The repaired units will be acceptable if they are in accordance with this Item and the repairs are sound, properly finished, and cured in conformance with pertinent Specifications.

## 3. Construction

- No Changes

## 4. Measurement

- No Changes

## 5. Payment

- No Changes



### 1. Description

- No Changes

### 2. Materials

- **2.2.6. Defects and Repairs.** Occasional imperfections in manufacture or accidental damage sustained during handling may be repaired in accordance with the Department's Concrete Repair Manual. The repaired units will be acceptable if they are in accordance with this Item and the repairs are sound and properly finished and cured in conformance with pertinent Specifications. Repair damaged galvanizing in accordance with Section 445.3.5., “Repairs.”

### 3. Construction

- No Changes

### 4. Measurement

- No Changes

### 5. Payment

- No Changes



### 1. Description

- No Changes

### 2. Materials

- No Changes

### 3. Construction (2<sup>nd</sup> Paragraph)

- Install concrete pipe in accordance with Item 464, “Reinforced Concrete Pipe.” Install corrugated metal pipe in accordance with Item 460, “Corrugated Metal Pipe.” Install precast concrete box culvert in accordance with Item 462, “Concrete Box Culverts and Drains.”

### 4. Measurement

- No Changes

### 5. Payment

- No Changes





### 1. Description

- No Changes

### 2. Materials

- No Changes

### 3. Construction of Cast-in-Place Trench Drains

- Do not provide removable trench drain grates at any location where wheeled vehicles may drive over them, including roadway lanes, shoulders, and driveways.

### 4. Construction of Precast Trench Drains –No Changes

### 5. Construction of Slotted Drains

- No Changes

### 6. Measurement

- No Changes

### 7. Payment

- No Changes



## 1. Description

- No Changes

## 2. Materials

- ~~– corrugated metal pipe meeting Item 460, “Corrugated Metal Pipe,” of the size, type, design, and dimension shown on the plans~~

## 3. Construction

- No Changes

## 4. Measurement

- No Changes

## 5. Payment

- No Changes



### 1. Description

- No Changes

### 2. Equipment

- **2.1. Micro Milling.** Use concrete milling equipment capable of maintaining constant depth of cut as specified. Equip machine with automated debris collection system. Provide micro-milling drum with tool spacing up to 1/4 in. Do not allow travel speed in feet per minute to exceed 2/3 of the drum revolutions per minute.

### 3. Construction

- **3.1. Micro Milling.**
- **3.2. Hydro-Demolition.**
- Remove plugs after completion of the work. Provide water for hydro-demolition in accordance with Section 421.2.5., “Water,” Table 1.
- Provide remotely operated vacuum unit to reclaim water, debris, and concrete cuttings. Collect water, debris, and concrete cuttings in a separate unit located off the bridge deck. All equipment on bridge deck must be in accordance with Sections 7.16.2., “Construction Equipment Operating on Structures,” and 7.16.3., “Loads on Structures.” Alternate reclamation equipment may be approved, provided a structural analysis, signed, and sealed by a licensed professional engineer, is submitted that considers depth of removal and deterioration of structural elements.



### 3. Construction

#### – 3.2. Hydro-Demolition.

- Do not damage reinforcing steel. If more than 1/2 of the diameter of the reinforcing bar is exposed and the bar is corroded around the circumference, adjacent concrete is rust-stained, or the bar is debonded from the substrate concrete, chip away concrete or water-blast to provide a minimum clearance of 3/4 in. or 1.5 times the largest-size aggregate in the repair material. Stop and recalibrate machine when depth of removal or surface roughness is different from that approved.
- Cold planing or milling operations before hydro-demolition will be subsidiary to hydro-demolition. At minimum, hydro-demolition will be no less than 3/4 in. unless otherwise shown on the plans.

- ~~3.4. Diamond Grinding. Saw-cut transversely the ground areas to provide grooved surface in accordance with Section 483.3.5., “Sawing Grooving,” unless otherwise directed.~~

- ~~3.5 Saw Grooving. Cut grooves into concrete surface perpendicular~~ parallel to the structure centerline. ~~Ensure the minimum distance to the first groove, measured perpendicular to the edge of the concrete joint or from the junction between the concrete and the metal leg of the joint, is 1 in.~~

### 4. Measurement

- No Changes

### 5. Payment

- No Changes



## 1. Description

- No Changes

## 2. Materials

- ~~— **2.3. Structural Glued Laminated Timber.** Meet the grade, species, and other requirements outlined in ANSI/AITC A 190.1, “Structural Glued Laminated Timber.” Bond all members with wet-use adhesive conforming to ASTM D2559. For individual laminations preservative treated before gluing, dry treated laminations to a moisture content of 16% or less and surface all lamination mating faces immediately before gluing.~~
- ~~— Furnish glued laminated timber from a fabricator certified by AITC or who is a member of the APA Engineered Wood Systems (APA EWS) quality assurance program. AITC maintains a list of certified fabricators of structural glued laminated timber. The APA maintains a list of APA EWS trademarked glulam timber fabricators. Provide glued laminated timber marked with an AITC quality inspection mark or an APA EWS trademark as applicable.~~

## 3. Equipment

- No Changes

## 4. Construction

- No Changes

## 5. Measurement

- No Changes

## 6. Payment

- No Changes





## 1. Description

- No Changes

## 2. Materials

- [Table 1 completely revised](#)

## 3. Equipment

- No Changes

## 4. Construction

- No Changes

## 5. Measurement

- No Changes

## 6. Payment

- No Changes

**Table 1**  
**AWPA Commodity Specification and Use Category by Product**

Product	AWPA Commodity Specification <sup>1</sup>	AWPA Use Category <sup>2</sup>
Round timber piling for land or freshwater use, including foundation piles	E	UC4C
Round timber piling for brackish or saltwater use—marine piles	G	UC5C
Round guard fence posts	B	UC4B
Rectangular guard fence posts	A	UC4B
Guard fence blocks	A	UC4A
Wire fence posts (round)	B	UC4A
Timber and lumber for land or freshwater use	A	UC4C
Timber and lumber for use in brackish or salt water	G	UC5C

1. For minimum preservative retention requirements, refer to this designated commodity specification for each product within Use Category System Standard U1 of AWPA for the preservative and wood species combination provided. For preservative penetration and assay zone requirements, refer to this designated commodity specification for each product within Use Category System Standard T1 of AWPA.
2. Refer to this designated use category for each product when locating the minimum preservative retention requirement in the pertinent commodity specification within Use Category System Standard U1 of AWPA.



## 1. Description

- Raise and support existing structures as shown on the plans. Raising a bridge may be associated with permanent raising to increase vertical clearance or temporary raising to accomplish other work.
- ~~MATERIALS have been removed~~

## 2. Construction

- **2.1. Preparation of Plans.** (2nd Paragraph) If traffic is to be returned on a partially raised bridge affecting roadway elevation, obtain approval of all scenarios of raised condition.
- **2.3. General Construction Requirements.** Verify anchor bolts, closed joints, or other appurtenances do not restrict vertical movement before jacking. Jack spans and beams from the existing bent cap or temporary falsework unless otherwise shown on the plans. Limit the amount of lift as specified below unless the approved engineering plans allow otherwise.
- Loosen and remove all anchor bolt nuts or cut the anchor bolts as approved to allow free vertical movement before raising. Replace all damaged or cut anchor bolts either by butt welding to existing bolts or by drilling into the existing concrete cap a minimum of 12 in. and grouting in new bolts. Do not damage the bent cap reinforcing steel when installing new anchor bolts. Replace all damaged or lost anchor bolt nuts. Weld in accordance with Item 448, “Structural Field Welding.”
- Repair or replace by an approved method any portions of the structure damaged by the raising operation. Repair concrete damage in accordance with Item 429, “Concrete Structure Repair.”



### 2. Construction

- ~~– **2.4. Raising of Spans.** Verify anchor bolts, closed joints, or other appurtenances do not restrict vertical movement before jacking. Jack spans from the existing bent cap or temporary falsework unless otherwise shown on the plans.~~
- ~~– Loosen and remove all anchor bolt nuts or cut the anchor bolts to allow free vertical movement before raising. Replace all damaged or cut anchor bolts either by butt welding to existing bolts or by drilling into the existing concrete cap a minimum of 12 in. and grouting in new bolts. Do not damage the bent cap reinforcing steel when installing new anchor bolts. Replace all damaged or lost anchor bolt nuts. Weld in accordance with Item 448, “Structural Field Welding.”~~
- 2.5. Raising Beams. Raise beams to allow for other work as shown on the plans. Do not raise beam more than 1 in. higher than adjacent beams.
- 2.6. Support Structure. Raise and provide temporary support of existing structure as needed to complete repair work as shown on the plans. Provide adequate material for foundation of shoring and prepare subgrade to prevent settlement for shored structure.

### 3. Measurement

- No Changes

### 4. Payment

- No Changes



- Construction Division (CST) has created a companion document to highlight changes from the 2014 Spec Book to the 2024 Spec Book
  - A link to the document can be found [here.](#)
  - Located on the CST website at: [www.hereitis.com](http://www.hereitis.com)
- Contact Information
  - [CST\\_Training@txdot.gov](mailto:CST_Training@txdot.gov)





# 2024 Standard Specifications Changes 500 Series Items Miscellaneous Construction





### Changes to the Specifications

- Deleted wording : ~~wording is in red and struck through~~
- New wording: wording is in blue and underlined
- Changed wording: the ~~old~~ new wording

The information presented is a quick comparison between the 2014 and 2024 Standard Specifications Books.

Due to the number of revisions made, not every change is listed. Multiple Items have changes so significant that a quick comparison would not suffice. To familiarize yourself with the Items of the 2024 Standard Specifications Book, you will need to read the Item Specification in its entirety.



26 Items in the 2014 Spec Book

3 “New” Items

- Item 503 Portable Changeable Message Sign
- Item 505 Truck-Mounted Attenuator (TMA) and Trailer Attenuator (TA)
- Item 527 Colored Textured Concrete (Split from Item 528)

2 “Name Changes”

- Item 528 Landscape Pavers (Previously Colored Textured Concrete and Landscape Pavers)
- Item 533 Rumble Strips (Previously Milled Rumble Strips)

29 Items in the 2024 Spec Book



## 1. Description

- No changes

## 2. Measurement

- No changes

## 3. Payment

- [Material on hand will not be considered as a construction item earned when calculating mobilization payment.](#)



## 1. Description

- [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 AASHTO Manual for Assessing Safety Hardware \(MASH\). 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 was not approved, or was not self-certified. In such case, devices that meet NCHRP-350 or MASH-2009 may be used.](#)
- [Temporary work zone \(TWZ\) traffic control devices manufactured on or before December 31, 2019, must at a minimum have been successfully tested to the crashworthiness requirements of NCHRP-350 or MASH-2009. These devices may continue to be used throughout their normal service lives.](#)
- [Such TWZ traffic control devices include portable sign supports, barricades, portable traffic barriers designated exclusively for use in TWZs, crash cushions designated exclusively for use in TWZs, longitudinal channelizers, and truck-mounted attenuators \(TMAs\) and trailer attenuators \(TAs\).](#)
- [Category I devices \(i.e., lightweight devices\), such as cones, tubular markers, and drums without lights or signs attached, may be self-certified by the vendor or provider, with documentation provided to the Department, or as shown on Department's Compliant Work Zone Traffic Control Device List.](#)

## 2. Construction

- No Changes

## 3. Measurement

- No Changes

## 4. Payment

### 4.1 Barricades, Signs, and Traffic Handling.

- [TMAs and TAs will be paid for under Item 505, "Truck-Mounted Attenuator \(TMA\) and Trailer Attenuator \(TA\)." Portable changeable message signs will be paid for under Item 503, "Portable Changeable Message Sign." Portable traffic signals will be paid for under Item 510, "One-Way Traffic Control," unless otherwise shown on the plans.](#)
- [In accordance with Section 7.2.3., "Safety Contingency," funds have been included in the project budget to improve the effectiveness of traffic handling and enhance safety during the course of this project.](#)



This New Item has been added to the Spec Book but was previously SS6001. Changes listed below were compared to the Special Specification. To best to familiarize yourself with the current information, **please read this Item Specification in its entirety.**

**1. Description**

- No changes

**2. Materials**

- **2.5. Cellular Telephone Modem.** ~~When~~ As shown on the plans, provide a cellular ~~telephone~~ modem connection to communicate with the PCMS unit remotely.

**3. Construction**

- No Changes

**4. Measurement**

- No Changes

**5. Payment**

- Reimbursement for the repair of damaged devices will be in accordance with Section 7.17.1., “Reimbursable Repair.”





### Editorial and reorganization changes

#### General

- Restroom may be shared but must be accessible and in proximity to Engineer's field office and laboratory; portable toilet allowed unless otherwise shown on the plans.
- Provide reliable internet access when shown on the plans.
- When detailed on the plans, provide for storage of the nuclear gauge that meets the exposure and security requirements of the Department and Texas Department of State Health Services (DSHS).

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### Buildings

- Buildings that were considered adequate by the Department before the implementation of these Standard Specifications, except for Type E structures, may remain in service for their useful life. Buildings may either be under shared roof with the Contractor and supplier facilities or separate facilities. Provide secured Department-only access to secure the Department's furnished equipment and files by portioning the rooms, separate laboratories, or other approved methods. All rooms will have a minimum 8-ft. ceiling and aisles at least 5 ft. in width.
- Furnish strong and stable landings, ramps, and steps to all exterior doors of the building if needed for access.
- For new buildings, coordinate with the Engineer on the layout to meet the requirements of this Item.

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### Field Offices

- Provide at least two workbenches or tables at least 30 in. wide and 5 ft. long, or as approved.

### Laboratory

- Provide unless otherwise shown on the plans:
  - A minimum 4 x 4 ft. landing on all exterior doors when steps are necessary
  - Stable platforms for testing equipment
  - A floor strong and stable enough to support testing equipment
  - Exhaust fans for removing volatiles and aggregate fines from room air
  - An area for a desk that is minimum 30 in. x 5 ft., at least three drawers of filing cabinets, and at least one chair



### Structure Types

- Type A Structure (Concrete Laboratory). Provide at least 100 sq. ft. of gross floor area and one exterior door.
- Type B Structure (Field Office and Concrete Laboratory). Provide at least 320 sq. ft. of gross floor area. Provide enough 30 in. width counter space for performing testing, to place test equipment, for a preparation area, and for a sink.
- Type C Structure (Field Office). Provide at least 200 sq. ft. of gross floor area with at least one exterior door and two windows.
- Type D Structure (Hot-Mix Asphalt Laboratory). Provide enough floor area that will accommodate 30 in. width counter space for performing testing, to place test equipment, for a preparation area, and for a sink. For gyratory presses that are shared, the equipment is not required to be locked behind the Department's secured access but must be under the same roof or in proximity to the Department's laboratory and must meet the Department's requirements including the requirements in test procedures, comparable and consistent test results, safety, efficiency, and accessibility.



### Measurement and Payment

- The work performed, equipment, utilities, testing equipment as specified for Department use, labor, tools, and incidentals will not be paid for directly, but will be subsidiary to pertinent Items.





This New Item has been added to the Spec Book but was previously SS6185. Changes listed below were compared to the Special Specification. To best to familiarize yourself with the current information, please read this Item Specification in its entirety.

1. **Description**
  - No Changes
2. **Materials**
  - No Changes
3. **Construction**
  - The plans show the number of TMAs or TAs ~~needed~~ required, the number of days or hours, and for which construction phases.
4. **Measurement**
  - **4.1. Truck-Mounted Attenuator or Trailer Attenuator (Stationary).** This Item will be measured by ~~the each or by~~ the day. TMAs or 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 or TA set up and operational on the worksite.
  - **4.2. Truck-Mounted Attenuator or Trailer Attenuator (Mobile Operation).** This Item will be measured by the hour or by the day. The time begins once the TMA or TA is ready for operation at the pre-determined site and stops upon Engineer notification. When measurement by the hour is specified, at least 4 hr. will be paid each day for each operating TMA or TA used in a mobile operation. When measurement by the day is specified, a day will be measured for each TMA or TA set up and operational on the worksite.
5. **Payment**
  - Reimbursement for the repair of damaged devices will be in accordance with Section 7.17.1., “Reimbursable Repair.”



## 1. Description

- Install, maintain, and remove erosion, sedimentation, and environmental control measures to prevent or reduce the discharge of pollutants [and protect environmental resources](#) in accordance with the Stormwater Pollution Prevention Plan (SWP3) [and environmental layout](#) as shown on the plans. [Comply with](#) Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit (CGP) TXR150000 requirements. “Control measures” are defined as **Best Management Practices** BMPs used to prevent or reduce the discharge of pollutants and [measures to protect environmental resources](#).
- Erosion and sediment control devices must be selected from the Erosion Control Approved Products **or Sediment Control Approved Products** List. Perform work in a manner to prevent degradation of receiving waters, [protect environmental resources](#), facilitate project construction, and comply with applicable federal, state, and local regulations.

## 2. Materials

- **2.4 Construction Exits.** Provide materials ~~that meet the details~~ as shown on the plans and [in accordance with](#) this Section.
- **2.9 Temporary Sediment Control Fence.** Provide a net-reinforced fence using woven geotextile fabric. Logos visible to the traveling public ~~will~~ [are](#) not ~~be~~ allowed.

## 3. QUALIFICATIONS, TRAINING, AND EMPLOYEE REQUIREMENTS

- **3.1. Contractor Responsible Person Environmental (CRPE) Qualifications and Responsibilities.** Provide and designate in writing at the preconstruction conference a CRPE and alternate CRPE who have overall responsibility for ~~the storm water management program.~~ [managing environmental compliance](#). The CRPE will implement stormwater and erosion control practices, ~~will~~ oversee and observe stormwater control measure monitoring and management, ~~will~~ [oversee environmental compliance requirements](#), and monitor the project site daily and produce daily monitoring reports as long as there are BMPs in place or soil-disturbing activities are evident ~~to ensure compliance~~ [in accordance](#) with the SWP3 and TPDES CGP **General Permit** TXR150000. [Take required training in accordance with Section 7.7.4.4, “Training.”](#)
- [Maintain daily monitor reports and make them available within 24 hr. upon request.](#) During time suspensions when work is not occurring or on Contract non-workdays, daily inspections are not required unless a rain event has occurred. The CRPE will provide recommendations [pertinent](#) ~~on how to improve~~ [to improving](#) the effectiveness of control measures.



- Ensure training is completed in accordance with Section [7.7.4.4](#), ~~(506.3.3)~~ by all [pertinent applicable](#) personnel before employees work on the project. Document, [maintain, and submit a list and make available within 24 hr. of a request](#), a list, signed by the CRPE, of all [pertinent applicable](#) Contractor and subcontractor employees who have completed the training. Include the employee's name, the training course name, and the date the employee completed the training. ~~Provide the most current list at the preconstruction conference or before SWP3 or soil disturbing activities. Update the list as needed and provide the updated list when updated~~
- **3.2 Contractor Superintendent Qualifications and Responsibilities.** Provide a superintendent [who that](#) is competent, has experience with and knowledge of stormwater management, and is knowledgeable of the requirements and the conditions in accordance with TPDES CGP [General Permit](#) TXR150000. [Take training as required in accordance with Section 7.7.4.4.](#)
- ~~**3.3 Training.** All Contractor and subcontractor employees involved in soil disturbing activities, small or large structures, storm water control measures, and seeding activities must complete training as prescribed by the Department.~~

## 4. Construction

- **4.2.1 Commencement.** Implement the SWP3 as shown [on the plans](#) and as directed. Contractor-proposed recommendations for changes [are will be](#) allowed as approved. [Act in accordance with](#) ~~Conform to the established guidelines in the~~ TPDES CGP [General Permit](#) TXR150000 to make changes.
- 4.3.4 Restricted Activities and Required Precautions. Do not discharge onto the ground or [into](#) surface waters any pollutants such as chemicals, raw sewage, fuels, lubricants, coolants, hydraulic fluids, bitumens, or any other petroleum product.
- [Immediately address chemical and hydrocarbon spills caused by the Contractor. Keep a spill kit onsite.](#)

## 5. Measurement.

- No Changes

## 6. Payment.

- 6.1.1 Installation. Installation will be paid for as “Rock Filter Dams (Install)” of the type [and slope as](#) specified.
- 6.5.2 Maintenance Earthwork for Erosion and Sediment Control for Cleaning and Restoring Control Measures. This price is full compensation for excavation, embankment, and re-grading, including [dewatering for removal of accumulated sediment...](#)



## 1. Description

- Construct and maintain detours. Remove detours ~~when directed~~ unless otherwise directed or shown on the plans.

## 2. Materials

- No Changes

## 3. Construction

- Public traffic safety and convenience ~~is~~ are essential. Maintain detours in accordance with Section 7.2.4., “Public Safety and Convenience”; Article 7.17., “Contractor’s Responsibility for Work”; Section 7.17.4., “Detours”; and this Item.

## 4. Measurement

- No Changes

## 5. Payment

- Maintenance of detours constructed ~~will not be paid for directly but will be subsidiary to this item. will be paid for in accordance with Section 7.17.4. Maintenance of pavement on detours that use existing pavement will be paid for in accordance with Article 7.17, “Contractor’s Responsibility for Work.”~~ will be paid for in accordance with Section 7.17.4. Maintenance of pavement on detours that use existing pavement will be paid for in accordance with Article 7.17, “Contractor’s Responsibility for Work.”



## 1. Description

- No Changes

## 2. Work Methods

- **2.1. Flagger Control Method.** Furnish flaggers in accordance with ~~the requirements of~~ Article 7.2., “Safety,” ~~at all entry points to the work zone to stop traffic.~~ on each approach to the activity area to control traffic. Furnish additional flaggers at all intersections, public driveways, and commercial driveways as determined by the Engineer. Furnish a STOP/SLOW paddle ~~that meets the requirements of~~ in conformance with the TMUTCD for each flagger. If desired, use automated flagger assistance devices if approved.
- **2.2. Pilot Car Method.** Furnish a licensed driver and pilot vehicle with required signs attached. Furnish flaggers in accordance with Article 7.2. on each approach to the activity area to control traffic. Furnish additional flaggers at all intersections, public driveways, and commercial driveways as determined by the Engineer. ~~Provide~~ Furnish STOP/SLOW paddles and signs ~~that meet the requirements of~~ in conformance with the TMUTCD.

## 3. Measurement

- **3.2. Pilot Car Method.** Additional flaggers, when directed by the Engineer, will be measured by the flagger control method.

## 4. Payment

- No Changes



## 1. Description

- No Changes

## 2. Materials

- **2.1.2. Steel.** Barrier sections will be furnished as shown on the plans. ~~Barrier sections must meet the crash testing requirements of NCHRP 350 or MASH TL3 or TL4 specifications as per test matrix for Longitudinal Barriers.~~
- **2.1.3. Concrete and Steel.** The Engineer may approve the use of the product if:
  - the applicable crash test criteria in accordance with Item 502, “Barricades, Signs, and Traffic Handling,” are met.
- **2.1.4. Connection Hardware.** Provide connection hardware for Department-furnished barrier sections as shown on the plans. Provide the type of connection hardware as shown on the plans in accordance with Item 442. “Connection hardware” is defined as being sufficient hardware for one complete connection between two traffic barrier sections, including the required bolts, nuts, washers, structural steel shapes, and dowels. Connection hardware will be retained by the Department unless otherwise shown on the plans.
- **2.1.5. Furnished by the Department.** The Department will furnish connection hardware for Department-furnished barrier sections unless otherwise shown on the plans. “Connection hardware” is defined as being sufficient hardware for one complete connection between two traffic barrier sections, including the required bolts, nuts, washers, structural steel shapes, and dowels.

## 3. Construction

- ~~Remove formwork after the concrete has reached sufficient strength to prevent physical damage to the member. Move barrier sections to a storage area and place them on blocking to prevent damage when they have attained sufficient strength to permit handling without causing visible damage.~~ Once concrete has attained sufficient strength to resist stresses due to handling, remove formwork and place barrier sections on blocking in a designated storage area.
- For concrete barrier, the areas that require pinning will be as shown on the plans. For steel barrier, the acceptable deflection distance will be as shown on the plans.
- Repair or replace any pavement damaged in the process of installing, moving, or removing barrier sections at the Contractor’s expense.





### 4. Measurement

- [As shown on the plans, connection hardware will be measured by each complete connection between two traffic barrier sections for Department-furnished barrier. For pinning of concrete barrier as shown on the plans, pinning of the barrier will be measured by each pin.](#)

### 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 as follows.
  - For concrete barrier only, bid for “Portable Traffic Barrier” of the work category (furnish and install, designated source, move, stockpile, remove, [or connection hardware](#)); shape (e.g., single-slope, F-shape, or low-profile); and type (e.g., Type 1, 2, or 3) of barrier sections specified. This price includes equipment, labor, tools, and incidentals.



## 1. Description

- No Changes

## 2. Equipment

- At the Contractor's option, an electronic ticket delivery system (e-ticketing) may be used instead of printed tickets. The use of e-ticketing will require written approval of the Engineer. At minimum, the approved system must:
  - provide real-time e-tickets in conformance with the applicable bid items,
  - automatically generate e-tickets using software and hardware fully integrated with the automated scale system used to weigh the material and designed such that data input cannot be altered by the Contractor or the Engineer,
  - provide the Engineer access to the e-ticketing data in real time using a web-based or app-based system compatible with iOS,
  - provide offline capabilities to prevent data loss if power or connectivity is lost; and
  - require the Contractor and the Engineer to accept or reject the e-ticket and provide the ability to record the information required by the applicable bid items, as well as any comments. Record the time of the approval or rejection and include it in the summary spreadsheet described below. Provide each party the capability to edit their respective actions and any entered information.
- The Contractor may discontinue use of the e-ticket system and provide printed tickets as needed to meet the requirements of the applicable bid items.

## 3. Measurement and Payment

- No Changes



### 1. Description

- No Changes

### 2. Materials

- Use **approved** dry-shake color hardener or integral concrete colorant unless otherwise shown on the plans. Ensure integral color, if used, is in accordance with ASTM C979. Provide colored wax as a curing membrane ~~meeting the requirements of~~ in accordance with ASTM C309 or as shown on the plans.

### 3. Construction

- If no type, size, color, or pattern is specified, use a brick shape with a minimum size of 3-3/4 in. long, 7-3/4 in. wide with 3/8-in. joints in a red color using a running bond pattern.

### 4. Measurement

- No Changes

### 5. Payment

- No Changes



## 1. Description

~~—Colored Textured Concrete. Furnish and place colored textured concrete.~~

## 2. Materials

~~—Colored Textured Concrete.~~

- **2.1.1. Pavers.** Furnish pavers meeting the requirements of ASTM C936; made using normal-weight aggregates ~~conforming to~~ in accordance with ASTM C33; and conforming to the shape, color, laying pattern, and dimensions shown on the plans. If no type, size, color, or pattern is given, use a brick-type paver with a minimum size of 3-3/4 in. long, 7-3/4 in. wide, and 2-3/8 in. tall, with a river red color or equivalent using a running bond pattern. Furnish certification from the manufacturer stating that the interlocking paving units have been tested and ~~meet all the requirements of~~ are in accordance with ASTM C936. Furnish additional paving units when required for testing by the Department.

## 3. Construction

~~—Colored Textured Concrete.~~

## 4. Measurement

- No Changes

## 5. Payment

~~—Excavation and embankment will not be paid for directly but will be subsidiary to this Item unless otherwise shown on the plans.~~

~~—Colored Textured Concrete.~~

# Item 529 Concrete Curb, Gutter, and Combined Curb and Gutter



1. **Description**
  - No Changes
2. **Materials**
  - When curbs are monolithically placed with the concrete pavements, use the same class of concrete as the concrete pavement.
  - ~~When approved,~~ Use of fibers ~~meeting the requirements of~~ in accordance with DMS-4550, “Fibers for Concrete,” to replace reinforcing steel in Class A concrete is allowed unless otherwise shown on the plans.
3. **Construction**
  - Furnish and place reinforcing steel in accordance with Item 440 unless fiber-reinforced concrete is used.
  - **3.2. Extruded or Slipformed Concrete.** ~~Hand-tamp and sprinkle subgrade or foundation material before concrete placement.~~ Shape and compact subgrade, foundation, or pavement surface to the line, grade, and cross-section shown on the plans. Lightly sprinkle subgrade or foundation material immediately before concrete placement.
  - **3.3. Curb Joints for Concrete Pavements.** Provide transverse expansion and contraction joints in the curb of the same type and location as the adjacent or underlying pavement. Use expansion joint material of the same thickness and type required for the pavement. Extend expansion joints through the curb. Place reinforcing steel for non-monolithic curb construction joints as shown on the plans, unless otherwise approved. Form or saw the contraction joint through the full depth of the monolithic curb.
4. **Measurement**
  - No Changes
5. **Payment**
  - No Changes



**1. Description**

- No Changes

**2. Materials**

- No Changes

**3. Construction**

- No Changes

**4. Measurement**

- This Item will be measured by the square yard of the final pavement surface, [as placed in the field, including radii and turnout.](#)

**5. Payment**

- No Changes





## 1. Description

- Construct hydraulic cement concrete sidewalks, [Americans with Disabilities Act ramps, and steps.](#)

## 2. Materials

- [Use of fibers in accordance with DMS-4550, “Fibers for Concrete,” to replace reinforcing steel in Class A concrete is allowed unless otherwise shown on the plans. Dose fibers in accordance with the Department’s MPL of prequalified fibers for concrete.](#)
- [Furnish detectable warning material in accordance with DMS-4350, “Detectable Warning Material.”](#)

## 3. Construction

- [Furnish and place reinforcing steel in accordance with Item 440 unless fiber-reinforced concrete is used.](#)
- Ensure that abrupt changes in sidewalk elevation do not exceed [1/4 in., sidewalk cross-slope does not exceed 2%, curb ramp grade does not exceed 8.3%, and flares adjacent to the ramp do not exceed 10% slope measured parallel to the curb line.](#) Ensure that the sidewalk depth and reinforcement are not less than the driveway cross-sectional details as shown on the plans where a sidewalk crosses [and is part of the](#) concrete driveway.
- [Use construction methods in conformance with manufacturers’ recommendations when installing detectable warning surface. Install detectable warning surface as shown on the plans.](#)

## 4. Measurement

- A curb ramp consists of the ramp, landing [or turning space](#), adjacent flares or side curb, and detectable warning surface as shown on the plans. [Steps will be measured by the square yard of horizontal surface area.](#)

## 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 “Concrete Sidewalks” of the depth specified, [“Concrete Sidewalk \(Steps\),”](#) and “Curb Ramps” of the type specified.
- Sidewalks that cross and ~~connect to~~ [are part of the](#) concrete driveways or turnouts will be measured and paid for in accordance with Item 530, “Intersections, Driveways, and Turnouts.”

## Item 533 Rumble Strips (Previously Milled Rumble Strips)



Changes to this Item include information from SS5062 and include filling of milled rumble strips. Due to the number of modifications that have been made, to best to familiarize yourself with the current information, **please read this Item Specification in its entirety.**

1. **Description**
  - Construct milled rumble strips. [This Item also includes filling rumble strips in asphalt and concrete pavement to provide a smooth, stable surface with the line and grade conforming to the adjacent pavement.](#)
2. **Materials**
  - [2.1. Filling Milled Asphalt Rumble Strips.](#)
  - [2.2. Filling Milled Concrete Rumble Strips.](#)
3. **Equipment**
  - [3.2. Filling Milled Asphalt Rumble Strips.](#)
4. **Construction**
  - [4.2. Filling Milled Asphalt Rumble Strips.](#)
  - [4.3. Filling Milled Concrete Rumble Strips.](#)
5. **Measurement**
  - **5.1. Milled rumble strips.** ~~Rumble strips will be measured~~ Measurement will be longitudinally [along the roadway](#), by the foot.
  - [5.2. Filling Milled Concrete and Asphalt Rumble Strips.](#) Measurement will be longitudinally along the roadway, by the foot, regardless of the rumble strip width or depth.
6. **Payment**
  - **6.1. Milled Rumble Strips.** The work performed in accordance with this Item and [measured](#) as provided under “Measurement” will be paid for at the unit price bid for “[Milled Rumble Strips \(Asphalt\)\(Shoulder\)](#),” “[Milled Rumble Strips \(Asphalt\)\(Centerline\)](#),” “[Milled Rumble Strips \(Concrete\)\(Shoulder\)](#),” and “[Milled Rumble Strips \(Concrete\)\(Centerline\)](#).” This price is full compensation for equipment, labor, materials, tools, and incidentals.
  - [6.2. Filling Milled Asphalt Rumble Strips.](#)
  - [6.3. Filling Milled Concrete Rumble Strips.](#)



## 1. Description

- No Changes

## 2. Materials

- ~~When approved,~~ Use of fibers meeting the requirements of in accordance with DMS-4550, “Fibers for Concrete,” to replace reinforcing steel in Class A concrete is allowed unless otherwise shown on the plans.

## 3. Construction

- Furnish and place reinforcing steel in accordance with Item 440, unless fiber-reinforced concrete is used.

## 4. Measurement

- No Changes

## 5. Payment

- No Changes



## 1. Description

- No Changes

## 2. Materials

- **2.1. Metal Beam Rail Elements. Markings.** Permanently mark each metal beam rail element (including curved sections) with the information required in AASHTO M 180. ~~In addition, permanently mark all curved sections of metal beam rail element with the radius of the curved section in the format "R=XX ft." Markings must be on the back of the metal beam rail section away from traffic and visible after erection.~~
- ~~**Terminal Anchor Posts.** Furnish new terminal anchor posts from steel conforming to the material requirements of ASTM A36. Fabricate posts according to Item 441, "Steel Structures." Galvanize terminal anchor posts after fabrication according to Item 445, "Galvanizing."~~

## 3. Equipment

- ~~**Terminal Anchor Posts.**~~

## 4. Measurement

- ~~**Terminal Anchor Sections.**~~
- **4.6. Long-Span System.** Measurement will be by ~~the foot of fence~~ each long-span system, complete in place. Each long-span system will be from ~~Fence will be measured on the face of the rail, in place, between~~ the first CRT to the last CRT ~~posts~~ in the system.

## 5. Payment

- ~~**Terminal Anchor Section.**~~



## 1. Description

- No Changes

## 2. Construction

- Completely remove posts and any concrete or grout backfill surrounding the posts. Furnish backfill material and backfill the hole with material equal in composition and density to the surrounding soil unless otherwise directed.

## 3. Measurement

- No Changes

## 4. Payment

- Removal of mow strips or riprap will be paid for separately under the pertinent Items.
- Removal of curb ~~associated with~~ pertinent to the metal beam guard fence transitions will not be paid for directly but will be subsidiary to this Item.



Due to the number of modifications that have been made regarding relocation, removal, and installation to best to familiarize yourself with the current information, **please read this Item Specification in its entirety.**

## 1. Description

- Furnish and install, [relocate, or remove](#) cable barrier systems and cable barrier terminal sections at the locations shown on the plans.

## 2. Materials

- Cable barrier systems approved for use have passed NCHRP Report 350 or MASH of the test level specified (e.g., TL-3, TL-4) ~~with a maximum deflection of 8-ft.~~ [The post spacing and resulting deflection characteristics of the system will be such that contact with obstructions within the project site will be avoided when the system is impacted.](#)
- [Salvage approved material as shown on the plans.](#)

## 3. Construction

- ~~— Install cable barrier system in accordance with the details, dimensions, and requirements~~ [Perform work as shown on the plans and in accordance with manufacturer's recommendations.](#)
- [3.2. Relocate.](#)
- [3.3 Remove.](#)
- ~~— Training. Provide training as specified by the Department.~~

## 4. Measurement

- [4.2. Relocate.](#) Measurement will be by the foot of cable barrier system and by each cable barrier terminal system relocated.
- [4.3 Remove.](#) Measurement will be by the foot of cable barrier system and by each cable barrier terminal system removed.

## 5. Payment

- [5.1 Install.](#) The unit price bid for “Cable Barrier System (Install)” and “Cable Barrier Terminal Section (Install)” is full compensation for furnishing cable barrier system, cable barrier terminal section, concrete [foundations \(excluding mow strips\)](#), delineators, equipment, labor, tools, and incidentals.
- [5.2 Relocate.](#)
- [5.3 Remove.](#)



# Item 545 Crash Cushion Attenuators



1. **Description**
  - [For permanent placement or temporary work zone locations](#), furnish and install, move and reset, or remove crash cushion attenuators.
2. **Materials**
  - [2.2. Work Zone Crash Cushion Attenuators](#). Furnish new or used crash cushion attenuators in accordance with Item 502, “Barricades, Signs, and Traffic Handling,” and as shown on the plans. Sacrificial water-filled crash cushion attenuators (which are designated for exclusive use in temporary work zone locations) may be reused for the applicable payment items as long as the crash cushions are undamaged, all parts from the pertinent installation manual are supplied, and the devices are not older than 7 yr. from the manufacture date. If the 7-yr. manufacture date occurs during project construction, the device may be used to the termination of the project up to 10 yr. from the manufacture date.
  - **2.3. Concrete**. Furnish ~~Glass-S~~ concrete for pads ~~that meets~~ [in accordance with](#) Item 421, “Hydraulic Cement Concrete,” [and the foundation requirements as shown on the plans](#).
3. **Construction**
  - **3.2. Moving and Resetting**. [New cushions that are initially placed in temporary work zone applications and later moved to a permanent location will be paid for under “Move and Reset.”](#)
  - **3.3. Removal**. [Retain and remove Contractor-furnished temporary work zone attenuators from the right of way when no longer in use. Existing attenuators salvaged from the project, meeting the above requirements, may be reused for temporary work zone installations unless otherwise shown on the plans. Retain and remove existing attenuators unless otherwise shown on the plans. For existing attenuators designated as salvageable, remove the crash cushion attenuators from an existing location, clean and repair units before inspection and return them to the Department, and stockpile in the area shown on the plans. Dispose of unsalvageable materials in accordance conformance with federal, state, and local regulations.](#)
4. **Measurement**
  - No Changes
5. **Payment**
  - The work performed and materials furnished in accordance with this Item and measured as provided for under “Measurement” will be paid for at the unit price bid for “Crash Cushion Attenuator (Furnish and Install, Designated Source, Move and Reset, Stockpile, or Remove)” of the category, width (N or W), and test level, [and for work zones the width, test level, and designation “Work Zone.”](#)
  - [Incidental maintenance and incident repair and replacement will be paid for in accordance with Article 7.17., “Contractor’s Responsibility for Work,” and Article 9.7., “Payment for Extra Work and Force Account Method.”](#)
  - **5.5. Remove**. This price is full compensation for removing [an existing or Contractor-furnished](#) crash cushion attenuator from the project [site](#) and retention by the Contractor.



## 1. Description

- No Changes

## 2. Materials

- No Changes

## 3. Construction

- **3.4. Electrical Grounds.** [For fence placed on bridge structures, install grounds as shown on the plans.](#)

## 4. Measurement

- No Changes

## 5. Payment

- No Changes



## 1. Description

- No changes

## 2. Materials

- **2.4. Barbed Wire.** Furnish barbed wire in accordance with ASTM A121, ~~Class 1 and as shows on the plans.~~ ~~Use barbed wire consisting of 2 strands of 12-1/2 gauge wire, twisted with 2 point 14 gauge barbs spaced no more than 5 in. apart or other barbed wire as directed.~~
- **2.5. Wire Mesh.** Furnish wire mesh fabric in accordance with ASTM A116, ~~Class 1 to the height and design as~~ shown on the plans. ~~Use at least 10 gauge wire for the top and bottom wires and at least 12-1/2 gauge wire for the intermediate wires and vertical stays.~~

## 3. Construction

- Snub or guy fencing at the critical point of grade depressions and fence sags, where stresses tend to pull posts out of the ground, with a double 9-gauge galvanized wire.
- Install corner, end, pull, or angle post assembly before stretching the wire between posts. Connect existing cross fences to the new fences and corner posts at junctions with existing fences.
- Unless otherwise directed, T-posts, steel pipe brace posts, steel pipe gate posts, steel pipe post assemblies, and water gap posts must remain in place.
- Posts removed for the convenience of the Contractor because of brush removal or other issues will be replaced at the Contractor's expense.
- Remove brush and trees from fence areas where work is performed. Dispose of debris off the right of way, in conformance with federal, state, and local regulations unless otherwise approved. When approved, chip debris and spread in a thin layer on the right of way.
- Install water gaps at locations as shown on the plans.

## 4. Measurement

- Fencing will be measured by the foot of wire fence, excluding gates and water gaps. Gates will be measured as each gate. Water gaps will be measured by the foot as the distance between fence ends.

## 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 "Wire Fence," "Water Gap," or "Gate." ~~of the type specified.~~ This price is full compensation for furnishing, preparing, hauling, and installing fence, water gap, and gate materials; excavation, backfilling, and disposal of surplus material; removing and trimming of brush and tree limbs; and equipment, labor, tools, and incidentals.

# Item 556 Pipe Underdrains



## 1. Description

- No Changes

## 2. Materials

- **XX2.2. Filter Material.** Furnish hard, durable, and clean sand, gravel, crushed stone, or crushed shell meeting the gradation by percent weight as shown in Table 2 unless otherwise shown on the plans. Filter material must be free of clay balls or other organic or deleterious matter ~~as determined by in accordance with Tex-413-A. Do not furnish crushed limestone unless shown on the plans.~~ Use of crushed limestone is allowed unless otherwise shown on the plans.
- Loss by decantation in accordance with Tex-406-A must not exceed 1% of the material retained on a No. 4 sieve or 4% of the material passing a No. 4 sieve. ~~Use Type B or Type C filter material around the underdrains unless otherwise shown on the plans. Do not place Type A or Type D filter material within 6 in. of perforations.~~ Use Type G filter material around the underdrains unless otherwise shown on the plans.

Table 2  
Acceptable Gradations for Filter Material

Sieve Size	Type B	Type C	Type E	Type F	Type G
	% Retained on Sieve (Tex-401-A)				
1-1/2"	-	0-10	Grade 2 Coarse Aggregate <sup>2</sup>	Grade 3 Coarse Aggregate <sup>2</sup>	Grade 4 (57) Coarse Aggregate <sup>2</sup>
3/4"	0-10	20-40			
3/8"	15-35	-			
#4	35-55	40-60			
#20	35-65 <sup>1</sup>	35-65 <sup>1</sup>			
#50	75-100 <sup>1</sup>	75-100 <sup>1</sup>			

1. Of the portion finer than No. 4 sieve.
2. Refer to Table 4 in Item 421, "Hydraulic Cement Concrete."

**NOTE for Table 2:** Sieve # 8, #16, #30, #100 no longer in the table because they were applicable only for Type A and Type D which have now been removed. Type E, Type F and Type G have been added. Gradation for Type B and Type C has not changed.

## 3. Construction

- No Changes

## 4. Measurement

- No Changes

## 5. Payment

- No Changes



Due to the number of modifications that have been made, to best to familiarize yourself with the current information, **please read this Item Specification in its entirety.**

## 1. Description

- No Changes

## 2. Equipment

- Changes to this Article include:
  - Removal of inertial profiler for Surface Test Type A.
  - Addition of “grooving” equipment and the tolerances specified

## 3. Work Methods

- Changes to this Article include:
  - The removal of “Transverse Profile” measurements
  - Surface Test Type A, as well as QC and referee testing for Surface Type B
  - Acceptance, payment adjustments, and corrective action for; Surface Type A, Surface Type B, IRI for concrete and asphalt pavement, and localized roughness

## 4. Measurement and Payment

- Changes to this Article include:
  - Table 1 address Ride Quality of Asphalt Pavements with Schedule 1, 2, and 3
  - Table 2 addresses Ride Quality of Concrete Pavements with Schedule 4 and 5



Construction Division (CST) has created a companion document to highlight changes from the 2014 Spec Book to the 2024 Spec Book

- A link to the document can be found [here](#).
- Located on the CST website at: [www.hereitis.com](http://www.hereitis.com)

Contact Information

- [CST\\_Training@txdot.gov](mailto:CST_Training@txdot.gov)





# 600 Items

2024 Spec Book update

February 16, 2024



## Item 610 – Roadway Illumination Assemblies

- Removed field sampling and testing of luminaires according to Tex-1110-T
- Relocation – added instruction to clean optical assembly when reusing
- Replace Luminaires – added replacement of conductors and breakaway fuseholders when necessary.







## Item 613 – High Mast Illumination Poles

- Fabrication - Added ultrasonic testing of seam welds
- Added specification for mechanically-guided thermal-cut holes
- Added ultrasonic testing of base plate weld for toe cracks after galvanizing
- Updated Fabrication Tolerances table





## Item 614 – High Mast Illumination Assemblies

- Description – added new item for Replace Luminaires
- Installation – added support assembly to fabrication instructions
- Replace Luminaires – added instructions to Construction, Measurement, and Payment for replacement of high mast luminaires.





## Item 616 – Performance Testing of Lighting Systems

- Removed acceptance of the Contract as a requirement to relieve Contractor of maintenance responsibilities. Contractor only has to pass 14 day performance test before turning maintenance over to Department.





## Item 617 – Temporary Roadway Illumination

- Changed Description, Measurement, and Payment to two items: Setup and Removal, and Maintain Roadway Illumination.
- Setup and Removal is measured by each Roadway Illumination Assembly installed and removed. A relocation is considered an instance of Setup and Removal.
- Maintain Roadway Illumination is measured by the Month and covers maintenance of the complete illumination system.
- Electrical service responsibilities were changed to match that for Item 681 Temporary Traffic Signals.







## Item 618 – Conduit

- Added Prepare Existing Conduit spec from SS6027 to Item 618
- Minor clarifications of wording to other sections






## Item 619 – Intelligent Transportation System (ITS) Multi-Duct Conduit

- Special Spec 6016 was converted into the new Standard Spec item 619
- Differentiates between conduit for communication or electrical with ITS multi-duct conduit

**Special Specification 6016**



**Intelligent Transportation System (ITS) Multi-Duct Conduit**

---

**1. DESCRIPTION**

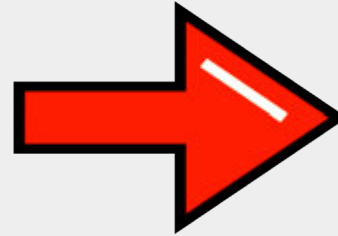
Furnish and install Intelligent Transportation System (ITS) multi-duct conduit identified for fiber optic communication use of the type and size specified. Provide conduit suitable for installation in an outdoor underground environment including constant immersion in water, mounted to retaining walls, and mounted above ground on the underside of a bridge without any degradation to the conduit.

---


**2. MATERIALS**

Provide new materials that comply with the details shown on the plans, the requirements of this Item, and the requirements of the following Items:

- Item 400, "Excavation and Backfill for Structures,"
- Item 401, "Flowable Fill,"
- Item 402, "Trench Excavation Protection,"
- Item 421, "Hydraulic Cement Concrete,"
- Item 445, "Galvanizing,"
- Item 476, "Jacking, Boring, or Tunneling Pipe or Box,"
- Item 618, "Conduit," and
- Item 620, "Electrical Conductors".



**Item 619**



**Intelligent Transportation System (ITS) Multi-Duct Conduit**

---

**1. DESCRIPTION**

Furnish and install intelligent transportation system (ITS) multi-duct conduit identified for fiber optic communication use of the type and size specified. Provide conduit suitable for installation in an outdoor underground environment, including constant immersion in water, mounted to retaining walls, and mounted above ground on the underside of a bridge without any degradation to the conduit.

---

**2. MATERIALS**

Provide new materials that comply with the details shown on the plans, the requirements of this Item, and the requirements of the following Items.

- Item 400, "Excavation and Backfill for Structures"
- Item 401, "Flowable Backfill"
- Item 402, "Trench Excavation Protection"
- Item 421, "Hydraulic Cement Concrete"
- Item 445, "Galvanizing"
- Item 476, "Jacking, Boring, or Tunneling Pipe or Box"
- Item 618, "Conduit"
- Item 620, "Electrical Conductors"



## Item 619 – Intelligent Transportation System (ITS) Multi-Duct Conduit (Cont'd)

- Materials and Equipment sections were moved from SS 6016 to a new DMS-110XX, referenced by Item 619. This will allow new materials to be specified in the DMS rather than in the standard spec Item.
- Item 619 has 2 additional paragraphs at end of 1st section of CONSTRUCTION 3.1

Ensure a watertight seal of conduit to structure wall when terminating conduit.

Install markers using a method that firmly and securely anchors the marker a minimum of 1 ft. into the ground to prohibit twisting and easy removal. When located at an ITS ground box, marker may be placed within the concrete riprap apron avoiding rebar reinforcement. Spacing between markers should not exceed 1,000 ft. or as shown on the plans, and markers should be placed at significant changes in direction, such as a 90° turn. Do not place markers in any roadway paved surface.





## Item 620 – Electrical Conductors

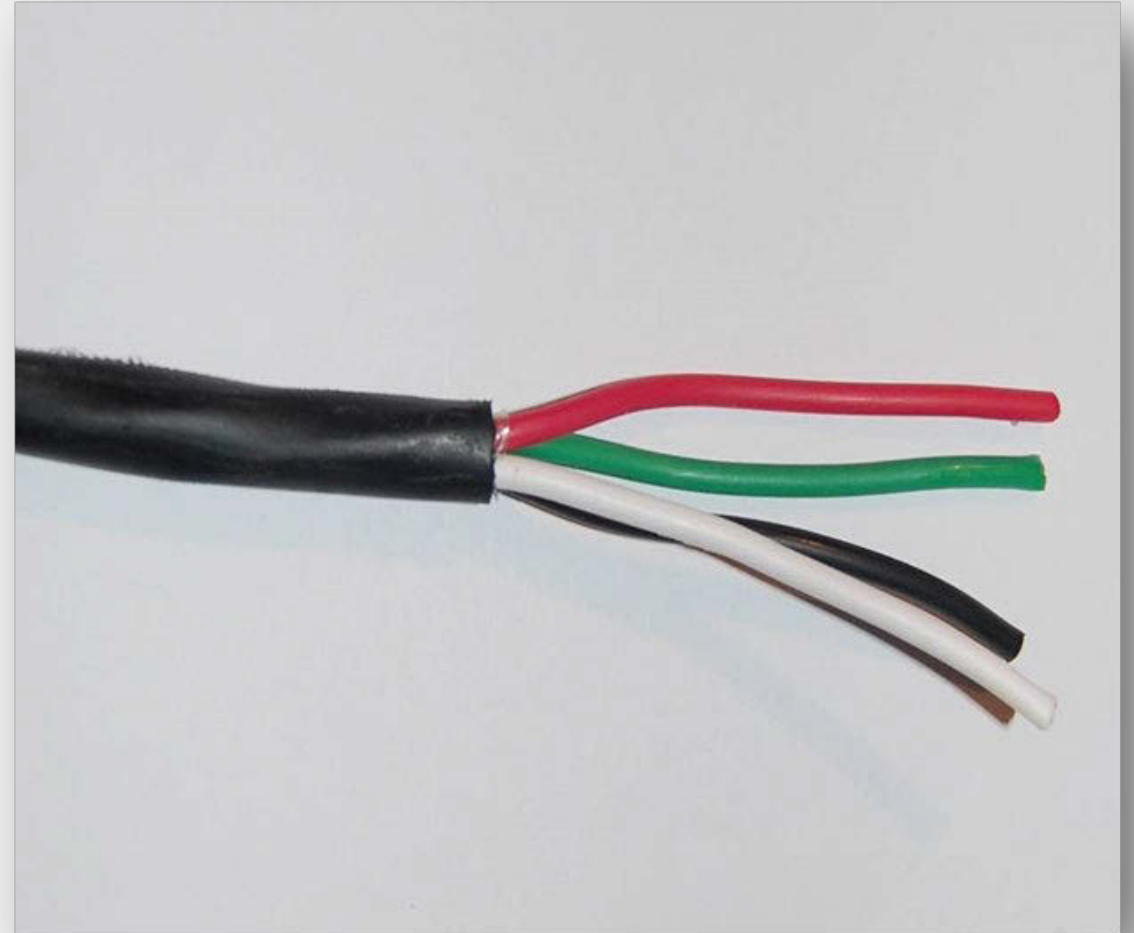
- Minor clarifications of wording





## Item 621 – Tray Cable

- Minor clarifications of wording





## Item 622 – Duct Cable

- Removed Item 622 Duct Cable as standard item due to low usage on projects.
- Converted to Statewide Special Specification

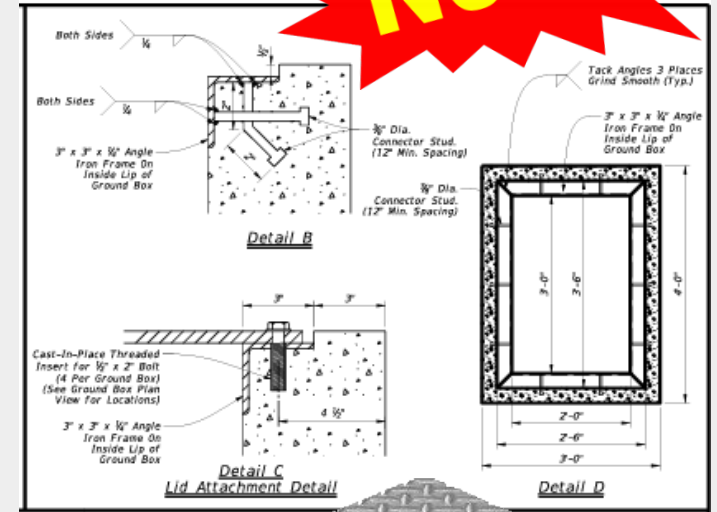




# Item 600 Series – 2024 Specification Book Rewrite

## Item 623 – ITS Ground Box

- Special Spec 6186 converted to Standard Spec 623



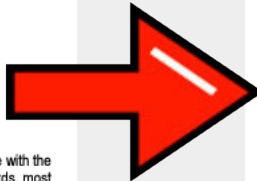
Type 1 TxDOT Ground Box - 12"x24"x24" - Concrete

### Special Specification 6186



#### Intelligent Transportation System (ITS) Ground Box

<b>1.</b>	<b>DESCRIPTION</b>
	Construct, furnish, install or remove Intelligent Transportation System (ITS) ground boxes for fiber optic communication infrastructure complete with lids.
<b>2.</b>	<b>MATERIALS</b>
	Provide new materials that comply with the details shown on the plans, the requirements of this Item, and the requirements of the following items: <ul style="list-style-type: none"> <li>Item 420, "Concrete Substructures,"</li> <li>Item 421, "Hydraulic Cement Concrete,"</li> <li>Item 432, "Riprap,"</li> <li>Item 440, "Reinforcement for Concrete,"</li> <li>Item 471, "Frames, Grates, Rings, and Covers,"</li> <li>Item 618, "Conduit", and</li> <li>Item 620, "Electrical Conductors."</li> </ul>
	Provide new ITS ground boxes constructed of precast concrete or polymer concrete in accordance with the National Electrical Code (NEC) and National Electrical Manufacturers Association (NEMA) standards, most current version. Faulty fabrication or poor workmanship in materials, equipment, or installation will be justification for rejection. Provide manufacturer's warranties or guarantees when offered as a customary trade practice.
2.1.	<b>Precast Concrete.</b> Provide precast concrete ground boxes and aprons that comply with the details shown on the plans, the requirements of this Item, and in accordance with the following: <ul style="list-style-type: none"> <li>construct ground boxes with Class A concrete in accordance with Item 421, "Hydraulic Cement Concrete," unless otherwise directed,</li> <li>provide American Society for Testing and Materials (ASTM) A 615 Grade 60 reinforcement steel in accordance with Item 440, "Reinforcing Steel," and</li> <li>provide steel for the frames and covers in accordance with Item 471, "Frames, Grates, Rings, and Covers," unless otherwise approved by the Engineer.</li> </ul>
2.1.1.	<b>Loading Requirements.</b> Designed to withstand American Association of State Highway and Transportation Officials (AASHTO) H-20 loading. Manufacturer must furnish certification of conformance with H-20 loading.
2.2.	<b>Polymer Concrete.</b> Manufacture ground box and ground box cover from polymer concrete reinforced with 2 continuous layers of fiberglass fabric. Provide fabricated precast polymer concrete ground boxes and aprons that comply with the details shown on the plans, the requirements of this Item, and in accordance with American Standards Institute (ANSI)/Society of Cable Telecommunications Engineers (SCTE) - ANSI/SCTE 77, most current version. <ul style="list-style-type: none"> <li><b>Polymer Concrete.</b> Construct polymer concrete from catalyzed polyester resin, sand, and aggregate. Polymer concrete containing chopped fiberglass or fiberglass-reinforced plastic is prohibited. Ensure a minimum compressive strength of 11,000 psi.</li> </ul>



### Item 623



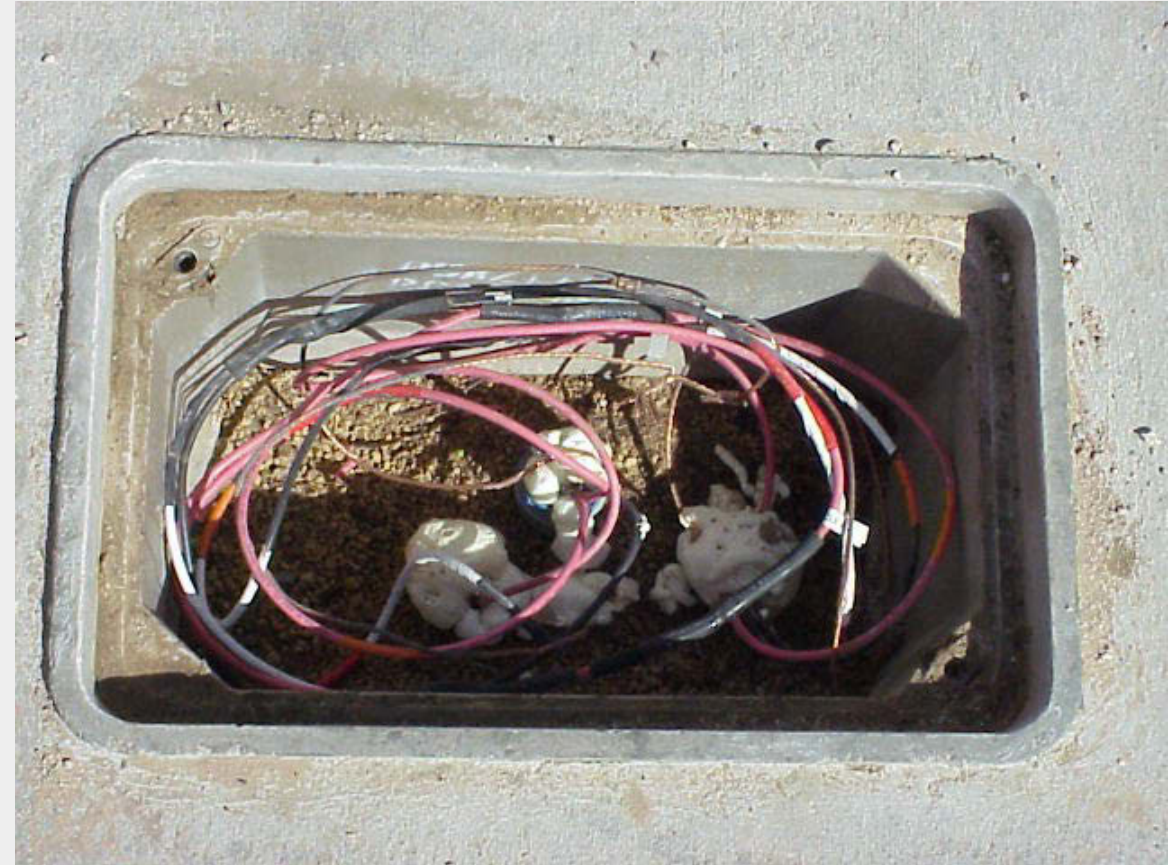
#### Intelligent Transportation System (ITS) Ground Boxes

<b>1.</b>	<b>DESCRIPTION</b>
	Construct, furnish, install, or remove Intelligent Transportation System (ITS) ground boxes for fiber optic communication infrastructure complete with lids.
<b>2.</b>	<b>MATERIALS</b>
	Provide new materials that comply with the details shown on the plans, the requirements of this Item, and the requirements of the following items. <ul style="list-style-type: none"> <li>Item 420, "Concrete Substructures"</li> <li>Item 421, "Hydraulic Cement Concrete"</li> <li>Item 432, "Riprap"</li> <li>Item 440, "Reinforcement for Concrete"</li> <li>Item 471, "Frames, Grates, Rings, and Covers,"</li> <li>Item 618, "Conduit"</li> <li>Item 620, "Electrical Conductors"</li> </ul>
	Provide new ITS ground boxes constructed of precast concrete or polymer concrete in accordance with the NEC and in conformance with NEMA standards. Faulty fabrication or poor workmanship in materials, equipment, or installation will be justification for rejection. Provide manufacturer's warranties or guarantees when offered as a customary trade practice.
2.1.	<b>Precast Concrete.</b> Provide precast concrete ground boxes and aprons as shown on the plans and in accordance with the following. <ul style="list-style-type: none"> <li>Construct ground boxes with Class A concrete in accordance with Item 421, unless otherwise directed.</li> <li>Provide ASTM A615 Grade 60 reinforcement steel in accordance with Item 440.</li> <li>Provide steel for the frames and covers in accordance with Item 471, unless otherwise approved.</li> </ul>
2.1.1.	<b>Loading Requirements.</b> Designed to withstand AASHTO H-20 loading. Manufacturer must furnish certification of conformance with H-20 loading.
2.2.	<b>Polymer Concrete.</b> Manufacture ground box and ground box cover from polymer concrete reinforced with two continuous layers of fiberglass fabric. Provide fabricated precast polymer concrete ground boxes and aprons as shown on the plans and in accordance with ANSI/Society of Cable Telecommunications Engineers (SCTE) 77. <ul style="list-style-type: none"> <li><b>Polymer Concrete.</b> Construct polymer concrete from catalyzed polyester resin, sand, and aggregate. Polymer concrete containing chopped fiberglass or fiberglass-reinforced plastic is prohibited. Ensure a minimum compressive strength of 11,000 psi.</li> <li><b>Fiberglass Fabric.</b> The base glass on the fiberglass fabric must be alumina-lime borosilicate Type E glass. The reinforcing fabric must line the entire inner and outer surfaces. Obtain approval for the fabric before production.</li> </ul>



## Item 624 – Ground Boxes

- Added aggregate to Payment
  - This price is full compensation for excavating, backfilling, and **aggregate** ...
- Minor clarifications of wording





## Item 625 – Zinc-Coated Steel Wire Strand

- Minor changes



### MATERIALS

Provide new materials in accordance with ASTM A475, ~~Utilities-Grade~~utilities grade or better, Class A coating. These requirements include, but are not limited to, the properties ~~given~~shown in Table 1. Furnish ~~7~~seven wires per strand.

Table 1  
Dimensions and Properties

Nominal Diameter of Strand (in.)	Nominal Diameter of Coated Wires (in.)	<del>Approx.</del> <u>Approximate</u> Weight per 1,000 ft. (lb.)	Minimum Breaking Strength (lb.)	Minimum Zinc Coating <del>Wt.</del> <u>Weight</u> Class A (oz./sq. ft.)
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# Item 600 Series – 2024 Specification Book Rewrite

## Item 627 – Treated Timber Poles

- Minor changes: Wording/punctuation for clarification.
- Updated table 1 to refer to AWPA



~~Butt slivering due to felling is permitted if the distance from the outside circumference is at least 1/4 of the butt diameter and the height is not more than 1 ft. Use preservative treatment in accordance with AWPA U1, Commodity Specification D.~~ Furnish poles with a minimum net retention of preservative treatment in accordance with Table 1.

Mark all poles by branding in accordance with Table 2.

**Table 1**  
Retention of Preservative Treatment

Treatment	Minimum Retention
Creosote	9.0 lb./ft. <sup>3</sup>
Pentachlorophenol	0.45 lb./ft. <sup>3</sup>
CCA	0.6 lb./ft. <sup>3</sup>

**Table 2**  
Timber Pole Markings

Marking	Description of Marking
PTC	Supplier's code or trademark (for example, Pole Treating Company).
F-01	Plant location and year of treatment (for example, Forestville, 2001).
SPC	Species and preservative code (for example, southern pine, creosote).
5-35	Class-length (for example, Class 5, 35-ft. pole).

Place the bottom of the brand squarely on the face of the pole 10 ft. (plus or minus 2 in.) from the butt.

Furnish treated poles in accordance with AWPA to the minimum net retention and penetration of preservative treatment in accordance with Table 1.

**Table 1**  
AWPA Commodity Specification and Use Category for Poles

Product	AWPA Commodity Specification <sup>1</sup>	AWPA Use Category <sup>2</sup>
Poles (southern pine)	D	UC4C

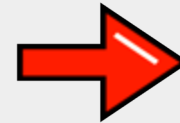
1. For minimum preservative retention requirements, refer to AWPA Use Category System Standard U1, Commodity Specification D, for the preservative provided for the southern pine poles. For preservative penetration and assay zone requirements, refer to AWPA Use Category System Standard T1, Commodity Specification D.
2. Refer to this designated Use Category when locating the minimum required retention for the provided preservative in AWPA Use Category System Standard U1, Commodity Specification D.

Mark all poles by branding in accordance with Table 2.

**Table 2**  
Timber Pole Markings

Marking	Description of Marking
PTC	Supplier's code or trademark (e.g., Pole Treating Company)
F-20	Plant location and year of treatment (e.g., Forestville, 2020)
SPC	Species and preservative code (e.g., southern pine, creosote)
5-35	Class length (e.g., Class 5, 35-ft. pole)

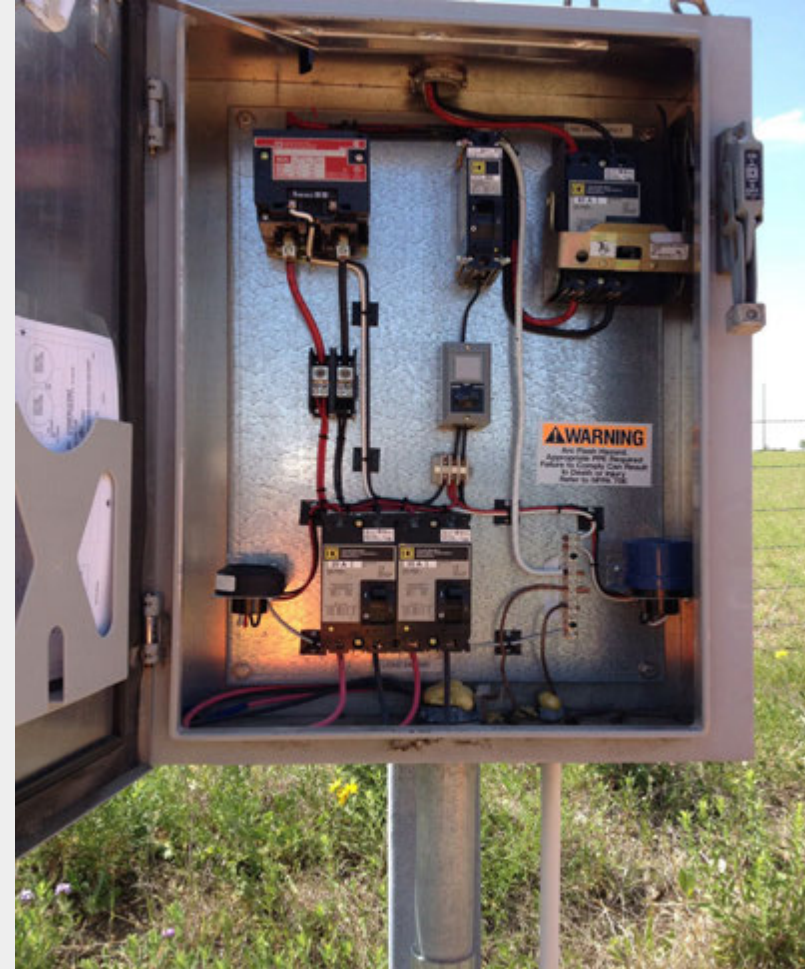
Place the bottom of the brand squarely on the face of the pole 10 ft. (±2 in.) from the butt.





## Item 628 – Electrical Services

- Payment – Added note that permanent service be put in Department's name after construction unless otherwise shown.
- Minor wording changes





## Item 636 – Signs

- Added wording to allow for "replaced" sign supports
- Removed description of "Refurbishing"
- Removed "Sign Blanks", "Sign Face Retroreflectorization", and "Sign Messages" sections and replaced with new section "Signs". New section references DMS-8301 "Highway Sign Fabrication"
- Hardware – Changed wording from "to avoid tearing" to "when in direct contact with"
- Added section for "Sign Identification Decals" referencing DMS-8315, previously shown under Item 643







## Item 636 – Signs, (Cont'd)

- 3.1 - Removed information about "Fabrication" and replaced with "Decals"
- Removed "Refurbishing" section
- Documentation - Consolidated wording about required documentation
- Removed measurement for refurbishing signs
- 5.2 "Replacement" - Added wording to allow existing hardware to be reused (when applicable)
- Removed section 5.3 - "Refurbishing"



## Item 643 – Sign Identification Decals

- This section has been relocated within Item 636

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



## Item 644 – Small Roadside Sign Assemblies

- Added requirement under Item 3.5 Store all signs to be reused off the ground and in a vertical position until erected.





## Item 647 – Large Roadside Sign Supports and Assemblies

- Added Description
  - 1.4 Replacement. Replace existing large roadside sign assemblies.
- Deleted text within 3.2 Installation.
  - "At the Contractor's option, sign supports may be cast in the concrete foundation as a unit. However, if installation is made with the upper post section attached, do not expose the support to traffic until the sign panel is properly affixed, unless otherwise approved."
- Deleted text with 3.3 Relocation.
  - Or lengthen – "Reuse the existing supports and shorten *or lengthen* them as ..."



## Item 650 – Overhead Sign Supports

- Added Item 420, "Concrete Sub Structures"
- Added wording to require COSS plan and elevation sheets, COSS & OSB-SZ table sheets, and any other sheets needed to support design calculations
- Changed all instances of "size of pipe" to "pipe diameter and wall thickness"

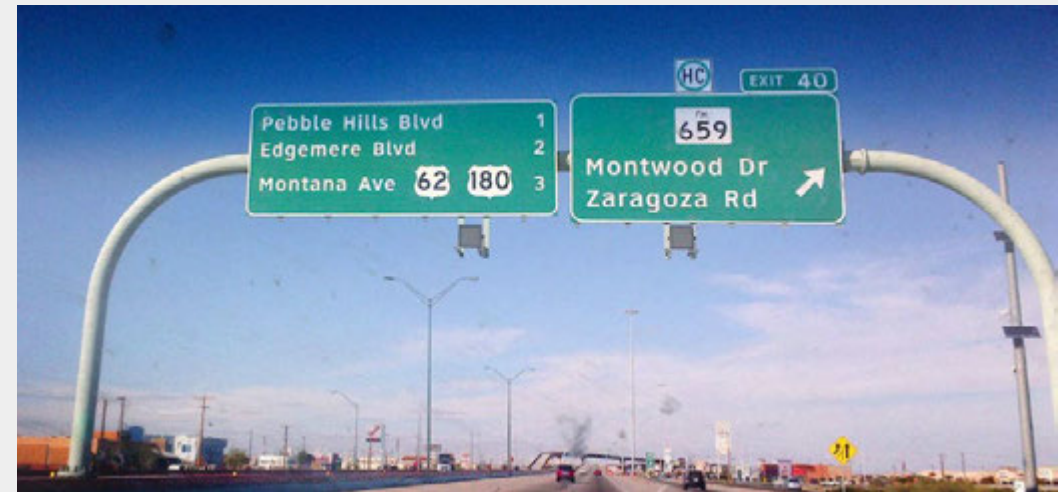






## Item 650 – Overhead Sign Supports, (Cont'd)

- Added "Tapered columns are permitted if the provided calculations demonstrate that the column is adequate at the level of the truss-to-column connection"
- Added details for monotube-type overhead sign supports
- Added text about Ultrasonic Testing (UT) and measuring required dimensions
- Added text for "mechanically guided thermal cut-holes"





## Item 654 – Sign Walkways

- 3.2 Fabrication (new text in bold)
  - Fabricate and weld sign walkways in accordance with Item 441, the requirements of this Item; and AWS D1.1. **Fabrication plants that produce sign walkways must be approved in accordance with DMS-7380, “Steel Non-Bridge Member Fabrication Plant Qualification.” The Materials and Tests Division maintains a list of approved sign walkway fabrication plants on the Department’s MPL.**



## Item 656 – Foundations for Traffic Control Devices

- No major changes



## Item 658 – Delineator and Object Marker Assemblies

- Added description of "Replacement"
- Simplified phrasing - Changed "in accordance with details" to "as"
- Consolidated paragraphs 1 and 2 under section 3.1 "Installation"
- Removed "Install surface-mount and other types of delineators and object markers in accordance with details shown on the plans"
- Added section 3.3 "Replacement"



## Item 658 – Delineator and Object Marker Assemblies, (Cont'd)

- Consolidated wording into one sentence. Added wording for replacement.
- Clarified wording about plans quantity measurements
- Added "Install High Speed/High Impact Assemblies", "Replace Delineator Assemblies", and "Replace Object Marker Assemblies"
- 5.2 "Removal" – Removed sentence stating that removal is subsidiary to bid items.
- Added section 5.3 "Replacement"





## Item 662 – Work Zone Pavement Markings

- Minor changes
  - 2.1 Nonremovable Markings: Added "paint and beads"
  - 2.2 Removable and Short-term Markings: Added "traffic buttons", also removed "multipolymer pavement markings" to do not use list
  - 3.3 Performance Requirements: Updated visible distance from 300' to 320' (8 skiplines) for daylight conditions



## Item 666 – Reflectorized Pavement Markings

- New guidance on the use of Multipolymer Pavement Markings (MPM)
- Expanded mobile retro-reflectometer specification and TTI Certification requirements
- New 6-inch width requirement for stripping compared to the old 4-inch requirement
- New Type 1, thermoplastic heating requirements
- Expanded direction on when inadequate markings should be replaced, more than 5% of the markings





## Item 666 – Reflectorized Pavement Markings, (Cont'd)

- Expanded surface cleaning, preparation and payment definitions
- Expanded definitions of raised profile markings
- New durability requirements
- New retroreflectivity requirements for each type of pavement markings
- New specifications for High Performance and All-Weather Markings
- Expanded payment definitions for marker types and surface preparation

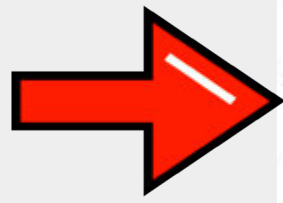
# Item 600 Series – 2024 Specification Book Rewrite



## Item 667 – Mobile Retroreflectivity Data Collection for Pavement Markings

- Special Spec 6438 governs mobile retro data collection and is required for all Item 666 projects
- SS 6438 converted to Item 667

Special Specification 6438	
Mobile Retroreflectivity Data Collection for Pavement Markings	
1.	<b>DESCRIPTION</b> 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.	<b>EQUIPMENT AND PERSONNEL</b>
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.	<b>MRDC DOCUMENTATION AND TESTING</b>
	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.



Item 667	
Mobile Retroreflectivity Data Collection for Pavement Markings	
1.	<b>DESCRIPTION</b> 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 that collects the MRDC data.
2.	<b>EQUIPMENT AND PERSONNEL</b>
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 E1710. Maintain, service, and calibrate all portable retroreflectometers in conformance with the manufacturer's instructions.
2.3.	Operating Personnel for 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 using the certified mobile retroreflectometer.
2.4.	Additional Personnel. Provide any other personnel necessary to compile, evaluate, and submit the data obtained from MRDC.
2.5.	Safety Equipment. Supply and operate all required safety equipment to perform this service.
3.	<b>MRDC DOCUMENTATION AND TESTING</b>
	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 3 working days after the day the data are collected. Submit all raw unmodified data collected in addition to all other data. Provide data files in Microsoft Excel or another approved format. 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 at least 10 working days before beginning any work. The format must meet specification and be approved 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 3 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.





## Item 668 – Prefabricated Pavement Markings and Rumble Strips

- Expanded definitions of type B & C markings
- Expanded Measurement and Payment definitions
- 3.2 Placement Limitations removed





## Item 668 – Prefabricated Pavement Markings and Rumble Strips, (Cont'd)

- Newly included Rumble Stripe Markings
- Newly included Durability Requirements
- **3.6.1 Durability (new):** Provide materials that do not lose more than 5% of the material in any 1-ft section. Measure the durability with ASTM D913.
- **3.7 Performance Period:** replaced "markings" with "materials"
- **5. Payment:** added "or Prefabricated Rumble Strips of the type, color, and width specified as applicable"





## Item 672 – Raised Pavement Markers

- Minor changes to **2. Materials** section:

- remove hyphen from retro-reflect
- Add II-C-C
- 2 is now "two"

- Changes to **3. Construction** section:

- Added the words "If necessary, remove and replace" and "in accordance to this Item" in paragraph 4.
- Changed "accordance" to "conformance" 12th paragraph
- Added "All RPMs must meet performance requirements for at least 30 calendar days after installation."



**II-C-C**

## Item 600 Series – 2024 Specification Book Rewrite

### Item 677 – Eliminate Existing Pavement Markings and Markers

- **2. Materials** added Item 315, "Fog Seal"
- **4. Construction:** added reference to "Pavement Markings Handbook" for additional information
  - **4.1 Surface Treatment Method:** minor rewording for clarification
  - **4.2 Burn Method:** added "Ensure the burning heads are not left in one place too long to prevent pavement damage."





## Item 677 – Eliminate Existing Pavement Markings and Markers, (Cont'd)

- **4.3 Blasting Method:** added "high-pressure" to water blasting
- **4.4 Mechanical Method:** added "Do not use flail milling on groved concrete or porous asphalt.
- **4.5 (new) Corrective Actions:** "Whenever removed markings on asphalt surfaces, continue to simulate pavement markings to and extent determined by the Engineer to cause driver confusion, apply a fog seal or slurry at least 2 ft wide over the area where pavement markings were removed as approved."



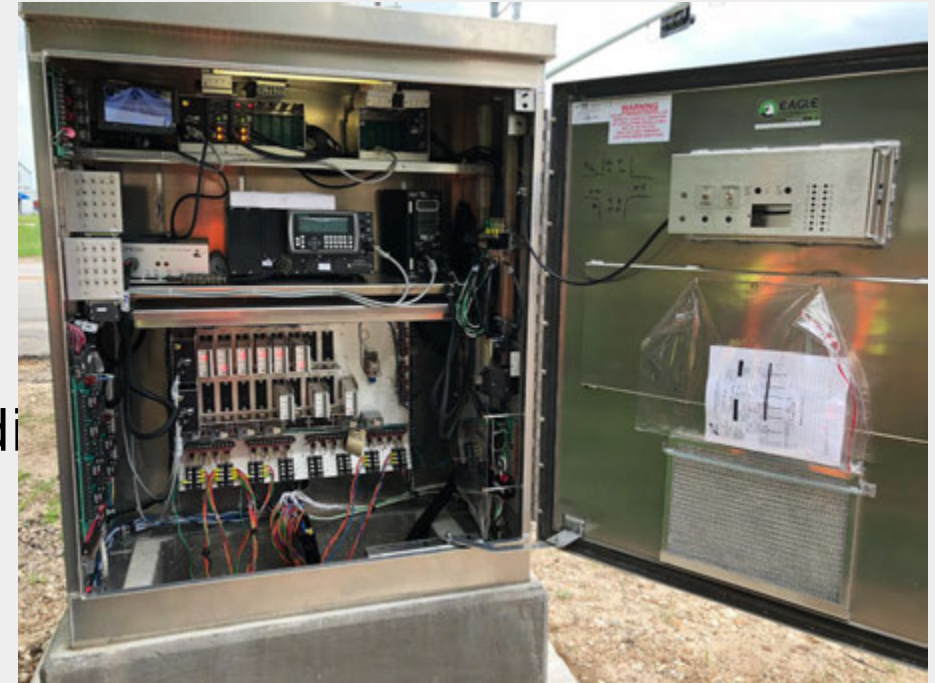
## Item 678 – Pavement Surface Preparation for Markings

- **2. Materials:** added "When abrasive blasting is used,"
- **4. Construction:** replaced "blast cleaning" with "blasting methods in accordance with Section 677.4.3 Blasting Method"



## Item 680 – Highway Traffic Signals

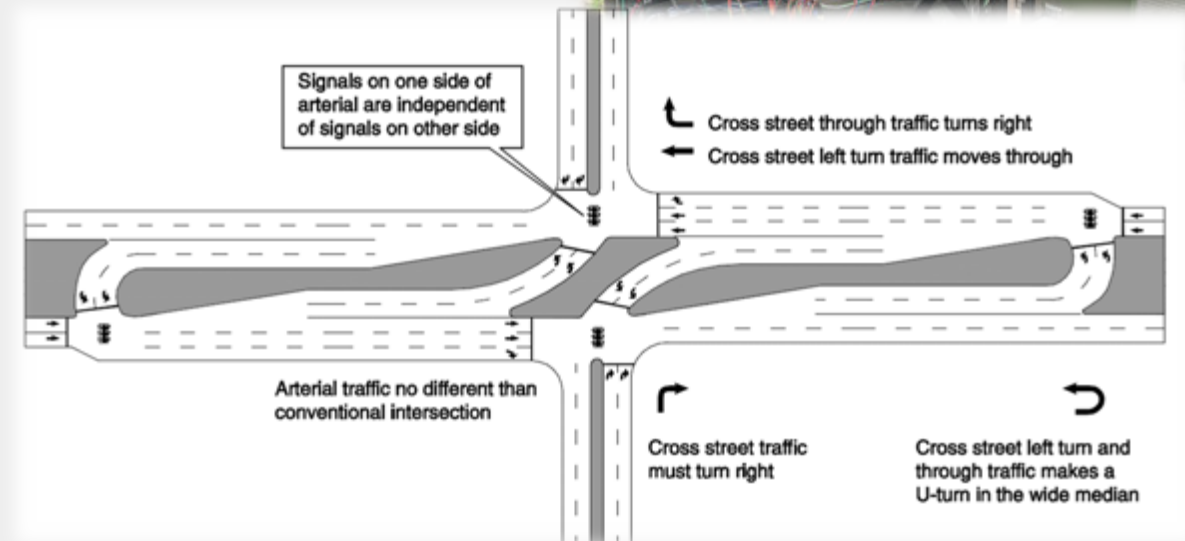
- Updated wiring guidance
  - 14AWG traffic signal cable
  - Cat 6 outer jacket coloring coding
  - Railroad preemption individual conductor color coding
- Cabinet
  - Components
  - Facing and railing





## Item 680 – Highway Traffic Signals (Cont'd)

- Test period response time
- Upgrade
- Payment
  - By Cabinet (e.g. RCUTs)
  - Span wire under 625
  - Signs under 636/SS



Source: FHWA-SA-14-070: Restricted Crossing U-turn Informational Guide.





## Item 681– Temporary Traffic Signals

- Operation and Maintenance
  - Response time (matches Item 680)
  - Remote access (TxDOT provided equipment)
- Portable signals



Source: [www.streetsmartrental.com](http://www.streetsmartrental.com) accessed on 12/21/2023



## Item 682– Vehicle and Pedestrian Signal Heads

- Added "Removal".
- Updated wiring construction guidance.
  - Install drip loop.
  - Only strip outer jacket at point of termination.
  - Guidance on wiring adjustments when removal is used.



Source: Goggle Earth accessed on 12/21/2023



## Item 684– Traffic Signal Cables

- Added "Removal".
- Wiring - added 5 ft extra coiled cable at span wire pole and at each head.



Source: Goggle Earth accessed on 12/21/2023



## Item 685– Roadside Flashing Beacon Assemblies

- Minor changes in language
  - Edits.
  - Removal of extra terms.
  - adding in required wording(e.g., battery and battery box).

- 5.1. **Installation.** This price is full compensation for furnishing, fabricating, galvanizing, assembling, and erecting the roadside flashing beacon assemblies, including poles and bases; solar power flashing controller assemblies, including batteries and battery box; foundations; conduit in the foundation and within 6 in. of the foundation; furnishing and placing anchor bolts, nuts, washers, and templates; controller; and materials, equipment, labor, tools, and incidentals.
- 5.2. **Relocation.** This price is full compensation for removing the roadside flashing beacon assemblies; removing battery box (when required); removing existing foundations; installing new foundations; installing new conduit in the foundation and within 6 in. of the foundation; furnishing, fabricating, and installing any new components as required and replacing the assembly on its new foundations with all manipulations and electrical work; controller; batteries; battery box; salvaging; disposal of unsalvageable materials; loading and hauling; and materials, equipment, labor, tools, and incidentals.



Source: Goggle Earth  
accessed on 12/22/2023





## Item 686– Traffic Signal Pole Assemblies (Steel)

- Added "Removal".
- Expanded language on LMAs



Source: Goggle Earth accessed on 12/21/2023



## Item 687 – Pedestal Pole Assemblies

- Minor changes in language, such as the removal of extra terms, and adding in required wording, such as battery and battery box on relocation.
- Added locking collar.
- Clarified new pedestrian push buttons paid under Item 688.



Source: Goggle Earth accessed on 12/21/2023





## Item 688– Pedestrian Detectors and Vehicle ~~Loop~~ Detectors

- Updated language to "Vehicle Detectors".
- Added "Removal".
- SS still needed for VIVDS, RADAR and Hybrid



Source: Goggle Earth accessed on 12/21/2023



## Item 690– Maintenance of Traffic Signals and Illumination

- Response time (matches Item 680).
- Added
  - illumination.
  - screw-in and cabinet foundations.
  - BBU
- Reroute wiring.
- TCP separate cost.
- Updated language throughout.





# 2024 Standard Specifications Changes 700 Series Items

Maintenance





# 700 Specs in 2014 Spec Book



700 Pothole Repair	760 Cleaning and Reshaping Ditches
712 Cleaning and Sealing Joints and Cracks (Asphalt)	764 Pump Station and Drainage System Cleaning
713 Cleaning and Sealing Joints and Cracks (Concrete)	770 Guard Fence Repair
720 Repair of Spalling in Concrete Pavement	771 Repair Cable Barrier System
721 Fiber Reinforced Polymer Patching Material	772 Post and Cable Fence
730 Roadside Mowing	774 Attenuator Repair
731 Herbicide Treatment	776 Metal Rail Repair
734 Litter Removal	778 Concrete Rail Repair
735 Debris Removal	780 Concrete Crack Repair
738 Cleaning and Sweeping Highways	784 Steel Member Repair
740 Graffiti Removal and Anti-Graffiti Coating	785 Bridge Joint Repair or Replacement
745 Picnic Area Maintenance	786 Carbon Fiber Reinforced Polymer
751 Landscape Maintenance	788 Concrete Beam Repair
752 Tree and Brush Removal	<del>789 Treatment for ASR-Affected Concrete</del>

# 700 Specs in 2024 Spec Book

★ Indicates Spec is Similar to 2014 Version



700 Pothole Repair	764 Pump Station and Drainage System Cleaning ★
712 Cleaning and Sealing Joints and Cracks (Asphalt)	770 Guard Fence Repair
713 Cleaning and Sealing Joints and Cracks (Concrete) ★	771 Repair Cable Barrier System
720 Repair of Spalling in Concrete Pavement	772 Post and Cable Fence ★
721 Fiber Reinforced Polymer Patching Material	774 Attenuator Repair
730 Roadside Mowing	776 Metal Rail Repair ★
731 Herbicide Treatment	<b>777 Permanent Concrete Traffic Barrier Repair</b>
734 Litter Removal	778 Concrete Rail Repair
735 Debris Removal	780 Concrete Crack Repair ★
738 Cleaning and Sweeping Highways ★	784 Steel Member Repair
740 Graffiti Removal and Anti-Graffiti Coating	785 Bridge Joint Repair or Replacement ★
745 Picnic Area Maintenance	786 Carbon Fiber Reinforced Polymer
751 Landscape Maintenance	<b>787 Replacing Elastomeric Bearing Pads</b>
752 Tree and Brush Removal	788 Concrete Beam Repair
760 Cleaning and Reshaping Ditches ★	<b>790 Lane Closures</b>



# High Level Changes from 2014 to 2024 Spec Versions



Spec	Description of Changes
700 Pothole Repair	<ul style="list-style-type: none"><li>-Created edge repair work as it's own category</li><li>-Bid codes specify depth of repair</li></ul>
712 Cleaning and Sealing Joints and Cracks (Asphalt)	<ul style="list-style-type: none"><li>-Seal cracks 1/8" or greater</li><li>-Use fiber reinforced patching material for cracks greater than 1.5"</li></ul>
720 Repair of Spalling in Concrete Pavement	<ul style="list-style-type: none"><li>-Can use Type A or B for rapid set concrete</li><li>-Polymer materials used must be on Material Producer List</li><li>-minor changes to repair methods</li></ul>
721 Fiber Reinforced Polymer Patching Material	<ul style="list-style-type: none"><li>-Bulking aggregates now paid for separately</li></ul>
730 Roadside Mowing	<ul style="list-style-type: none"><li>-Added language defining the mowing season</li></ul>
731 Herbicide Treatment	<ul style="list-style-type: none"><li>-Materials must be in accordance with TxDOT herbicide program</li><li>-TxDOT may request documentation of licensure and application records at any time</li></ul>
734 Litter Removal	<ul style="list-style-type: none"><li>-Spot litter callouts must occur within 48 hours, instead of 3 hours of notification, unless otherwise shown in the plans</li></ul>

# High Level Changes from 2014 to 2024 Spec Versions



Spec	Description of Changes
735 Debris Removal	-Added driftwood removal as a separately measured item
740 Graffiti Removal and Anti-Graffiti Coating	-Added language on how to determine if anti-graffiti coatings are present
745 Picnic Area Maintenance	-Added language to clean signs and report missing, damaged, or faded signs
751 Landscape Maintenance	<ul style="list-style-type: none"> <li>-Provide a weekly log of activities completed</li> <li>-Landscape maintenance paid separately by the month</li> <li>-New items for plant bed maintenance paid separately</li> </ul>
752 Tree and Brush Removal	-Added item for spot tree trimming and brush removal
770 Guard Fence Repair	<ul style="list-style-type: none"> <li>-Changed 'Repair Rail' language to 'Replace Rail'</li> <li>-Added 'Replace Short Radius System' item</li> <li>-Added 'Remove Obsolete Guardrail End Treatment' item</li> </ul>
771 Repair Cable Barrier System	<ul style="list-style-type: none"> <li>-Added 'Replace Post Hardware' item</li> <li>-Bid codes for posts specify manufacturer of system</li> </ul>
774 Attenuator Repair	<ul style="list-style-type: none"> <li>-Replace with MASH compliant system unless otherwise stated in plans</li> <li>-Separated out items for remove and replace</li> <li>-Bid codes align with current systems</li> </ul>

# High Level Changes from 2014 to 2024 Spec Versions



Spec	Description of Changes
778 Concrete Rail Repair	-Paint any rails that were previously painted
784 Steel Member Repair	-Remove hazardous coatings properly
786 Carbon Fiber Reinforced Polymer	-Clarification on material requirements
788 Concrete Beam Repair	-Increased minimum concrete compressive strength from 3,000 psi to 3,600 psi



- Repairs in conformance with items 429 and 514
- Replace full section if damage exceeds half of barrier height
- Repair any foundation and anchorage as necessary
- Measurement:
  - Barrier Repair (by LF)
  - Barrier Replacement (by LF)





- Follow rqmts of Item 434
- Jack bridge (or girder), remove bearing, clean and repair spalls, and install new bearing pad
- Spall repairs paid separately
- Replace bearing pad paid by each pad







- Used for on call traffic control contracts
- Various pay items for different types of closures
  - Setup and removal by EA and maintenance by HR; or
  - Setup, removal, and maintenance by the HR
- Examples: 1 lane closures on 2 lane road, 1 lane freeway closure, etc
  - Separate items for additional flaggers, pilot vehicles with operator, and additional arrow boards (beyond minimum required)
- Portable changeable message signs, law enforcement, and truck mounted attenuators all paid separately





HELP

# #EndTheStreakTX

End the streak of daily deaths on Texas roadways.

[TxDOT.gov](http://TxDOT.gov) (Keyword: #EndTheStreakTX)



#EndTheStreakTX Toolkit

