S T A T E **O F** **T E N N E S S E E**

(Rev. 9-7-21) January 1, 2021
(Rev. 12-15-21)
(Rev. 12-19-22)
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(Rev. 1-8-25)

Supplemental Specifications – 100SS

of the

Standard Specifications for Road and Bridge Construction

January 1, 2021

Subsection 101.03, (pg. 5), 8-21-23; **Terms;** Revise:

Change Directive. A written document issued by the Department that provides the Contractor with additional compensation, time, or both as determined to be fair and reasonable by the Department and that does not require the consent or signature of the Contractor or Surety. The Change Directive becomes a part of the Contract when properly executed and approved by the Department.

Subsection 101.03, (pg. 7), 12-26-24**; Definition and Terms;** Revise Holidays definition:

Holidays. Holidays recognized by the State of Tennessee occur as follows:

New Year's Day	January 1
Martin Luther King Jr. Day	Third Monday in January
Presidents' Day	Third Monday in February
Good Friday	Friday before Easter
Memorial Day	Last Monday in May
Juneteenth	June 19
Independence Day	July 4
Labor Day	First Monday in September
Columbus Day	Second Monday in October
Veterans Day	November 11
Thanksgiving Day	Fourth Thursday in November
Christmas Day	December 25

All days appointed by the Governor of this State, or by the President of the United States, as days of fasting or thanksgiving.

Plan notes precluding restrictions to traffic on holiday weekends, unless specifically noted otherwise, do not apply to weekends associated with Martin Luther King Jr. Day, Presidents' Day, Juneteenth, Columbus Day, and Veterans Day

Subsection 102.09, (pg. 17), 12-19-22; **Rejection of Proposals;** Revise No. 10:

10. The apparent low bidder fails to complete and submit the Department form "Certification Regarding Subcontractor Bid Quotes" (Bidders List) electronically before the close of business (4:30 PM Central Time) within five (5) calendar days after the date on which bids are required to be submitted.

Subsection 102.09, (pg. 17), 12-26-24**; Rejection of Proposals;** Revise No. 10:

10. ~~The apparent low~~A bidder fails to comply with the "Instructions to Bidders" regarding the "Mandatory Submittal Of Subcontractor Bid Quotes (Bidders List)".~~complete and submit the Department form "Certification Regarding Subcontractor Bid Quotes" (Bidders List) electronically before the close of business (4:30 PM Central Time) within five (5) calendar days after the date on which bids are required to be submitted.~~

Subsection 104.03.B & C, (pg. 23-24), 9-7-21; **Contract Change Notification; B & C;** Revise subsections:

B. Written Acknowledgement by Engineer

The Engineer will provide written acknowledgement of the Contractor's written notice within ten (10) calendar days.

C. Written Response by Engineer

The Engineer will provide a written response within the specified number of calendar days based on the requested contract change:

1. For requested changes to the contract time in excess of one hundred eighty (180) days or requested changes that alter the original contract amount by more than $200,000, the Engineer will respond within thirty (30) days of receiving the Contractor's written notice.

2. For requested changes to the contract time in excess of ninety (90) days but less than or equal to one hundred eighty (180) days, or requested changes that alter the original contract amount by more than $100,000 but less than or equal to $200,000, or by more than ten percent (10%) of the original contract, whichever is less, the Engineer will respond within twenty-one (21) days of receiving the Contractor's written notice.

3. For all other requested changes to the contract, the Engineer will respond within fourteen (14) calendar days of receiving the Contractor's written notice.

The written response to the Contractor's written notice will include one of the following:

1. Confirmation that a change is necessary in accordance with **104.02**, and direction on how the Work will proceed.

2. A denial of the request for a change, which will include references to the Contract as to why the condition does not represent a change.

3. A request for additional information stating the specific information needed and the date by which it must be received. The Engineer will respond to the additional information provided within fourteen (14) calendar days.

When a change is necessary, the Engineer will make appropriate adjustments to the Contract price and time, if warranted, in accordance with **108.07**, **109.04**, **109.05.A**, and **109.06**. If the Contractor disagrees with the Engineer's decision or does not agree with the Contract adjustments, the Contractor may pursue the issue as a claim in accordance with **105.16**.

Subsection 104.03.C, (pg. 24,25), 8-21-23; **Written Response by Engineer;** Add 3rd Paragraph and Revise 4th Paragraph:

The Contractor will, upon request, have an opportunity to discuss the Contract change by informal meeting with the Department's Regional representatives associated with the change prior to the issuance of the Engineer's written response. If such a meeting is held, the Contractor shall use the opportunity to present relevant information and respond to any information provided by the Engineer or other Department officials with knowledge of the Work.

When a change is necessary, the Engineer will make appropriate adjustments to the Contract price and time, if warranted, in accordance with **108.07, 109.04**, **109.05.A**, and **109.06**. If the Contractor disagrees with the Engineer's decision or does not agree with the Contract adjustments, the Contractor may pursue the issue as a Request for Equitable Adjustment in accordance with **105.16**. At this time, the Department may issue a Change Directive even if the Contractor does not pursue a Request for Equitable Adjustment.

Subsection 104.04, (pg. 25-26), 12-27-23; **Maintenance of Traffic;** Revise 2nd and 5th Paragraph:

The Department will pay for materials used at the direction of the Engineer to construct and maintain approaches, crossings, intersections, and other features at contract unit prices unless the Contractor is responsible for the damage. Open cuts of roadways and streets shall be safely maintained for traffic during the Work. This includes, but is not limited to, placing and compacting a bituminous mix in the open cuts or placing metal plates over the open cuts, where allowed, before returning traffic to the roadway. Tie-ins for sideroads shall be safely maintained for traffic by paving to the binder course, striping, and placing temporary or permanent signs as needed, at minimum, unless otherwise directed by the Engineer. Maintenance of traffic control features, mowing, and pothole patching (cold mix) are incidental to the work and the responsibility of the Contractor.

Do not close lanes or restrict traffic on the following days without the Engineer's written consent:

- Easter: After 6:00 pm on the Thursday preceding Good Friday through Easter Sunday until the following Monday at 6 am.
- Memorial Day: After 12:00 noon on the preceding Friday through Memorial Day until the following Tuesday at 6 am.
- Independence Day:
    a. Monday: After 12:00 noon on the preceding Friday through Independence Day until the following Tuesday at 6 am.
    b. Tuesday: After 12:00 noon on the preceding Friday through Independence Day until the following Wednesday at 6 am.
    c. Wednesday: After 12:00 noon on the preceding Tuesday through Independence Day until the following Thursday at 6 am.
    d. Thursday: After 12:00 noon on the preceding Wednesday through Independence Day until the following Monday at 6 am.
    e. Friday: After 12:00 noon on the preceding Thursday through Independence Day until the following Monday at 6 am.
    f. Saturday: After 12:00 noon on the preceding Thursday through Independence Day until the following Monday at 6 am.
    g. Sunday: After 12:00 noon on the preceding Friday through Independence Day until the following Tuesday at 6 am.
- Labor Day: After 12:00 noon on the preceding Friday through Labor Day until the following Tuesday at 6 am.
- Thanksgiving: After 12:00 noon on Wednesday before Thanksgiving through Sunday following Thanksgiving until the following Monday at 6 am.
- Christmas/New Year's Day: December 24 through January 1 and any preceding and/or following days that fall on a weekend.

Subsection 105.16, (pg. 49-55), 8-21-23; **Claims for Adjustment and Disputes;** Revise Subsection:

105.16 Request for Equitable Adjustment (REA) and Disputes

This subsection details the optional REA process for receiving, reviewing, and deciding on REAs submitted to the Department. If such REAs cannot be successfully negotiated or resolved within this process, the Contractor has the right to submit a formal claim through the Tennessee Claims Commission as acknowledged in this subsection.

All events or conditions that have a potential or anticipated effect on the Project's progress or schedule and that may result in a REA by the Contractor shall be documented contemporaneously with the event or

discovery of the pertinent condition(s), or immediately thereafter. REAs that are submitted without proper documentation will not be reviewed by the Department.

A. Notice of Intent to File a REA

If the Contractor has followed the process under **104.03** to request additional compensation, time, or both under **104.02 or 108.07** and the Contractor disagrees with the Engineer's decision or the Contract adjustments made by the Department, the Contractor may provide notice of intent to file a REA. The Contractor shall provide such notice in writing within thirty (30) calendar days of receiving the Engineer's decision as provided in **104.03**.

After submitting the notice of intent to file a REA, if the subject work is not yet complete, the Contractor shall maintain adequate records related to the REA, including records of the disputed labor, equipment and materials, and schedule updates per **108.03** showing compensable delays to the completion date. If applicable, update and disclose this information to the Department monthly. The Department may audit REA records at any time. Unless the Engineer suspends in writing the affected work, the Contractor shall continue to perform the disputed work. If such notice to file a REA is not given, or if the Engineer is not given sufficient opportunity for keeping strict account of the Contractor's actual Work, then the Contractor waives any claim for additional compensation under the REA process. Such notice by the Contractor and the Engineer's accounting of the cost shall not, in any way, prove or substantiate the validity of the REA. Nothing in this Subsection shall be construed as establishing any REA contrary to the terms of **104.02 or 108.07**.

B. Submission of REA

Within sixty (60) calendar days after submitting the notice of intent to file a REA, or within sixty (60) calendar days after completion of the disputed Work, whichever is later, or within such time agreed upon by the parties in writing, the Contractor shall submit a complete REA package. The REA package shall include all documents supporting the REA and provide sufficient detail to enable the Department to ascertain the basis and amount of the REA. If requested by the Contractor, the Department may extend the sixty (60) calendar day period in writing. As a minimum, the following information shall be submitted with each REA:

1. A REA certification containing the language shown in Figure 105.16-1; this figure can be found on the Department's Construction Division website.

2. A detailed factual statement of the REA for additional compensation, time, or both, providing all necessary dates, locations, and items of work affected by the REA, including:

a) Each aspect of the Project affected by matters related to the REA.

b) The specific Project locations where Project work has been so affected;

c) The number of people working on the affected aspects of the Project at the pertinent time(s);

d) The types and number of pieces of equipment working on the affected aspects of the Project at the pertinent time(s); and

e) If applicable, any other request for relief that the Contractor intends to file or has reason to believe that it may file against the Department that would be impacted by the matters related to the REA.

3. The specific provisions of the Contract that support the REA and a statement of the reasons why such provisions support the REA;

4. If an extension of contract time is sought, a schedule analysis as required by **108.07**;

5. If additional compensation is sought, the amount and specifics of the compensation in accordance with the following:

a) Compensable Items: Must be compensable under **109.04**,

b) Compensable Delay related costs: Must be compensable under **109.06**; and

c) Non-Recoverable Costs: Per **109.07**, non-recoverable costs shall not be considered in a REA.

6. Any worksheets used to prepare the REA, which indicate the cost components of each item of the REA, including but not limited to the pertinent costs of labor, benefits and insurance, materials, equipment, and compensable subcontractor costs, as well as all documents which establish the relevant time periods, individuals involved, and the Project hours and the rates for the individuals.

The Contractor and its subcontractors and suppliers involved with the REA shall cooperate with any inquiries or requests by the Department for clarification and data supporting the submitted documentation.

C. REA Informal Meeting

Within thirty (30) calendar days of receiving the Contractor's REA submittal, the Department will contact the Contractor in writing to schedule a meeting to afford the Contractor an opportunity to discuss the disputed matters informally with the Department. If the Contractor elects to participate in a meeting, the Contractor shall use this opportunity to present relevant information and respond to any information provided by the Engineer or other Department officials with knowledge of the Work. Proceedings in any REA meeting are compromise negotiations and are not admissible in litigation in accordance with Tennessee Rule of Evidence 408.

D. Department Decision

When the Contractor properly files a REA and allows for reasonable and timely access to the Contractor's relevant books and records**,** the Department will review the REA and render a written decision to the Contractor to either affirm or deny the REA package, in whole or in part**,** within sixty (60) calendar days after receipt of the REA package or after the informal meeting. If more time is needed for review, the Department will notify the Contractor in writing of the additional time required.

The Department will assemble and maintain the REA record consisting of the REA and all other information considered by the Department in reaching a decision. Once the Department assembles the REA record, the submission and consideration of additional information or data, other than for clarification and support of previously submitted documentation, will not be permitted. The Department will provide a copy of the REA record and the written decision to the Contractor describing the information considered by the Department in reaching a decision and the basis for that decision.

If as a result of the REA documentation or REA Informal Meeting, the Department and the Contractor reach an agreement to resolve the REA, the Department will prepare a Change Order setting forth the terms of any additional compensation or time, or both, as agreed, and the Change Order will be processed for approval in accordance with the Department's standard procedures.

If the Department agrees that the Contractor is due additional compensation, time, or both, but the Department and the Contractor cannot agree on the amount, the Department may issue a Change Directive providing for additional compensation, time, or both, as the Department determines to be fair and reasonable. The Contractor may continue to pursue a claim as acknowledged in this Subsection.

If the Department denies the REA, the Contractor may either accept the Department's decision as final or submit to the Department a written notice of intent to file a claim with the Tennessee Claims Commission to the Department. The Contractor may file a claim with the Tennessee Claims Commission in accordance with TCA § 9-8-307.

Subsection 106.06.A.1, (pg. 61), 12-15-21; **Field Laboratory, Type A;** Revise No. 1:

1. Scales of appropriate capacity and design to weigh the required samples. Scales are to be sensitive to within 0.1% of the sample to be weighed. Provide standard weights for scale calibration. Scale calibration shall be completed annually, by an independent source.

Subsection 107.13, (pg. 75), 1-9-23; **Legal Responsibilities of the Contractor;** Add New 3rd Paragraph:

The Contractor certifies that it is not currently engaged in, and covenants that it will not, for the duration of the Contract, engage in a boycott of Israel, as that term is defined in Tenn. Code Ann. § 12-4-119. This certification does not apply to a Contract with a value of less than two hundred fifty thousand dollars ($250,000) or if the Contractor has fewer than ten (10) employees.

Subsection 107.20, (pg. 78), 12-19-22; **Certified Payrolls;** Revise Subsection:

As specified by Minimum Wage Scales for Federal-Aid and State Funded Construction contract provisions, submit and certify payrolls for each week in which any contract work is performed. All payrolls shall be submitted electronically through the website using AASHTOWare Project Civil Rights & Labor (CRL) software.

Register for payroll access and develop a method of import prior to the Preconstruction Conference. Ensure each subcontractor, including all Disadvantaged Business Enterprises (DBE), certified Small Business Enterprises (SBE), and DBE or SBE haulers, has registered in CRL for payroll access and developed their method of import prior to commencing Work.

Assume all responsibility for ensuring all payrolls and all subcontractor payrolls are submitted and certified electronically in CRL for each week in which any contract work is performed. If all payrolls are not received in this timeframe, the progress payment shall be withheld until all necessary payrolls have been received.

Once Work begins for the Contractor or subcontractor, if in any week the Contractor or subcontractor does not perform Work, check the box "No Work Until Further Notice" in CRL.

Subsection 108.01, (pg. 79, 80), 12-15-21; **Subletting of Contract;** Revise Item list:

Item 105-01 – Construction Stakes, Lines and Grades
Item 202-01 – Removal of Asbestos
Item 203-40 – Rock Anchors, Anchor Blocks, Tie Back Anchors
Item 209 – Project EPSC
Item 411-12 - Scoring
Item 411-33 – Stamped Asphalt
Item 501-03 – Concrete Shoulder Rumble Strip
Item 503-01 – Grinding Concrete Pavement
Item 602-03 – Steel Structures
Item 602-04 – Steel Structures
Item 602-10.81 – Heat Straightening
Item 603-02 – Repainting Steel Structures
Item 603-05 – Containment and Disposal of Waste
Item 604-04.01 – Applied Texture Finish (New Structures),
Item 604-04.02 – Applied Texture Finish (Existing Structures)
Item 604-04.10 – Graffiti Protection
Item 604-04.20&.21 – Painting or Staining Concrete Surfaces
Item 604-04.62 – Clean and Texture Finish Median Barrier
Item 604-05.31 – Bridge Deck Grooving (Mechanical)
Item 604.07 – Retaining Wall
Item 604-42.01 – Underwater Divers
Item 606-26.05 – Core Drilling for Piles (Abandoned)
Item 617 – Bridge Deck Sealant
Item 619 – Polymer Modified Concrete Overlay
Item 624 – Retaining Wall
Item 625-01.08,10,11 – Inclinometer, Camera Drilled Shaft Inspections
Item 705 – Guardrail
Item 706 – Guardrail Adjusted, Removed and Reset
Item 707 – Fences
Item 712 – Temporary Traffic Control
Item 713 – Highway Signing
Item 714 – Roadway and Structure Lighting
Item 716 – Pavement Markings
Item 721 – Landscape and Irrigation
Item 724 – Landscape Lighting
Item 725 – ITS items
Item 730 – Traffic Signals
Item 740 – Geosynthetics
Item 79* – Utilities
Item 801 – Seeding
Item 802 – Landscape Plantings
Item 803 – Sodding
Item 805 – Erosion Control
Item 806 – Project Mowing

Subsection 108.01, (pg. 79, 80), 12-19-22; **Subletting of Contract;** Add to & Revise Item list:

Item 108-03 – CPM Project Schedule

Item 203-11 – Scaling and Trimming
Item 203-40 – Anchors
Item 406 – High Friction Surface Treatment
Item 617 – Bridge Deck Sealant and Thin Epoxy Overlay

Subsection 108.03.A, B, & C, (pg. 81,82,85,87,88), 9-7-21; **Contract Change Notification;**
A & B; Revise Heading,
C.1.c; Add new No.vi, **C.3;** Revise last paragraph, **C.4;** Revise last paragraph & add sentence**:**

A. Project Durations Less Than 9 Months

B. Project Durations 9 Months to 24 Months

C.1.c Narrative report in PDF file format fit to 8.5x11 inch paper and including:…

vi. The quantity and estimated daily production rate for controlling activities;

vii. Description of the calendars including identification of workdays per week, holidays, number of shifts per day, and number of hours per shift;

viii. Description of how the schedule accommodates adverse weather days for each month; and

ix. Description of execution plan, including number and type of crews, a list of subcontractors' crews, and expected equipment, but not limited to large equipment transport and delivery, transportation permits for oversized/overweight loads, and availability.

3. Baseline CPM Schedule.

The Engineer and Contractor will review the draft baseline CPM schedule at a meeting specific for the review of the schedule. The Engineer will accept the draft baseline CPM schedule, provide review comments, or request additional information. Make appropriate adjustments or provide additional information within 14 calendar days. The Engineer's acceptance is based solely on whether the baseline schedule meets the requirements of **108.03**. Review comments made by the Engineer on the initial schedule will not relieve the Contractor from compliance with the Contract. The Contractor is responsible for scheduling, sequencing, and prosecuting the Work to comply with the Contract requirements.

4. Schedule Updates.

Submit the updated schedule electronically to the Engineer in accordance with the requirements of this subsection. The Engineer reserves the right to reject any schedule updates because of changes in relationships between activities on the critical path, inadequate or inaccurate narrative updates, or other deficiencies in the schedule updates as required in this subsection.

The Department will measure and pay for CPM Project Schedule in accordance with **108.11** and **108.12** respectively.

Subsection 108.03.C, (pg. 84, 87-88), 6-1-23; **Prosecution of Construction, Project Durations Greater Than 24 Months or When Required By Contract;** Revise 1st Paragraph, **C.4**; Revise 1st and Relocate last Paragraph:

Develop a Critical Path Method (CPM) project execution schedule and subsequent updates as required or as specifically requested by the Engineer. Generate the CPM schedule using Primavera Project Management (P6) scheduling software. The Department will measure and pay for CPM Project Schedule in accordance with **108.11** and **108.12** respectively.

C.4. Schedule Updates. Update the CPM schedule on a quarterly (3 months) basis to show current progress. Include the following with each update:

~~The Department will measure and pay for CPM Project Schedule in accordance with **108.11** and **108.12** respectively.~~

Subsection 108.03.C, (pg. 87-88), 12-26-24**; Prosecution of Construction, Project Durations Greater than 24 Months or When Required by Contract;** Add as last Paragraph, **C4.** Revise 1st Paragraph:

Review and acceptance by the Engineer will not constitute a waiver of any Contract requirements and will in no way assign responsibilities of the work plan, scheduling assumptions, and validity of the work plan or schedule to the Department. Failure to include in the Progress Schedule any element of work required for timely completion of the Contract shall not excuse the Contractor from his contractual obligations.

C.4. Schedule Updates – Update the CPM schedule on a quarterly (3 month) basis to show current progress. If actual construction falls behind the plan of operations or schedule by more than 3 months, update the schedule on a monthly basis at no additional cost to the Department. Continue to submit monthly updates until project completion or the schedule is no longer behind by 3 months or more. Include the following with each update:…

Subsection 108.03.D, (pg. 88-89), 6-1-23; **Schedule Revisions;** Revise 1st Paragraph and Revise No. 2:

The Engineer will determine the progress of the Contract by either the time versus money straight line method or the schedule updates submitted by the Contractor. If actual construction falls behind the plan of operations or schedule by more than 15% or 60 calendar days, whichever is less, submit for approval a revised schedule that reflects timely completion. The Engineer may request a revision of the schedule at any time if a critical circumstance regarding the scheduling, sequencing, or prosecution has changed with planning or progress of the Work. Circumstances that may lead to such a request include the following:

2. A difference of 60 calendar days between the actual sequence or duration of work and that depicted in the schedule; or

Subsection 108.09, (pg. 95), 12-19-22; **Failure to Complete Work on Time;** Revise Table 108.09-1:

Table 108.09-1: Liquidated Damages for Failure to Complete the Work on Time

Original Contract Amount ($)			Daily Charge ($/day)
0	to	500,000	500.00
> 500,000	to	1,000,000	600.00
> 1,000,000	to	2,000,000	800.00
> 2,000,000	to	10,000,000	1,000.00
>10,000,000	to	20,000,000	1,600.00
>20,000,000			2,500.00

Subsection 108.09, (pg. 7), 1-8-25**; Failure to Complete the Work on Time;** Revise Table 108.09-1:

Table 108.09-1: Liquidated Damages for Failure to Complete the Work on Time

Original Contract Amount ($)			**Daily Charge ($/day)**
0	to	500,000	500.00
> 500,000	to	1,000,000	600.00
> 1,000,000	to	2,000,000	800.00
> 2,000,000	to	10,000,000	1,000.00
>10,000,000	to	20,000,000	1,600.00
>20,000,000			2,~~2~~500.00

Subsection 108.11, (pg. 99), 9-7-21; **Method of Measurement;** Add subsection 108.11:

108.11 Method of Measurement

The Department will measure construction CPM Project Schedule as a percentage of the lump sum price bid for the completion of the work specified in **108.03.C** and partial payment will be made according to the schedule in Table 108.11-1.

Table 108.11-1: Payment Schedule for CPM Project Schedule

Estimate Number or Percent of Total Contract Amount of Previous Estimate	Total Percent of CPM Project Schedule Lump Sum Bid Item
Estimate # 1	20%
Estimate # 3	40%
20%	50%
40%	60%
60%	70%
80%	80%
95%	100%

Subsection 108.11, (pg. 99), 6-1-23; **Method of Measurement;** Revise Table 108.11-1:

Table 108.11-1: Payment Schedule for CPM Project Schedule

Requirement or Percent of Total Contract Amount of Previous Estimate	Total Percent of CPM Project Schedule Lump Sum Bid Item
Initial Project Schedule	10%
Baseline CPM Schedule	40%
20%	50%
40%	60%
60%	70%
80%	80%
95%	100%

Subsection 108.12, (pg. 99), 9-7-21; **Basis of Payment;** Add subsection 108.12:

108.12 Basis of Payment

The Department will make partial payments for CPM Project Schedule on the basis of a percentage of the lump sum price bid in accordance with the schedule shown in Table 108.11-1.

If the Contractor fails to provide monthly schedule updates or address the Engineer's comments regarding the monthly schedule update, within 10 calendar days following the progress estimate pay period cutoff date, the Engineer will withhold payment for CPM Project Schedule and may withhold up to an additional 5% of the monthly estimate payment, until such time as an acceptable update has been provided.

No additional payments will be made for schedule revisions as requested per **108.03.D**.

Such payment is full compensation for meeting all requirements of **108.03.C** and **D**.

Subsection 108.12, (pg. 99), 6-1-23; **Basis of Payment;** Add new 2nd Paragraph and Revise existing 2nd and 3rd Paragraphs:

If the Contractor fails to provide an Initial Project Schedule or a Baseline CPM schedule, or address the Engineer's comments regarding the Initial Project Schedule or Baseline CPM schedule, within 10 calendar days following the progress estimate pay period cutoff date, the Engineer will withhold payment for CPM Project Schedule and may withhold up to an additional 10% of that month's estimate payment, until such time as an acceptable Initial Project Schedule or Baseline CPM schedule has been provided and accepted.

If the Contractor fails to provide quarterly CPM schedule updates, or address the Engineer's comments regarding the quarterly schedule update, within 10 calendar days following the progress estimate pay period cutoff date, the Engineer will withhold payment for CPM Project Schedule and may withhold up to an additional 5% of that month's estimate payment, until such time as an acceptable update has been provided and accepted.

No additional payments will be made for Engineer requested schedule revisions as requested per **108.03.D**.

Subsection 109.02, (pg. 105-106), 5-30-24; **Scope of Payment;** Revise & Relocate Paragraph 5 to Paragraph 4 and Revise Paragraphs 6 & 7:

Ensure each subcontractor, including all certified Disadvantaged Business Enterprises (DBE), certified Small Business Enterprises (SBE), and DBE or SBE haulers or material suppliers has registered for AASHTOWare Project Civil Rights & Labor (CRL) prior to commencing Work.

The Department requires...

Document within CRL the actual amount paid to all subcontractors, material suppliers, and haulers during the monthly estimate period for which the certification is being made. All subcontractors, DBE or SBE material suppliers, and DBE or SBE haulers shall acknowledge payment entry in AASHTOWare Project Civil Rights & Labor (CRL) within fourteen (14) calendar days from the date of posting. The Department will withhold estimate payments if the required information is not submitted or if subcontractors, at any tier, material suppliers, or haulers are not paid after the thirty (30) calendar daytime period. Any delay or postponement of payment beyond the thirty (30) calendar day timeframe will be subject to terms listed in TCA §12-4-707(b).

The Contractor, subcontractors, at any tier, material suppliers, or haulers shall not withhold any retainage from progress payments made to their subcontractors. The Contractor, subcontractors at any tier, material suppliers, or haulers shall not withhold progress payments due to subcontractors at any tier, material suppliers, or haulers for work or services performed under the Contract to offset any amounts that may be owed with respect to any agreement other than the Contract.

Subsection 109.06, (pg. 116), 8-21-23; **Compensable Delay Costs;** Revise 2nd Paragraph:

Compensable delay costs will not be paid unless the compensable delay causes completion of the Work to exceed the original or previously adjusted Contract completion date. Compensable delay costs will not be considered for previously negotiated Change Orders or for costs that have already been included in bid items, negotiated prices, or force account payments described in **109.04**; no additional consideration will be given for home office overhead and/or field office overhead. The Department will not pay for delay costs incurred by subcontractors.

Subsection 109.06.D, (pg. 117), 8-21-23; **Extended Field Overhead;** Revise 3rd Paragraph:

Compute these costs on a calendar day basis using actual costs incurred due to the delay to provide project specific general supervision, field office facilities and supplies, maintenance of field operations, traffic control maintenance, and extended erosion control inspection. If the Contractor and the Department cannot agree on additional field overhead costs, the Department may consider, at its sole discretion, calculating a daily extended field overhead rate as a percentage (in accordance with Table 109.06-1) of the original Contract amount divided by the Contract duration.

Subsection 109.07, (pg. 118,119), 8-21-23; **Non-Recoverable Costs;** Revise No. 5 & 6 and Add No. 7 & 8:

5. Attorney fees, claim preparation expenses, and cost of litigation;

6. Consequential and/or incidental damages, including but not limited to, interest of monies in dispute, loss of bonding capacity, any indirect costs or expenses, interest on investment or any resultant insolvency;

7. Loss of bidding opportunities; and

8. Reduction of bidding capacity.

S T A T E **O F** **T E N N E S S E E**

(Rev. 12-27-23) January 1, 2021
(Rev. 7-14-25)

Supplemental Specifications – 200SS

of the

Standard Specifications for Road and Bridge Construction

January 1, 2021

Subsection 203.04.E, (pg. 145), 12-27-23; **Borrow Areas;** Revise 2nd Paragraph:

Borrow materials shall not contain acid producing materials. Representative samples of the proposed borrow material shall be independently tested for pH (EPA600/2-78-054 or ASTM D4972). Material with a pH less than 5 is considered acid producing and will not be accepted.

Subsection 205.04.C, (pg. 178), 7-14-25**; Degradable Rock;** Revise 2nd, 3rd, and add 4th paragraphs:

Place degradable rock in 10-inch maximum loose lifts and provide a minimum of three passes with the static roller and two passes with the vibratory roller. The Engineer may direct additional passes with either or both rollers until satisfactory breakdown and compaction is accomplished. ~~Do not place degradable rock in the top 2~~5 ~~feet of an embankment unless approved by the Engineer~~.

If embankment composed of degradable rock does not contain sufficient moisture to compact properly, ~~the Engineer will require the Contractor to~~ apply water in sufficient quantities to achieve the approximate optimum moisture for the particular material involved. Uniformly mix the added water with the material for the entire depth of the lift by blading, discing, or other approved methods.

Do not place degradable rock in the top 3 feet of an embankment, and only use approved materials.

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Subsection 307.02, (pg. 242), 8-28-24**; Materials;** Revise Materials list:

Grading A, ACRL, AS, B, BM, BM2, C, CM, CS, or CW…**903.06**

Subsection 307.03.A, (pg. 243, 244), 8-28-24**; Composition of Mixtures, General;** Revise Table 307.03-01 and Table 307.03-2:

Table 307.03-1: Mixture Composition

Mixtures	Proportions of Total Mixture, Percent by Weight	
	Combined Mineral Aggregate, %	Asphalt Cement, % (1)
Grading AS and ACRL	96.3 - 97.7	2.3 - 3.7
Grading A	95.8 - 96.7	3.3 - 4.2
Grading B, BM, and BM2	93.8 - 95.8	4.2 - 6.2
Grading C, CM, and CW	93.8 - 95.8	4.2 - 6.2
Grading CS	92.3 - 94.7	5.3 - 7.7

(1) If the effective combined specific gravity of the aggregate exceeds 2.80, the Engineer may adjust the proportions specified.

Table 307.03-2: Mixture Design Properties

Mix (1)	Stability (minimum) lbf (2)	Design Void Content % (2)	Production Void Content, % (2)	VMA (minimum) % (2)	Dust-Asphalt Ratio (3)
307-B	2,000	4.0±0.2	3-5.5	11.5	0.6-1.5
307-BM	2,000	4.0±0.2	3-5.5	13.5	0.6-1.5
307-BM2	2,000	4.0±0.2	3-5.5	13.5	0.6-1.5
307-C	2,000	4.0±0.2	3-5.5	13.0	0.6-1.5
307-CM	2,000	4.0±0.2	3-5.5	13.0	0.6-1.5
307-CS	2,000	3.0±0.5	1-5	---	---
307-CW	1,500	4.0±0.2	3-5	13.0	0.6-1.5

(1) To identify critical mixes and make appropriate adjustments, the mix design shall meet these design properties for the bitumen content range of Optimum Asphalt Cement ±0.25%.

(2) Tested according to AASHTO T 245 with 75 blows with the hammer on each end of the test specimen, using a Marshall Mechanical Compactor.

(3) The dust-asphalt ratio is the percent of the total aggregate sample that passes the No. 200 sieve, as determined by AASHTO T 11, divided by the percent asphalt in the total mix.

Subsection 307.03.B.1, (pg. 245), 12-27-23; **Recycled Asphalt Pavement (RAP);** Revise Table 307.03-3:

Table 307.03-3: Mixtures Using RAP

Mix Type	% RAP (Non-processed) (1)	Maximum % RAP (Processed) (2)	Maximum % RAP Processed & Fractionated (3)	Maximum Particle Size (inches)
307-ACRL	0	00	-	-
307-AS	0	10	10	-
307-A	15	20	35	1-1/2
307-B	15	30	35	1-1/2
307-BM	15	30	35	3/4
307-BM2	15	30	35	3/4
307-C	15	30	35	3/8
307-CW	15	30	35	1/2
307-CS	0	15	25	5/16

(1) "Non-processed" refers to RAP that has not been crushed and screened or otherwise sized prior to its use.

(2) "Processed" refers to RAP that has been crushed and screened or otherwise sized such that the maximum recycled material particle size is less than that listed in Table 307.03-3 prior to entering the dryer drum.

(3) "Fractionated" refers to RAP that has been processed over more than one screen, producing sources of various maximum particle sizes (e.g., ¾ to ½ inch, ½ inch to #4, etc.). The Contractor may use the larger percentages of fractionated RAP specified only if the stockpile meets the consistency requirements set forth in Departmental procedures for approval of asphalt mix designs.

Subsection 307.03.B.1, (pg. 245), 8-28-24**; Recycled Asphalt Pavement (RAP);** Revise Table 307.03-03:

Table 307.03-3: Mixtures Using RAP

Mix Type	% RAP (Non-processed) (1)	Maximum % RAP (Processed) (2)	Maximum % RAP Processed & Fractionated (3)	Maximum Particle Size (inches)
307-ACRL	0	00	-	-
307-AS	0	10	10	-
307-A	15	20	35	1-1/2
307-B	15	30	35	1-1/2
307-BM	15	30	35	3/4
307-BM2	15	30	35	3/4
307-C	15	30	35	3/8
307-CM	15	30	35	1/2
307-CW	15	30	35	1/2
307-CS	0	15	25	5/16

(1) "Non-processed" refers to RAP that has not been crushed and screened or otherwise sized prior to its use.

(2) "Processed" refers to RAP that has been crushed and screened or otherwise sized such that the maximum recycled material particle size is less than that listed in Table 307.03-3 prior to entering the dryer drum.

(3) "Fractionated" refers to RAP that has been processed over more than one screen, producing sources of various maximum particle sizes (e.g., 3/4 to 1/2 inch, 1/2 inch to #4, etc.). The Contractor may use the larger percentages of fractionated RAP specified only if the stockpile meets the consistency requirements set forth in Departmental procedures for approval of asphalt mix designs.

Subsection 307.03.C, (pg. 248), 8-28-24**; Anti-Strip Additive;** Revise 1st sentence:

Check asphaltic concrete mixtures (Grading A, AS, ACRL, B, BM,BM2, C, CM, CS, and CW) for stripping by the following methods:

Subsection 307.07, (pg. 250), 8-28-24; **Thickness and Surface Requirement;** Revise Table 307.07-1:

Table 307.07-1: Maximum Surface Deviation

Mixture	Maximum Deviation (inches)
Grading A, ACRL, and AS	1/2
Grading B, BM, BM2, C, CM, CS, and CW	3/8

Revise 307.09, (pg. 251), 10-17-23**; Basis of Payment;** Revise Table 307.09-01:

Table 307.09-1: Asphalt Cement Content

Mix Type	Asphalt Content
307 A	4.0%
307 AS	3.5%
307 ACRL	3.5%
307 B	4.3%
307 BM	5.0%
307 BM2	5.0%
307 C	5.0%
307 CW	5.0%
307 CS	6.5%

Subsection 307.09, (pg. 251), 8-28-24; **Basis of Payment;** Revise Table 307.09-1:

Table 307.09-1: Asphalt Cement Content

Mix Type	Asphalt Content
307 A	4.0%
307 AS	3.5%
307 ACRL	3.5%
307 B	4.3%
307 BM	5.0%
307 BM2	5.0%
307 C	5.0%
307 CM	5.0%
307 CW	5.0%
307 CS	6.5%

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Subsection 403.04, (pg. 285), 12-15-21; **Preparing Surface;** Revise Paragraph:

Prepare the designated surface as specified in **405.05**. Ensure that the surface is dry when applying tack coat.

Subsection 403.04, (pg. 285), 12-27-23; **Preparing the Surface;** Revise Paragraph:

Prepare the designated surface as specified in **405.05**. Ensure that the surface is swept clean and dry when applying tack coat.

Subsection 403.05.C, (pg. 286), 12-15-21; **Fog Sealing;** Revise 1st Paragraph:

When the Contract requires bituminous material for fog sealing of shoulders, provide emulsified asphalt meeting **403.02** or an item from QPL 40A. Apply diluted emulsified asphalt at a rate of 0.10 to 0.15 gallons per square yard based on a dilution rate of one-part emulsified asphalt to one part water. This application may require two equal increments if run-off occurs. Apply fog seal when the ambient air temperature or the surface temperature is a minimum of 50°F.

Subsection 405.06.A, (pg. 290), 12-27-23; **Applying Bituminous Material;** Revise 3rd Paragraph:

At least 7 working days before the scheduled start of construction of any bituminous seal coat, submit a starting aggregate spread rate and emulsion shot rate as determined by AASHTO R 102 or an equivalent design method. Apply emulsified asphalt by pressure distributor at a uniform rate in accordance with Table 405.06-1 below. The exact rate will be established by the Engineer.

Subsection 407.03.E.1, (pg. 310), 10-17-23; **Tensile Strength Ratio;** Revise Table 407.03-4:

Table 407.03-4: Criteria for Stripping and Moisture Susceptibility

Asphalt Cement	Minimum Tensile Strength	Minimum TSR
Polymer Modified	100 psi	80%
Non-Polymer Modified	80 psi	80%
411 OGFC	50 psi	70%

Subsection 407.06.B, (pg. 324), 12-19-22; **Material Transfer Devices (MTDs);** Revise 2nd Paragraph:

The MTD shall have a minimum storage capacity of 15 tons and shall be equipped with mixing augers in the bottom of the storage hopper that are capable of remixing or re-blending the material as the material is removed from the storage hopper. The mixing augers shall be operational and used at all times during placement of the asphalt mixes. The MTD shall have a rear discharge conveyor that swivels to allow feeding the paving machine from the front, side or rear.

Subsection 407.09, (pg. 326-327), 12-15-21; **Weather Limitations;** Revise No. 2 & 3:

2. The bituminous plant mix is placed according to the temperature limitations specified in Table 407.09-1 and when weather conditions otherwise allow the pavement to be properly placed, compacted, and finished. Placement may proceed if either the air or surface temperature is met except for 411-TL, 411-TLD, 411-TLE, and 411-OGFC mixtures.

   Measurement of the surface temperature shall be done on pavement that is shaded from direct sunlight unless no shaded location exists. If paving based on the air temperature, stop work once the air temperature falls below the minimum threshold. Do not start paving if the surface temperature does not meet the requirements and the air temperature is forecast to fall below the minimum temperature within 4 hours of starting work.

Table 407.09-1: Temperature Limitations

Compacted Thickness	Minimum Air or Surface Temperature (°F)	
	Unmodified mixes (PG 64, 67)	Modified mixes (PG 70, 76, 82)
≤ 1.5 inches	45	55
> 1.5 inches to < 3.0 inches	40	50
≥ 3.0 inches	35	45

3. For 411-TL, 411-TLD, 411-TLE, and 411-OGFC mixtures, placement shall proceed only when the pavement surface temperature and the air temperature are a minimum of 55° F and rising. Stop paving if the air temperature falls below 55°F immediately. Placement of these mixtures is restricted to the period between April 1 and October 31.

   For all other mixtures, do not place bituminous plant mix, with a compacted thickness of 1.5 inches or less, between November 30 and April 1. Do not place bituminous plant mix, with a compacted thickness greater than 1.5 inches, between December 15 and March 16. If the temperature meets the above requirements, outside of normal paving season, a request for a seasonal limitation waiver may be submitted for Departmental consideration. Requests shall be submitted in writing at least one week before the anticipated need.

Subsection 407.09, (pg. 326-327), 12-27-23; **Weather Limitations;** Revise Table 407.09-1, No. 3, and Remove No. 4:

Table 407.09-1: Temperature Limitations

Compacted Thickness	Minimum Air or Surface Temperature (°F)	
	Unmodified mixes (PG 64, 67)	Modified mixes (PG 70, 76, 82)
< 2.0 inches	45	55
≥ 2.0 inches	35	35[1]

[1]If compacted thickness < 3 inches and Temperature is < 55 degrees, an approved Warm Mix Additive is required in the mix.

3. For 411-TL, 411-TLD, 411-TLE, and 411-OGFC mixtures, placement shall proceed only when the pavement surface temperature and the air temperature are a minimum of 55°F and rising. Stop paving if the air temperature falls below 55°F immediately. Placement of these mixtures is restricted to the period between April 1 and October 31.

~~4. If determined necessary by the Department, the Contractor….~~

Subsection 407.13, (pg. 331), 8-28-24; **Mixing;** Revise 5th Paragraph No. 5:

5. The Contractor may store bituminous mixtures of Gradings A, AS, ACRL, and B for up to 48 hours, and Gradings BM, BM2, C, CS, CM, CW, D, E, and F for up to 96 hours, in a storage silo by complying with the following:

   (a) Add an approved silicone additive to the asphalt cement for mixes to be stored beyond the day of mixing.
   (b) Keep the stored bituminous mixture sealed at all times during storage.

(c) Fill the storage silo to at least 90% of capacity.

Subsection 407.15.A, (pg. 334), 12-19-22; **Compaction, General;** Revise Table 407.15:

Table 407.15 – Roller Requirements by Mix Type

Mix Type	Roller Requirements
307-A, 307-B, 307-BM-2, 307-C, 307-CW (except surface)	3 Rollers (Intermediate roller shall be Pneumatic)
307-AS, 307-ACRL, 411-D, 411-E, 307-CW (surface), 313-Asphalt Treated Permeable Base	3 Rollers (unspecified)
411-TL, 411-TLD, 411-TLE (when lift thickness > 1 inch)	3 Rollers (unspecified)
411-TL, 411-TLD, 411-TLE, 307-CS (when paved as a continuous layer)	2 Rollers (unspecified)
411-OGFC	2 Rollers (both rollers shall be static steel double drum, 10 Ton minimum
Any mix used for scratch paving	2 Rollers (breakdown shall be pneumatic)

Subsection 407.15.A, (pg. 334), 8-28-24; **Compaction, General;** Revise Table 407.15:

Table 407.15 – Roller Requirements by Mix Type

Mix Type	Roller Requirements
307-A, 307-B, 307-BM-2, 307-C, 307-CM, 307-CW (except surface)	3 Rollers (Intermediate roller shall b Pneumatic)
307-AS, 307-ACRL, 411-D, 411-E, 307-CW (surface), 313-Asphalt Treated Permeable Base	3 Rollers (unspecified)
411-TL, 411-TLD, 411-TLE (when lift thickness > 1 inch)	3 Rollers (unspecified)
411-TL, 411-TLD, 411-TLE, 307-CS (when paved as a continuous layer)	2 Rollers (unspecified)
411-OGFC	2 Rollers (both rollers shall be static steel double drum, 10 Ton minimum
Any mix used for scratch paving	2 Rollers (breakdown shall be pneumatic)

Subsection 407.15.B, (pg. 336), 12-27-23; **Density Requirements;** Revise Table 407.15-1:

Table 407.15-1: Density Requirements for Bituminous Pavement

Mix Type	% of Maximum Theoretical Density (Lot Average)	No Single Test Less Than, % (Sub Lot)
Travel Lanes ADT <1,000 A, B, BM, BM-2, C, CW, D, E TL, TLD, TLE (lift thickness > 1 inch)	90.0	87.0
Travel Lanes 1,000 <ADT <3,000 A, B, BM, BM-2, C, CW, D, E TL, TLD, TLE (lift thickness > 1 inch)	91.0	89.0
Travel Lanes ADT >3,000 A, B, BM, BM-2, C, CW, D, E TL, TLD, TLE (lift thickness > 1 inch)	92.0	90.0
Travel Lanes and Shoulders Any ADT CS,, OGFC TL, TLD, TLE (lift thickness <= 1 inch)	NA	NA
Shoulders B, BM, BM-2, D, E TL, TLD, TLE (lift thickness > 1 inch)	88.0	85.0

Subsection 407.15.B, (pg. 336), 8-28-24; **Compaction, Density Requirements;** Revise Table 407.15-1:

Table 407.15-1: Density Requirements for Bituminous Pavement

Mix Type	% of Maximum Theoretical Density (Lot Average)	No Single Test Less Than, % (Sub Lot)
Travel Lanes ADT <1,000 A, B, BM, BM-2, C, CM, CW, D, E TL, TLD, TLE (lift thickness > 1 inch)	90.0	87.0
Travel Lanes 1,000 <ADT <3,000 A, B, BM, BM-2, C, CM, CW, D, E TL, TLD, TLE (lift thickness > 1 inch)	91.0	89.0
Travel Lanes ADT >3,000 A, B, BM, BM-2, C, CM, CW, D, E TL, TLD, TLE (lift thickness > 1 inch)	92.0	90.0
Travel Lanes and Shoulders Any ADT CS, OGFC TL, TLD, TLE (lift thickness <= 1 inch)	NA	NA
Shoulders B, BM, BM-2, D, E TL, TLD, TLE (lift thickness > 1 inch)	88.0	85.0

Subsection 407.15.C, (pg. 336-337), 12-15-21; **Test Strips;** Revise 1st Paragraph:

Construct test strips for all mixtures that require density testing to establish rolling patterns, to accommodate the Department to calibrate nuclear gauges, to verify that the base course or surface course mixture meets the density requirements of the specifications, and for mix design and production verification as required. Adjustments to the roller pattern may be made at the direction of the Engineer for mixtures that do not require density testing.

Subsection 407.20.B.2.a, (pg. 342), 12-27-23; **Defective Materials, Acceptance or Rejection;** Revise 3rd Paragraph:

All acceptance samples will be split, and half of the sample will be retained by the Inspector. If the results of an acceptance test are questioned, the Central Laboratory will test the remaining half of the acceptance sample. The Department will use the results obtained by the Central Laboratory to evaluate the quality of the lot. The Contractor may submit a written request to have the split sample tested at a Regional Laboratory.

Subsection 407.20.C.3, (pg. 346-347), 12-15-21; **Loss on Ignition (LOI);** Revise 2nd & Remove 4th Paragraph:

If the percent of LOI in the aggregate differs by plus or minus 2% from the LOI indicated in the JMF, the Department will make a payment deduction in the price bid for the mix applied to the entire days production, not as a penalty but as liquidated damages. The percent of total payment to be deducted will be 5 times the percent that the LOI exceeds the JMF tolerance of plus or minus 2%.

~~To determine the deduction, the Department will use lots of approximately 5,000 square yards. The Department inspector will perform sampling and testing to establish the LOI according to the Department's sampling and testing procedures. If the initial tests indicate a variation in the LOI of plus or minus 2% than the value shown on the mix design, the Contractor shall perform the additional sampling necessary to establish the LOI of the aggregate in each lot, with the cost of the sampling being included in the contract unit prices bid for the paving items.~~

Subsection 410.06, (pg. 349), 12-26-24**; Preparing Designated Surface;** Revise Sentence:

Prepare the designated surface upon which the material is to be placed as specified in **405~~4~~.05**.

Subsection 410.11, (pg. 350), 12-26-24**; Maintenance;** Revise Sentence:

Perform maintenance as specified in **405~~4~~.09**.

Subsection 411.06, (pg. 361), 12-26-24**; Preparing the Designated Surface;** Revise 1st Sentence:

Prepare the designated surface upon which the material is to be placed as specified in **405~~4~~.05.**

Subsection 411.03.B, (pg. 353), 12-15-21; **Proportioning;** Revise Table 411.03-01:

Table 411.03-1: Proportions of Total Mixture, Percent by Weight

Surface Course	Effective Combined Mineral Aggregate	Asphalt Cement
Grading D	93.0 – 94.3	5.7 – 7.0 (1)
Grading E (2)	93.0 – 94.3	5.7 – 7.0 (1)
Grading E (shoulders)	93.5 – 94.0	6.0 – 6.5 (1)
Grading TL	92.5 – 94.3	5.7 – 7.5 (1)
Grading TLD	93.0 – 94.3	5.7 – 7.0 (1)
Grading TLE	93.0 – 94.3	5.7 – 7.0 (1)
Grading TLE (shoulders)	93.5 – 94.0	6.0 – 6.5 (1)
Grading OGFC	92.0 – 94.0	6.0 – 8.0 (1)

(1) If the effective combined specific gravity of the aggregate exceeds 2.80, the above proportions may be adjusted as directed by the Engineer. The upper limit for flow values shall not apply to mixes with modified asphalt liquids.

(2) The minimum allowable asphalt cement content for 411E low volume mixtures is 5.3%.

Subsection 411.03.B.4, (pg. 356), 10-17-23; **Grading OGFC;** Revise Table 411.03-5:

Table 411.03-5: Mixture Properties (Grading OGFC)

Mix	Minimum Void Content % (1)	Voids in Coarse Aggregate % (2)	Max. Cantabro Abrasion Loss % (2) (3)	Drain Down Loss % (4)
411OGFC	17	$VCA_{DRC} > VCA_{MIX}$	20	<0.3%

(1) Determined using the "Volume Method" described in Section 6.2.2. of AASHTO T 269.

(2) As described in National Asphalt Pavement Association (NAPA) Publication IS-115, "Design, Construction and Maintenance of Open-Graded Friction Courses."

(3) Cantabro Abrasion Loss specimens shall be aged as loose mix for 4 hours at lab compaction temperature.

(4) Tested in accordance with AASHTO T 305.

Subsection 411.03.C.1, (pg. 357), 12-27-23; **Recycled Asphalt Pavement;** Revise Table 411.03-6:

Table 411.03-6: Use of Recycled Asphalt Pavement

Mix Type	% RAP (Non-processed) (1)	Maximum % RAP (Processed) (2)	Maximum % RAP Processed and Fractionated (3)	Maximum Particle Size (inch)
411-D (PG64-22, PG67-22)	0	15	20	½
411-D (PG70-22, PG76-22, PG82-22)	0	10	15	½
411-E & 411-TLE (Roadway)	0	15	20	½
411-E & 411-TLE (Shoulder)	15	30	35	½
411-TL (PG64-22, PG67-22)	0	15	15	5/16
411-TL (PG70-22, PG76-22, PG82-22)	0	10	10	5/16
411-TLD (PG64-22, PG67-22)	0	15	15	5/16
411-TLD (PG70-22, PG76-22, PG82-22)	0	10	10	5/16

(1) "Non-processed" refers to RAP that has not been crushed and screened or otherwise sized such that the maximum recycled material particle size is less than that listed above prior to entering the dryer drum.

(2) "Processed" refers to RAP that has been crushed and screened or otherwise sized such that the maximum recycled material particle size is less than that above prior to entering the dryer drum.

(3) "Fractionated" refers to RAP that has been processed over more than one screen, producing sources of various maximum particle sizes (e.g., ¾ to ½ inch, ½ inch to #4, etc.). The Contractor may use the larger percentages of fractionated RAP specified only if the stockpile meets the consistency requirements set forth in Departmental procedures for approval of asphalt mix designs.

Subsection 411.03.C.1, (pg. 358), 12-15-21; **Recycled Asphalt Pavement;** Revise 2nd Paragraph:

All mixes shall contain at least 80% virgin asphalt, except for 411E Shoulder and 411TLE Shoulder Mixtures, which shall have at least 65% virgin asphalt.

Subsection 414.03.B, (pg. 367), 12-19-22; **Micro-Surfacing;** Revise Table 14.03-3:

Table 414.03-3: Micro-Surfacing

Test	Requirement
Mixing Time Test, seconds at 77 °F (T-102)	120 min
Mix Time, at 50 and 100 °F	(informational)
Set Time Tests: 30 minutes (T-139)	12 kg-cm min
Early Rolling Traffic Time: 60 minutes (T-139)	20 kg-cm min
Wet Stripping Test, % coating (T-114)	90% min
Wet Track Abrasion Test, loss in g/ft^2 (T-100)	75 max 6 days 50 max 1 hour
Measurement of Excess Asphalt (T-109)	50 $grams/ft^2$ max Sand Adhesion, 1,000 Cycles at 125 lbs
Classification Compatibility (T-144)	11 pt. min

Subsection 414.06.B, (pg. 377), 12-19-22; **Quality Control;** Add Subsection 5:

5. Aggregate Gradation. Prior to the start of production and at a minimum of once per day of production, perform a washed gradation (AASHTO T 27 with AASHTO T 11) of the stockpiled aggregate to ensure the gradation meets the mixture control tolerances of Table 903.12-2.

Subsection 415.03, (pg. 382), 12-19-22; **General Requirements;** Revise 1st Paragraph:

Coordinate operations so that vertical longitudinal faces do not exceed height requirements indicated by plans in areas to be used by public traffic. Taper transverse faces in a manner approved by the Engineer to avoid creating a traffic hazard. Perform cold planing in the direction of traffic.

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Subsection 501.13, (pg. 399), 12-19-22; **Testing Concrete;** Revise 2nd Paragraph:

The Engineer will determine the 28-day compressive strength of the concrete under construction by conducting tests during the progress of work in accordance with **604.15**. The method of making and curing test specimens will be in accordance with AASHTO R 100. Furnish the concrete necessary for the Engineer to conduct the field tests and provide a storage facility with watertight tanks of satisfactory size and number to accommodate the cylinder specimens. The Engineer may allow concrete that fails to meet the specified strength to remain in place, but the Department will pay for such concrete at a reduced price as specified in **604.31** to compensate for the loss of strength. Any reduction in payment because of low strength will be in addition to any reduction in payment related to deficiencies in pavement thickness or rideability.

Subsection 501.17.B, (pg. 409), 12-27-23; **Pay Factor and Required Corrective Action;** Revise 4th Paragraph:

A grinding strategy plan is required before any corrective action begins. Software such as ProVAL is required to generate a grinding plan. Submit a copy of the grinding plan for approval to the Engineer at least 5 days prior to starting any work. The grinding plan must include existing profile, proposed profile, start and stop grinding locations, length of proposed grinding, and direction of grinding. Perform required corrective work with approved grinding equipment or removing and replacing pavement as directed by the Engineer. Perform all corrective action at no cost to the department. Grinding equipment must meet **604.27.C**.

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Subsection 602.04.A, (pg. 429), 12-15-21; **Shop Inspection;** Revise A:

Fabricators of steel bridges shall hold the following certifications in accordance with the AISC Certification Program – Bridge QMS Certification:

1. As a minimum, all fabricators shall be certified in the category of Certified Bridge Fabricator – Intermediate Bridge (IBR) with applicable supplemental requirements.

2. Fabricators of advanced type bridges, as defined in the AISC Standard for Steel Bridges, shall be certified in the category of Certified Bridge Fabricator – Advanced (ABR) with applicable supplemental requirements.

3. Fabricators of diaphragms, cross-frames, floor beams, stringers (rolled beams) and laterals shall be certified in the category of Certified Bridge Fabricator – Intermediate Bridge (IBR), as a minimum.

4. Fabricators of bridge bearings, expansion joints, sign structures and other metal highway components as listed in the AISC standard shall hold certification under the AISC Certification Program – Bridge Component QMS Certification (CPT). As an alternative, fabricators of bridge bearing or expansion joints may hold certification under the Bridge QMS Certification in the category of Certified Bridge Fabricator – Intermediate Bridge (IBR).

Subsection 602.04.B, (pg. 429), 12-27-23; **Quality Assurance (QA) Shop Inspection;** Revise 1st & 3rd and Remove 2nd Paragraphs:

At least 6 weeks before starting shop fabrication, provide written notification to the Materials and Tests Division, with a copy to the Engineer, as to the location and schedule of the fabrication of structural steel, so that the Department may arrange for QA shop inspection.

Subsection 602.18.B, (pg. 460), 12-27-23; **Visual Inspection and Repair of Plate Cut Edges;** Revise Paragraph:

Visually inspect and repair plate cut edges in accordance with Article 5.2.6 of the AASHTO/AWS *Bridge Welding Code*, D1.5, current edition.

Subsection 602.19, (pg. 460, 461), 12-27-23; **Welds;** Revise Numbers 1 thru 9 and Add Table 602.19-1:

The following are revisions to the AASHTO/AWS *Bridge Welding Code*:

1. Add the following sentence to Article 8.1.1.1:

   After fabrication, Quality Control (QC) shall mark each piece (girders, beams, diaphragms, X-frames, bearings, etc.) with the fabricator's logo and the CWI Number of the QC Inspector accepting the piece. These stamps will signify that Quality Control (QC) has inspected the piece and that it meets the requirements of the plans and specifications.

2. Delete Article 8.1.3.1(3).

3. Delete Article 8.1.3.2.

4. Delete the last sentence in Article 8.1.3.4 and substitute the following:

   Only individuals certified for NDT Level II may perform nondestructive testing.

5. Delete 8.1.3.4(1) and 8.1.3.4(2).

6. Delete the period at the end of Article 8.6.1 and add the following:

   and access to all records necessary to verify conformance to plans and specifications.

7. Delete Article 8.7.1 and substitute the following:

   Complete joint penetration groove welds in main members, as identified in the contract documents shall be QC tested by nondestructive testing.

   Radiographic and ultrasonic testing shall both be performed using methods and frequencies required in the revised AWS Table 8.1 specified in Table 602.19-1.

   Longitudinal butt joints in beam or girder webs shall be 100% QC tested by nondestructive testing.

8. Add the following Article 8.22.4:

   Each Ultrasonic Unit shall be certified for general operational performance at a minimum time interval of 12 months with a method approved by the instrument manufacturer.

Table 602.19-1: NDT Methods and Frequency (revised AWS Table 8.1)

Weld Type	Joint Type	Process	Member Design Stress Type	NDT Method	Frequency
CJP groove welds	Butt joints other than in webs of flexural members	Other than ESW or EGW	Tension or reversal	RT and UT	100% of each joint
			Compression or shear	RT and UT	25% (See 8.7.4)
		ESW or EGW	Tension or reversal	RT and UT	100% of each joint
			Compression or shear	RT and UT	25% (See 8.7.4)
	Butt joints in webs of flexural members, transverse to the direction of bending stress	Other than ESW or EGW	Tension	RT and UT	1/6 of the web depth beginning at the tension flange or flanges for each joint
		ESW or EGW		RT and UT	
		Other than ESW or EGW	Compression	RT and UT	25% of the remainder of the web depth for each joint
		ESW or EGW		RT and UT	
	Butt joints in webs of flexural members, parallel to the direction of bending stress	Other than ESW or EGW	Shear	RT and UT	100% of each joint
		ESW or EGW		RT and UT	
	T- or corner joints	Any	Tension or reversal	UT	100% of each joint
			Compression or shear (including web to either flange)		25% (See 8.7.4)
PJP groove welds and fillet welds, Grade HPS 690W (HPS 100W)	Any	Any	Any	MT	100% of each joint
PJP groove welds and fillet welds, all other grades					10% (See 8.7.4)

Subsection 602.29, (pg. 465), 12-XX-23; **Annealing and Stress Relieving;** Revise 4th Paragraph:

Stress relieve members, such as bridge shoes, pedestals, or other parts that are built up by welding sections of plate together, according to Section 6.4 of AASHTO/AWS *Bridge Welding Code* D1.5 when required by the Contract.

Subsection 602.39, (pg. 470), 12-XX-23; **Erection, Shear Stud Connectors;** Revise 1st Paragraph:

After erecting the beams, attach the shear stud connectors in compliance with OSHA standards. Install the studs in the locations shown on the Plans. Install and test shear studs in accordance with the latest version of AASHTO/AWS D1.5, Chapter 9 Stud Welding. Clean the surface receiving the stud by shot blasting or grinding to a bright metal surface immediately before welding. Weld studs using automatically timed stud welding equipment only. At the beginning of each day or shift, each individual welder/operator and equipment must complete the Production Control/Pre-production Testing described in paragraph 9.7.1 of AASHTO/AWS D1.5. Only allow individuals, who repeatedly demonstrate satisfactory installation, to install the shear studs. The Contractor is responsible for the quality of all welds.

Subsection 603.01.B, (pg. 481), 12-26-24**; Certification Requirements;** Revise Subsection:

All contractors or subcontractors involved in field surface preparation or coating application shall be certified according to the Association for Materials Protection and Performance (AMPP) ~~Society for Protective Coatings (SSPC) Painting Contractor Certification Program (PCCP) or NACE International Institute Contractor Accreditation Program (NHCAP~~).

Contractors or subcontractors performing field coating application shall be certified according to ~~SSPC~~AMPP QP1, Field Application. ~~or equivalent, including NHCAP AS-1 Field.~~

Contractors and subcontractors performing field surface preparation of existing structures shall be certified according to ~~SSPC~~AMPP QP2, Field Removal of Hazardous Coatings. ~~or equivalent, including NHCAP AS-2 Hazard Waste Removal.~~

Ensure that all contractors and subcontractors that perform field surface preparation or field coating application are certified to the requirements of ~~SSPC~~AMPP; QP1 or QP2~~, or NHCAP; AS-1 Field or AS-2~~ before Contract award and remain certified for the duration of the Project. If a contractor's or subcontractor's certification expires or is suspended, do not allow that contractor to perform any work until the certification is reissued or reinstated. The Department will not consider any requests for time extensions for any delay in the completion of the Project due to an inactive certification and may apply liquidated damages. Provide a copy of the certifications to the Engineer before beginning work and notify the Engineer of all changes in certification status.

Subsection 603.06.A, (pg. 484), 12-26-24**; Schedule of Painting, New Structures;** Revise Table:

Table 603.06-1: System A – Inorganic/Organic Zinc

Paint System	Specification	Minimum Dry Film Thickness (mils)	Maximum Dry Film Thickness (mils)
Primer (shop coat)	Inorganic/Organic Zinc Silicate Paint, **910.03**	2.5	5.0
Intermediate Tie Coat	**910.03**, as modified below	2.0	5.0
Finish Coat (color coat)	Urethane Finish, **910.03** (match color shown on the Plans)	2.0	5.0

Subsection 604.03.A.1.a, (pg. 502), 12-19-22; **Design and Production Parameters;** Revise Table 604.03-1 and 4th paragraph:

Table 604.03-1: Composition of Various Classes of Concrete

Class of Concrete	Min 28-Day Compressive Strength (psi)	Min Cement Content (pound per cubic yard)	Maximum Water/Cement Ratio (pound/pound)	Air Content % (Design ± production tolerance)	Slump (inches)
A	3,000	564	0.45	6 ± 2	3 ± 1 (1)
D, DS (2, 3)	4,000	620	0.40	7 (3)	8 max
L (3, 4)	4,000	620	0.40	7 (3)	8 max
S (Seal)	3,000	682	0.47	6 ± 2	6 ± 2
X (5)					

(1) For slip forming, the slump shall range from 0 to 3 inches.

(2) Use Class D concrete in all bridge decks except box and slab type structures unless otherwise shown on the Plans. Use Class DS concrete in bridge decks with polish-resistant aggregate described in **903.03** and **903.24**.

(3) Design Class D, Class DS, and Class L concrete at 7% air content. Acceptance range for pumping and other methods of placement is 4.5-7.5%. Sampling will be at the truck chute.

(4) The unit weight of air dried Class L concrete (lightweight concrete) shall not exceed 115 pounds per cubic foot as determined according to ASTM C567.

(5) Plan specific requirements

Include chemical admixtures in the concrete mixture based on the ambient air temperature and expected weather conditions.

If using chemical admixtures, the allowable slump shall be a maximum of 8 inches. Do not exceed the water cement ratio.

Subsection 604.03.A.1.a, (pg. 502), 12-26-24; **Design and Production Parameters;** Revise Table 604.03-1 and Add Tables 604.03-1(a) and 604.03-1(b) after the last paragraph:

Table 604.03-1: Composition of Various Classes of Concrete

Class of Concrete	Min 28-Day Compressive Strength (psi)	Min Cement Content (pound per cubic yard)	Maximum Water/Cement Ratio (pound/pound)	Air Content % (Design ± production tolerance)	Slump (inches)
A	3,000	564	0.45	6 ± 2	3 ± 1 (1)
D, DS (2, 3, 6, 7)	4,000	620	0.40	7 (3)	8 max
L (3, 4, 6)	4,000	620	0.40	7 (3)	8 max
S (Seal)	3,000	682	0.47	6 ± 2	6 ± 2
X (5)					

(1) For slip forming, the slump shall range from 0 to 3 inches.

(2) Use Class D concrete in all bridge decks except box and slab type structures unless otherwise shown on the Plans. Use Class DS concrete in bridge decks with polish-resistant aggregate described in **903.03** and **903.24**.

(3) Design Class D, Class DS, and Class L concrete at 7% air content. Acceptance range for pumping and other methods of placement is 4.5-7.5%. Sampling will be at the truck chute.

(4) The unit weight of air dried Class L concrete (lightweight concrete) shall not exceed 115 pounds per cubic foot as determined according to ASTM C567.

(5) Plan specific requirements

(6) Class D, Class DS and Class L require the surface resistivity in accordance with AASHTO T 358 for design approval, acceptance, and verification requirements in accordance with Table 604.03-1(a) and Table 604.03-1(b).

(7) Class D and Class DS shall have a minimum supplementary cementitious material(s) replacement of 25% and in accordance with Table 604.03-4.

Table 604.03-1(a): Surface Resistivity Requirements for Mix Design Approval

Chloride Ion Penetration	Apparent Surface Resistivity[a] 4 by 8 in. (100 by 200 mm) Cylindrical Specimens (kΩ·cm) a = 3.8 cm	Action
High	< 12	Not approved; must redesign
Moderate	12 - 36	Approved with project verification
Low	≥ 37	Fully approved

[a] Wenner probe tip spacing; determined from 28-day acceptance cylinders

Table 604.03-1(b): Surface Resistivity Requirements for Project Acceptance and Verification

Chloride Ion Penetration	Apparent Surface Resistivity[a] 4 by 8 in. (100 by 200 mm) Cylindrical Specimens (kΩ·cm) *a* = 3.8 cm	Action
High	< 12	Redesign before next pour
Moderate	12 - 20	Monitor results
Low	≥ 21	Mix Design is verified

[a] Wenner probe tip spacing; determined from 28-day acceptance cylinders

Subsection 604.03.A.1.d, (pg. 504), 12-19-22; Add Subsection d:

d. **Performance Engineered Mixtures (PEM) Design and Production Parameters**

Proportion the concrete based on a water-cement ratio that does not exceed the maximum shown in Table 604.03-3. The fine aggregate shall not exceed 50% by volume calculation of the total aggregate volume. The volume of paste shall not exceed 25%. The Contractor may elect to use PEM as an alternate/option in replacement of Class A concrete.

Document mixture adjustments, for moisture corrections, on the daily concrete report. Ensure that the adjusted mix complies with all the performance criteria specified in Table 604.03-3.

Table 604.03-3: Composition of Performance Engineered Concrete

Class of Concrete	Min 28-Day Compressive Strength (psi)	Min Cement Content (pound per cubic yard)	Maximum Water/Cement Ratio (pound/pound)	Air Content % (Design ± production tolerance)
PEM (1,2,3,4,5)	3,000(1)	-	0.45	6 ± 2

(1) Or as shown on the Plans or approved shop drawings.
(2) Air Content must be accompanied with the Super Air Meter (SAM) number AASHTO T 395 for data collection only.
(3) Resistance of Concrete to Rapid Freezing and Thawing AASHTO T 161 for data collection only.
(4) Surface Resistivity Indication of Concrete's Ability to Resist Chloride Ion Penetration AASHTO T 358 for data collection only.
(5) Determining the Reactivity of Concrete Aggregates and Selecting Appropriate Measures for Preventing Deleterious Expansion in New Concrete Construction ASTM R80 for data collection only.

All Standards of Practice for Developing Performance Engineered Concrete Pavement Mixtures AASHTO R 101 are for data collection only.

Include chemical admixtures in the PEM mixture based on the ambient air temperature and expected weather conditions. Dosage rates for any admixtures incorporated into the concrete shall be stated during the mix design submittal process. All admixtures shall be compatible and incorporated into the concrete in accordance with the manufacturer's recommendations. Concrete mixtures utilizing multiple admixture manufacturers shall prove compatibility in accordance with the Departmental procedures.

Subsection 604.03.A.1.d, (pg. 504), 12-26-24; **Performance Engineered Mixtures (PEM) Design and Production Parameters;** Revise Table 604.03-3:

Table 604.03-3: Composition of Performance Engineered Concrete

Class of Concrete	Min 28-Day Compressive Strength (psi)	Min Cement Content (pound per cubic yard)	Maximum Water/Cement Ratio (pound/pound)	Air Content % (Design ± production tolerance)
PEM (1,2,3,4,5)	3,000(1)	-	0.45	6 ± 2

(1) Or as shown on the Plans or approved shop drawings.
(2) Air Content must be accompanied with the Super Air Meter (SAM) number AASHTO T 395 for design approval.
(3) Resistance of Concrete to Rapid Freezing and Thawing AASHTO T 161 for data collection only.
(4) Surface Resistivity Indication of Concrete's Ability to Resist Chloride Ion Penetration AASHTO T 358 for design approval, acceptance, and verification requirements in accordance with Table 604.03-1(a) and Table 604.03-1(b).
(5) Determining the Reactivity of Concrete Aggregates and Selecting Appropriate Measures for Preventing Deleterious Expansion in New Concrete Construction ASTM R80 for data collection only.

All Standards of Practice for Developing Performance Engineered Concrete Pavement Mixtures AASHTO R 101 are for data collection only.

Subsection 604.03.A.2, (pg. 504-505), 12-19-22; **Mix Design Submittal;** Revise 1st and 3rd Paragraphs, and Add 6th Paragraph:

2. **Mix Design Submittal.** Submit, for approval, the proposed design in accordance with Departmental procedures at least 14 days prior to use. Develop the design using saturated surface dry aggregate weights. The design shall be prepared in an approved testing laboratory by a TDOT Certified Concrete Mix Design Technician. The TDOT Certified Concrete Mix Design Technician shall certify that the information contained on the design submittal is correct and is the result of information gained from the actual trial batch. Build trial batches for design no more than 90 days before submitting the design. The trial batch shall produce an average compressive strength to

indicate that the specified 28-day strength can be obtained in the field. Make all strength determinations using equipment meeting the requirements of, and in the manner prescribed by, AASHTO T 22. The design shall provide concrete of the strength specified in all applicable Special Provisions, Plans, and Specifications. The approved mix design will expire at the end of each calendar year or if it does not meet the minimum 28-day strength requirements. Assume responsibility for all costs of concrete design, preparation, and submittal.

Self-consolidating concrete (Classes SCC, SH-SCC, and P-SCC) shall be verified prior to placement either at the ready mix, precast, or prestressed facility. The concrete producer shall notify Regional Materials and Tests a minimum of 1 business day prior to performing a trial batch verification of the submitted design. The trial batch will ensure that all batched quantities and target admixture dosage rates are acceptable and meet specification prior to design approval. All quantities and identified admixture target dosage rates shall meet the tolerances specified in **604.11**.

Performance engineered concrete (Class PEM) shall be verified prior to placement. The concrete producer shall perform trial batching in the presence of a Headquarters Materials and Tests representative. All quantities and admixture dosage rates shall meet the tolerances specified in **604.11**. Gradations shall be submitted with each request.

Subsection 604.03.A.2, (pg. 505), 1-8-25; **Mix Design Submittal;** Add 7th Paragraph:

For Class D, Class DS, Class PEM, and Class L concrete mixtures, surface resistivity values shall be submitted in accordance with Table 604.03-1(a) and Table 604.03-1(b).

Subsection 604.03.A.3, (pg. 506), 12-19-22; **Partial Cement Replacement with Fly Ash or Slag Cement;** Revise 3rd Paragraph, Table 604.03-03, and 4th Paragraph:

When designing Portland cement concrete with Type I or Type IL cement modified by the addition of fly ash and/or slag cement, meet the maximum cement replacement rates (by weight) and minimum substitution ratios (by weight) specified in Table 604.03-4 for the applicable type of modifier.

Table 604.03-4: Type I or Type IL Cement Modified by Fly Ash or Slag Cement

Modifier	Maximum Cement Replacement Rate % (by weight)	Minimum Modifier Cement Substitution Rates (by weight)
Slag Cement (Grade 100 or 120)	35.0	1:1
Class “F” Fly Ash	25.0	1:1
Class “C” Fly Ash	25.0	1:1

The Contractor may use ternary cementitious mixtures (mixtures with Portland cement, slag cement, and fly ash) for Class A, Class D, Class DS, Class PEM concrete provided that the minimum Portland cement content is 50%. The maximum amount of fly ash substitution in a ternary cementitious mixture shall be 20%. The Department will allow Type IS cement with ternary cementitious mixtures. When using a Type IS cement, do not use any additional slag cement as a partial replacement for the hydraulic cement. The Department will allow a maximum of 20% fly ash as a partial hydraulic cement replacement in Class A concrete using only Type IS cement.

Subsection 604.03.B, (pg. 507-510), 12-19-22; **Quality Control and Acceptance of Concrete;** Revise 2nd and 5th Paragraphs, Add Sentence after 5th Paragraph, Revise Nos. 7,8,10,11, and 9th Paragraph:

The minimum size of a batch shall be 2.5 cubic yards. If less than 2.5 cubic yards is needed, the concrete must be provided by a Volumetric Continuous Mixer as specified in **604.04.C.**

The concrete producer shall develop for the Engineer's approval and maintain at the plant a plant-specific Process Control Plan that shall apply to all Department contracts for the calendar year. Communicate all changes made to the Process Control Plan during the year to the Regional Materials and Tests Supervisor. Develop for the Engineer's approval a placement site Process Control Plan stating the procedures for sampling, testing, and inspection of the concrete. Maintain a record of all tests and inspections performed at the facility and placement site. Provide these documents to the Engineer upon completion of the Project for inclusion in the Project records. Provide a binder of current records in accordance with Departmental procedures.

No water shall be added in the field for Class PEM concrete.

7. Conduct slump AASHTO T 119 or slump flow ASTM C1611 and air tests AASHTO T 152. For Class PEM provide the Super Air Meter (SAM) number for informational purposes only.

8. Conduct yield tests AASHTO T 121. If yield varies more than plus or minus 2% from that shown on the design, stop all batching operations until the problem has been identified and corrected or a new concrete design has been obtained. Additionally for Class PEM only, determine Unit Weight by AASHTO T 121.

10. Conduct tests for concrete and ambient air temperatures AASHTO T 309.

11. Provide a daily report to the Engineer that identifies the date, Contract and Project, Item number(s), batch weights, aggregate gradations, moisture corrections, admixtures, slump, air content, temperatures, and similar pertinent information.

The Department or its representative will be responsible for performing all acceptance tests. A TDOT Concrete Field-Testing Technician or ACI equivalent will sample and test in accordance with Departmental 604.04 510 procedures. The Department will ensure the Contractors initial curing conditions are properly maintained during the initial curing period as specified in **722.09** and all acceptance cylinders are transported according to AASHTO R 100.

Subsection 604.03.B, (pg. 507-510), 1-8-25; **Quality Control and Acceptance of Concrete;** Revise 5th and 6th Paragraphs, Revise No. 7, and 10th Paragraph:

The concrete producer shall develop for the Engineer's approval and maintain at the plant a plant-specific Process Control Plan that shall apply to all Department contracts for the calendar year. Communicate all changes made to the Process Control Plan during the year to the regional Materials and Tests Field Services Team Lead. Develop for the Engineer's approval a placement site Process Control Plan stating the procedures for sampling, testing, and inspection of the concrete. Maintain a record of all tests and inspections performed at the facility and placement site. Provide these documents to the Engineer upon completion of the Project for inclusion in the Project records. Provide a binder of current records in accordance with Departmental procedures.

No water shall be added in the field for Class PEM concrete above the approved water-cement ratio submitted and approved during trial batching.

7. Conduct slump AASHTO T 119 or slump flow ASTM C1611 and air tests AASHTO T 152. For Class D, Class DS, Class PEM, and Class L provide the Sequential Air Meter (SAM) AASHTO T 395 number for design approval and Surface Resistivity AASHTO T 358 for design approval, acceptance, and verification requirements in accordance with Table 604.03-1(a) and Table 604.03-1(b).

The Department or its representative will be responsible for performing all acceptance and verification tests. A TDOT Concrete Field-Testing Technician or ACI equivalent will sample and test in accordance with Departmental 604.04 ~~510~~ procedures. The Department will ensure the Contractors initial curing conditions are properly maintained during the initial curing period as specified in **722.09** and all acceptance cylinders are transported according to AASHTO R 100.

Subsection 604.04.A.1, (pg. 511), 12-19-22; **Batching Plant, Multi-Aggregate Feed System, and Equipment, General;** Revise 2nd Paragraph:

All producers of concrete shall be on the Department's Producer List.

Subsection 604.04.B.3, (pg. 513), 12-19-22; **Truck Mixers and Truck Agitators;** Revise 1st Paragraph:

Ensure that truck mixers used for mixing and hauling concrete, as well as the truck agitators used for hauling central-mixed concrete, meet all the applicable requirements specified in **604.04.B.1**. Truck mixers shall have a manufacturer's plate indicating the various uses for which the equipment is designed, the gross volume of the drum, and the minimum and maximum speed of rotation of the drum or blades for charging, mixing and agitating. Equip truck mixers with an approved device for recording the number of revolutions of the drum or blades.

Subsection 604.15.A, (pg. 532), 12-19-22; **Compressive Strength Tests of Concrete, General;** Revise 2nd Paragraph:

The frequency of testing for compressive strength to determine when forms may be removed, or when a structure may be put into service, shall be as requested by the Contractor or as deemed necessary by the Engineer in accordance with **604.15.C** or **604.15.D**.

Subsection 604.15.B, (pg. 532-533), 12-19-22; **Concrete Acceptance Cylinders;** Revise 1st, Remove 2nd and Revise 3rd, 5th, and 6th Paragraphs:

The Department will test the specimens for compressive strength according to AASHTO T 22. Provide the necessary concrete for making test specimens and adequate curing and storage facilities specified in **722.09** at no additional cost to the Department. Provide hourly temperature data for each day the specimens were kept in the initial curing environment.

~~Concrete cylinders submitted for testing beyond 28 days shall comply with the design strength requirements specified in **604.03** or the Plans.~~

If the acceptance cylinders fail to meet the specified strengths, the Contractor must provide QC data from the batching operation for the suspect concrete delivered and a letter of intent to core the suspect location. When these requirements are met, the Contractor may then elect to drill a minimum of two or maximum of three concrete core samples per set of cylinders from the hardened concrete. The cores shall be obtained in accordance with Departmental procedures. Obtaining the concrete cores and repairing the concrete core holes shall be at no cost to the Department.

The Engineer will not accept cores submitted for testing beyond 56 days.

The average compressive strength of all the cores taken to represent the failing concrete acceptance cylinders will be considered to be the acceptance strength of record for the in-place concrete. Any core that fails to meet the standard for cores in the Departmental procedures will be discarded untested and not considered in the average compressive strength. In accordance with **604.31**, the Engineer will accept at a reduced pay concrete that meets the required strengths specified in **604.03** or the Plans for the respective class.

Subsection 604.15.B, (pg. 532-533), 1-8-25; **Concrete Acceptance Cylinders;** Revise 1st and Add 6th Paragraph:

The Department will test the specimens for compressive strength according to AASHTO T 22 and surface resistivity for Class D, Class DS, Class PEM, and Class L according to AASHTO T 358 and Table 604.03-1(b). Provide the necessary concrete for making test specimens and adequate curing and storage facilities specified in **722.09** at no additional cost to the Department. Provide hourly temperature data for each day the specimens were kept in the initial curing environment.

If acceptance cylinders fail to meet the specified surface resistivity values for Table 604.03-1(b) for Class D, Class DS, Class PEM, and Class L concrete mixtures, the entire surface shall be sealed with an approved penetrating sealer listed on the Department's Qualified Producer List at no additional cost to the Department.

Subsection 604.15.C, (pg. 534), 12-19-22; **Compressive Strength Tests of Concrete, Early Break Cylinders;** Revise 1st Paragraph**:**

Make and cure all test specimens according to AASHTO R 100, and the applicable procedures therein defined for Field Cured Specimens, unless otherwise specified by the Engineer. The Department will test the specimens for compressive strength according to AASHTO T 22. Provide the necessary concrete for making test specimens at no additional charge to the Department.

Subsection 604.15.D, (pg. 534), 12-19-22; **Compressive Strength Tests of Concrete, Maturity Method;** Add Subsection D:

D. Maturity Method

Strength of concrete in-place may be estimated by the Standard Practice for Estimating Concrete Strength by the Maturity Method AASHTO T 325 and Departmental procedures for critical activities. (open pavement to traffic, removing forms, post tension, shipping, cold weather).
The Department will break a set of cylinders made from the pour in question to verify the strength-maturity relationship, the concrete will be accepted on the basis of the 28 day strength as defined by the strength-maturity relationship. If the cylinders break within 10% of the estimated strength based on the strength-maturity relationship, the concrete will be accepted on the basis of the 28 day strength as defined by the strength-maturity relationship. If the cylinders break outside of the 10% tolerance, the 28 day cylinders will be broken and the concrete will be accepted per **604.15.B**.

Subsection 604.16.E, (pg. 539), 12-27-23; **Placing Concrete, Joints;** Remove 4th and Revise 5th Paragraphs:

For box culvert construction, place the concrete in the walls and allow to set at least 4 hours before constructing the top slab.

Subsection 604.19, (pg. 541), 12-19-22; **Removal of Forms and Falsework;** Revise 3rd Paragraph:

Release and remove falsework and supports under concrete structures only when the following conditions are met:

1. Representative specimens of the concrete, made and cured in accordance with **604.15.C**, attain a compressive strength of 3,000 pounds per square inch or when Strength Maturity relationship indicates the concrete has achieved 3000 pounds per square inch and has been verified per **604.15.D**.

2. The concrete has been in place a minimum of 7 days, not counting days of 24 hours each in which the temperature falls below 40 °F, or 21 calendar days, whichever occurs first.

Subsection 604.27.C, (pg. 551), 12-27-23; **Pay Factor and Required Corrective Action;** Revise 3rd Paragraph:

A grinding strategy plan is required before any corrective action begins. Software such as ProVAL is required to generate a grinding plan. Submit a copy of the grinding plan for approval to the Engineer at least 5 days prior to starting any work. The grinding plan must include existing profile, proposed profile, start and stop grinding locations, length of proposed grinding, and direction of grinding. Perform corrective action, including grinding of bridge decks and approach slabs, removal of pavement tie-ins, resurfacing, and application of sealants, at no additional cost to the Department.

Subsection 604.31, (pg. 557), 12-19-22; **Basis of Payment;** Revise 6th & 7th Paragraphs and Revise Equation:

Where concrete mixture does not meet the specified strength but is allowed to be included in the permanent construction as specified in **604.20** or the acceptance strength of record fails to meet the strength specified in **604.15**, the Department will use the following equation to determine the price deduction for the invoiced price of the defective concrete mixture.

$$PD = (3 \times Ds) \text{ x } IP \text{ x } Q$$

Where:

PD = Price Deduction by the Dollar

$$Ds = \left[\frac{(\text{Specified Strength-Actual Strength})}{\text{Specified Strength}}\right]$$

IP = Invoice Price by the Cubic Yard

Q = Quantity of Defective Concrete by the Cubic Yard

The price deduction shall only apply to the invoiced delivery cost of the defective concrete mixture. The deduction shall not apply to incidental items associated with the bid items such as labor, reinforcing steel, etc. Supply the Engineer with a certified invoice from the producer for the defective concrete mixture. The certified invoice will be for the cost of the concrete mixture with taxes and fees delivered to the project.

Subsection 607.02.B, (pg. 579), 12-15-21; **Materials, Pipe Culverts, Cross Drains, Side Drains, & Storm Drains;** Remove 1st Sentence:

B. Pipe Culverts, Cross Drains, Side Drains, & Storm Drains

~~Where Pipe Culverts (Cross Drains & Median Drains) are specified, provide them in accordance with the following:~~

Subsection 607.07, (pg. 582), 12-15-21; **Joining Pipe:** Revise 5th paragraph.

HDPE, PP, SRTRP, and PVC pipe shall be joined in accordance with ASTM D3212 and meet the performance requirements for water-tight. Install joints so that the connection of pipe sections, for a continuous line, will be free from irregularities in the flow line.

Subsection 615.09, (pg. 624), 12-19-22; **Proportioning and Mixing of Concrete;** Revise 5th Paragraph:

Make concrete test specimens for Class P and Class P-SCC, in accordance with AASHTO R 100 and ASTM C1758 respectively, to determine the adequacy of the concrete design and the minimum time at which the stress may be applied to the concrete. Cure the test specimens used to determine the time at which stress may be applied in the same manner and under the same conditions as the bridge members. The initial curing of specimens to determine the design strength of the concrete shall be specified above with additional curing water, as provided in AASHTO R 100. The compressive strength of the concrete will be estimated using the Maturity Method in accordance with **604.15.D.** The frequency of sampling and testing will be in accordance with Departmental procedures.

Subsection 619.04.A, (pg. 652-653), 12-15-21; **Volumetric Continuous Mixers;** Revise No. 3 & Ticket List:

3. The volumetric mixing plant shall be operated and calibrated by a Volumetric Mixer Operator with a TDOT Concrete Field Testing Technician Certification or equivalent. In the presence of the Engineer, perform the calibration of gate settings according to the manufacturer's recommendations for the mix design to be used before starting work. The calibration procedure shall account for the moisture content of the aggregates. The yield shall be maintained within a tolerance of plus or minus 1% and verified using a minimum 2 cubic feet container every 50 cubic yards. Recalibrations will be necessary when indicated by the yield checks, and at any other times the Engineer deems necessary to ensure proper proportioning of the materials.

Each load of concrete produced by a volumetric continuous mixing plant shall be accompanied by a Concrete Delivery Ticket. The ticket shall include as a minimum the following:

a. Date
b. Contract number
c. County
d. Class of concrete
e. Concrete design number
f. Number of cubic yards
g. Load number
h. Truck number
i. Maximum water allowed by design
j. Total water added
k. Water-cementitious materials ratio
l. Time loaded
m. Time discharged
n. Signature of producer's Volumetric Mixer Operator

Subsection 619.04.A, (pg. 653), 12-19-22; **Volumetric Continuous Mixers;** Revise Ticket List:

Each load of concrete produced by a volumetric continuous mixing plant shall be accompanied by a Concrete Delivery Ticket. The ticket shall include as a minimum the following:

a. Date
b. Contract number
c. County
d. Class of concrete
e. Concrete design number
f. Number of cubic yards
g. Load number
h. Truck number
i. Maximum water allowed by design
j. Total water added
k. Water-cementitious materials ratio

l. Time discharged
m. Signature of producer's Volumetric Mixer Operator

Subsection 622.03.A, (pg. 665), 12-19-22; **Proportioning and Quality Assurance of Shotcrete, Proportioning;** Revise 3rd Paragraph:

Shotcrete shall meet the performance requirements specified in Table 622.03-1 and meet the requirements for cement replacement in **604.03.A.3**.

Subsection 623.02.C.1, (pg. 673), 12-15-21; **Modular Roadway Expansion Joints, Fabrication and Construction;** Revise No. 1:

1. Construct the expansion joint systems as shown on the shop drawings. Meet the tolerance requirements included in AASHTO specifications. Perform all welding according to AWS specifications and by certified welders only. Ensure that fabricators are certified under the AISC Certification Program – Bridge Component QMS Certification (CPT). As an alternative, fabricators of bridge bearing or expansion joints may hold certification under the Bridge QMS Certification in the category of Certified Bridge Fabricator - Intermediate Bridge (IBR).

Subsection 623.03.C.2, (pg. 676, 677), 12-15-21; **Strip Seal Expansion Joints, Fabrication and Construction;** Revise No. 2:

2. Shop drawings shall also supply information regarding material specifications, geometry, a table of variable temperature and dimensions, and a bill of material. The maximum joint opening shall be 4 inches. Construct the expansion joint systems in accordance with the details shown on the shop drawings. Tolerance requirements shall be in accordance with AASHTO Specifications. Perform all welding in accordance with AWS specifications and by certified welders only. Ensure that fabricators are certified under the AISC Certification Program – Bridge Component QMS Certification (CPT). As an alternative, fabricators of bridge bearing or expansion joints may hold certification under the Bridge QMS Certification in the category of Certified Bridge Fabricator - Intermediate Bridge (IBR).

S T A T E **O F** **T E N N E S S E E**

(Rev. 12-15-21) January 1, 2021
(Rev. 12-19-22)
(Rev. 12-26-24)

Supplemental Specifications – 700SS

of the

Standard Specifications for Road and Bridge Construction

January 1, 2021

Subsection 702.02, (pg. 688), 12-19-22; **Materials, Revise 4th Paragraph:**

The Department will make compressive strength test specimens in accordance with AASHTO R 100.

Subsection 705.06, (pg. 697-698), 12-19-22; **Installation of Posts; Revise 1st, 2nd, Nos. 1,2,3, & 4 and 4th Paragraphs:**

Before beginning any excavation or driving any guardrail post, determine the location of all underground electrical, drainage, and utility lines in the vicinity, and conduct work to avoid damaging these facilities. Dig or drill holes to the depth shown on the Plans and/or the approved Shop Drawings and to a size that will allow proper setting of the posts and sufficient room for backfilling and tamping. Drive posts using approved methods and equipment, provided the posts are erected in the proper position and are free of distortion, burring, or other damage.

If solid rock is encountered while installing guardrail posts to the minimum depth required. The installation of guardrail posts shall meet requirements that are detailed in the Departments Standard Drawings or approved Shop Drawings for drilling post holes.

If solid rock is encountered when installing end terminals using tubes, install posts 1 and 2 to full depth or a minimum of 36 inches into the solid rock. Backfill the holes around the steel tube with the cutting spoils.

See approved shop drawings for additional information concerning post depth and hole size.

Backfill dug holes with selected earth or other suitable materials in layers not to exceed 4 inches in thickness. Thoroughly tamp each layer. After backfilling and tamping is complete, hold the posts or anchors securely in place.

Subsection 705.06, (pg. 698), 12-15-21; **Installation of Posts; Add new 7th Paragraph:**

When an underground structure or utility prevents proper post installation for a run of guardrail, posts may be omitted along the run of guardrail only as detailed in the Department's Standard Drawings. A post will not be omitted from any end terminal or transition. If the conditions noted for omitting posts cannot be used, then the use of a guardrail footing or weak post attachment to culvert may be used as detailed in the Department's Standard Drawings

Subsection 705.10, (pg. 700), 12-15-21; **Basis of Payment; Add new 7th Paragraph:**

When posts are omitted from a run of guardrail, payment shall be as noted in the Standard Drawings.

a. For 1 post being omitted, the Department will pay the contract unit price for W Beam Guardrail (Type 2) MASH TL-3.

b. For 2 or 3 posts being omitted, the Department will pay for the linear feet of nested W Beam rail as detailed in the Standard Drawings at a rate equal of 1.5 times the contract unit price for W Beam Guardrail (Type 2) MASH TL-3.

c. If a guardrail footing or attachment to culvert was used, the Department will pay for work as noted in the Standard Drawings.

Subsection 710.06, (pg. 723), 12-19-22; **Aggregate Underdrains (with Pipe); Revise 1st Paragraph:**

Excavate the trench to receive the pipe at the locations shown on the Plans or as directed by the Engineer. If the Plans do not show dimensions, construct the width of the trench to be not less than 12 inches. Make the trench deep enough to intercept the water-bearing strata and to allow installation of the pipe and cover material. Unless otherwise shown on the Plans, spread a 2-inch layer of aggregate on the bottom of the trench, compact it, and bring to a uniform grade.

Subsection 712.02, (pg. 731-732), 12-15-21; **Materials; Revise List:**

Aluminum..... 916.02
Paint..... 910.02
Cold Rolled Carbon Steel -16 gauge ..... ASTM A1008
Non-metallic Drums and Barricades .....QPL
Reflective Sheeting..... 916.06

Subsection 712.02.B, (pg. 732), 12-15-21; **Temporary Pavement Marking Material; Revise 1st Paragraph:**

Unless otherwise specified, the material for pavement marking shall be either temporary pavement marking tape listed on the Department's QPL, or reflectorized paint with raised reflective pavement markers placed as shown on the Plans

Subsection 712.02.E, (pg. 733), 12-15-21; **Portable Impact Attenuators; Revise Heading & 1st Paragraph:**

E. Temporary Work Zone Crash Cushions

Temporary work zone crash cushions shall be in accordance with the Plans and Specifications, meet the requirements for the appropriate test level, and meet the requirements of and be listed on the Department's QPL or Standard Drawings.

Subsection 712.04 & D, (pg. 734 & 737), 12-26-24**; General, Signs;** Revise 4th Paragraph, & **D;** 5th Paragraph:

During periods of non-use, remove warning signs and other devices from the work area, and cover or otherwise position them so they do not convey their message to the traveling public and do not present a safety hazard to drivers. If covered, maintain the covering material in a neat and workmanlike manner during its use. The method of covering the sign face shall not deface or damage the retroreflective sheeting of the sign. Plastic bags shall not be allowed to cover signs.

D. Signs

Cover all existing signs or portions of a sign(s) that are not applicable to the Traffic Control Plan so as not to be visible to traffic, or remove such sign(s) from the roadway when not in use. Signs shall be covered with an opaque, form fitting, tear resistant material that fully obscures the sign text and shall not deface or damage the retroreflective sheeting of the sign. Plastic bags shall not be allowed to cover signs.

Subsection 712.04.B, (pg. 735-736), 12-15-21; **THP Troopers and Uniformed Law Enforcement Officers; Revise 2nd Paragraph:**

When a THP Trooper is not available, the Contractor may provide a Uniformed Law Enforcement Officer if approved by the Engineer and the Regional Safety Coordinator or Regional Operations Office. All Uniformed Law Enforcement Officers shall provide a marked Federal, State, County, City, or Metropolitan government law enforcement vehicle equipped with blue lights and have the authority to write traffic tickets and make arrests within the project site. The Uniformed Law Enforcement Officer shall maintain a detailed written log of enforcement activities and shall submit the log to the Engineer for verification each month.

Subsection 712.06, (pg. 743), 12-15-21; **Temporary Marking; Revise Heading, Add No. 2, & Revise No. 1 & 3:**

712.06 Temporary Pavement Marking

Unless otherwise specified, install temporary pavement marking as follows:

1. Provide 4-inch wide pavement marking (line) for center, edge, lane and barrier lines as shown on the Plans for projects that will have traffic maintained overnight. For temporary pavement markings (line) on intermediate layers of pavement, use reflective tape, reflectorized paint, and raised pavement markers, or a combination thereof as shown on the Plans or as required by the Engineer, and install meeting **716, 910.02, 919.04**, or Department's QPL at the end of each day's work. Short, unmarked sections will not be allowed. Preserve established no-passing zones, if any, on the existing pavement; if no-passing zones have not previously been established, establish them before beginning the work. Mark two-lane, two-way highways with 10-foot long center lines applied on 40-foot centers and appropriate no-passing barrier lines.

2. When required, provide temporary pavement markings at intersections for temporary pavement markings on intermediate layers of pavement. The Department will require temporary intersection pavement markings to be reflectorized paint, or removable pavement marking meeting **716, 910.02, 919.04**, and or Department's QPL.

3. Where required on the completed permanent pavement surface, meet **716.03**.

Subsection 712.09, (pg. 744, 745), 12-15-21; **Method of Measurement; Revise No. 5, 7, 8 & Add 9:**

5. Warning Lights and Flashing Arrow Boards by the unit, Changeable Message Signs per each for the type designated. Payment will be based on the maximum number in place at one time.

7. Temporary Work Zone Crash Cushion based on the initial installation of each. No additional payment will be made for removal, moving, and reinstalling at other locations on the Project as directed by the Engineer. Payment will be based on the maximum number in place at one time.

8. Temporary pavement marking (line) for edge, center, lane and barrier lines will be measured as listed in the plans, complete in place and accepted, as Painted Pavement Marking (Line) regardless of whether the lines are painted, taped markings, or raised pavement markers, or a combination of the above as shown on the Plans or as required by the Engineer. Only the marked line will be measured for payment.

9. Temporary pavement markings at intersections will be measured as listed in the plans complete in place and accepted as Painted Pavement Marking (Description) or Removable Pavement Marking (Description)

Subsection 712.10, (pg. 746, 747), 12-15-21; **Basis of Payment; Revise Item List & Paragraphs 4, 5, 9, Remove Paragraph 8:**

Item	*Pay Unit*
Traffic Control	Lump Sum
Portable Barrier Rail	Linear Feet
Temporary Work Zone Crash Cushion	Each
Signs	Square Feet
Flexible Drums	Each
Temporary Barricades (Type)	Linear Feet
Removable Pavement Marking (Description)	Linear Feet
Changeable Message Sign Unit	Each
Arrow Board (Type C)	Each
Barrier Rail Delineator	Each
Temporary Flexible Tubular Delineator	Each

Payment for Temporary Work Zone Crash Cushion will be made at the contract price, complete in place, with total payment based on the maximum number in place at one time as specified in **712.09**.

Payment for Signs (Construction) is full compensation for providing sign panels with proper sheeting and legend, erecting on proper supports, furnishing all mounting hardware, covering when not in use, relocating, handling, and maintaining until Project completion. Vertical Panels will be paid as Signs (Construction).

Payment for Removable Pavement Marking items shall be full compensation for the installation, maintenance, and removal of the marking line when it is no longer required.

Subsection 714.02, (pg. 757-758); 12-26-24, **Materials**; Revise subsection:

Provide materials as specified in **917** and as follows:

Portland Cement Concrete, Class A..... **604**
Crushed Stone Grading D..... **903.05**
Steel Bar Reinforcement for Concrete Structures..... **907.01**
Welded Steel Wire Fabric..... **907.03**
Gray Iron Castings..... **908.07**
Inorganic Zinc Paint..... **910.03**
Cement Concrete Curing Materials..... **913**
Conduit ..... **917.05** or **917.07**

Within 30 days after the issuance of the work order, submit to the Engineer ~~four collated~~one digital set~~s~~ of the manufacturer's descriptive literature and technical data, fully describing the types of lighting equipment proposed for use. In the descriptive literature, identify the manufacturer and model, and include sufficient information for the Engineer to determine if the equipment or material meets the requirements of the Plans and these Specifications. Include with the~~se~~ set~~s~~ of submittal data a list of the materials submitted along with descriptive material for, but not limited to, the following items when applicable.

1. Complete photometric data of luminaires as published by the manufacturer with independent testing laboratory results.

~~2. Computer printouts showing illumination levels throughout each interchange area where high mast luminaires are to be installed.~~

2~~3~~. General details of light standards, breakaway bases, and bracket arms. For light standards ~~taller than~~with a mounting height from 30 feet to 50 feet, submit one set of design calculations and ~~six~~ one digital print~~s~~ of "Design" or "Shop" drawings to the Traffic Design Division ~~of Structures~~ for approval purposes. The Department will review these drawings at the earliest possible date and will return ~~two~~ digital prints marked "Approved for Fabrication," or "Returned for Revisions as Noted." Respond by taking appropriate action to ensure the earliest possible correction of these items so as not to delay the installation.

3~~4~~. Highmast tower details with a set of design calculations for each height including access hole, base, anchorage, head frame, and lowering device. Include specification references for materials and location, type, size, and extent of welds. In addition to the set of design calculations, submit ~~six~~one digital print~~s~~ of "Design" or "Shop" drawings for each highmast tower height to the Traffic Design Division ~~of Structures~~ for approval purposes~~,~~ in a manner similar to that specified in Item 2~~3~~ above for light standards ~~taller than~~with a mounting height from 30 feet to 50 feet.

4~~5~~. Dimension sheets and performance data on all related equipment.

The Engineer will retain one copy and forward one copy each to the local entity (city or county engineer) and the Traffic Design ~~Operations~~ Division for their review.

Also include with the submittal set~~s~~ detailed scale drawings of all non-standard or special equipment and of all proposed deviations from the Plans. Deviations from the Plans or Specifications require approval from the Traffic Design ~~Operations~~ Division. Include a letter requesting deviations or alternate materials in the submittal for Traffic Design ~~Operations~~ Division approval. Upon request, submit for approval sample articles of materials proposed for use. The Department will not be liable for any materials purchased, labor performed, or delay to the Work prior to such approval.

In addition to the above, include with each submittal a notarized letter certifying that all lighting system materials listed in the submittal conform to the Plans and Specifications. Also submit to the Engineer a statement from the Maintaining Agency that all lighting system materials listed in the submittal are acceptable to the Agency.

Subsection 714.03, (pg. 758); 12-26-24, **Codes**; Revise subsection:

Furnish material and perform all work in strict accordance with the latest revision of the National Electrical Code (NEC), the National Electrical Safety Code (NESC), the Illuminating Engineering Society (IES) publications, ANSI standards, and the codes, regulations, and rules prevailing in the area in which the Work is being performed, as applicable.

Subsection 714.05.A.1, (pg. 759-761); 12-26-24, **Underground Conduit, General**; Revise 1st, 4th, 5th, and 6th Paragraphs, Add new **1.c**:

Underground conduit shall ~~consist of~~be placed as: encased, ~~or~~ direct burial conduit, or by direction boring method. Install conduit in a trench excavated to the dimensions and lines specified.

Obstructions encountered when excavating trenches for underground conduit may require minor changes, such as in locations of conduit runs and pull boxes. Obtain the Engineer's approval before making such changes. Where possible, contact the utility companies to have clear distance required by the specific utility company's standards and specifications to keep electric conduits and pullboxes away from ~~provide a minimum of 12 inches between the finished lines of conduit runs and~~ utility facilities, such as gas lines, water mains, and other underground facilities not associated with the electrical system. Where the conduit run is adjacent to concrete walls, piers, footings, and similar structures, maintain a minimum of 4 inches of undisturbed earth or firmly compacted soil between the conduit and the adjacent concrete or, when the conduit is encased, between the encasement and the adjacent concrete.

Unless shown on the Plans, do not excavate trenches in existing pavement or surfaced shoulders to install conduit. If it is necessary to place a conduit under an existing pavement, install the conduit by ~~jacking~~directional boring ~~-~~or other approved means with galvanized rigid steel conduit or schedule 80 PVC conduit.

Keep ~~jacking and~~ drilling pits at least 10 feet from the edge of the paved shoulder or sidewalk unless otherwise directed by the Engineer. When the Plans specifically allow excavation of a trench through an existing pavement or surfaced shoulder, restore the pavement and/or surface and base to their original condition. Do not leave boring pits open for extended periods of time.

c. **Directional Boring Conduit**. To be used under existing: roads, sidewalks, and business drive.

Subsection 714.05.B, (pg. 762); 12-26-24, **Conduit On Structures**; Revise 1st, & Add New Last Paragraph:

Existing bridges i~~I~~nstall conduits, conduit fittings, hangers, expansion fittings, and accessories as shown on the Plans and, unless otherwise specified, in accordance with the following:…

Proposed bridges provide structural lighting item materials for the bridge designer to include in the proposed bridge superstructure and substructure when lighting is required.

Subsection 714.08.A.3, (pg. 766); 12-26-24, **Wood Poles**; Revise Paragraph:

3. **Wood Poles (For Utility Use Only).** Excavate for wood poles as specified for prestressed concrete butt base pole foundations in **714.08.A.2**. Dig or drill the holes to the depth shown on the Plans and in such diameter to allow satisfactory use of mechanical tamping equipment.

Subsection 714.10, A & B, (pg. 767-769); 12-26-24, **Luminaires, A. High Intensity Discharge (HID), B. Light Emitting Diode (LED)**; Revise 1st Paragraph, Remove **A.**, **B**; Revise 1st Paragraph & No. 3:

The Department only ~~U~~uses Light Emitting Diode (LED)~~the following~~ luminaires ~~types on the~~ for roads and bridges: ~~High Intensity Discharge (HID) which includes High Pressure Sodium (HPS) and Metal Halide (MH); Fluorescent and Induction lamps; and Light Emitting Diode (LED).~~

~~A. High Intensity Discharge (HID)~~

~~High Intensity Discharge (HID) luminaires shall meet IES standards from LM-51-00 to LM-35-02. The HID luminaire shall be covered by a one-year written warranty starting from the system acceptance date. All the other electrical and mechanical component parts of the HID shall be covered by a five-year written warranty starting from the system acceptance date. The signed warranty certificate shall be submitted prior to final payment.~~

~~B.~~ Light Emitting Diode (LED)

Light Emitting Diode (LED) luminaires shall be manufactured in accordance with ANSI C136.37-2011 (or recent version). All testing and data sheets for proposed LEDs shall be included in the submittal package and shall include, but not limited to, the following: Illuminating Engineering Society ~~of North America~~ (IES~~NA~~): LM-79-08, LM-80-08, RP-8-14, TM-3-95, and TM-15-07 (all should be up-to-date versions). In addition to these requirements, the LEDs shall meet the following requirements:

3. Optical Assembly. The LED optical assembly package shall have a minimum Ingress Protection rating of IP 66 according to ANSI/IEC 60529. The luminaire shall have a standardized refractor/reflector to meet the required optical distribution as required by the plans. The optical assembly shall utilize high brightness, long life, minimum 70 color rendering index (CRI), (3000 K-5700 K) color temperature ~~(+/- 300 K)~~ LEDs binned according to ANSI C78.377. Lenses shall be UV-stabilized acrylic or glass. Provisions for house-side shielding shall be provided when specified.

Subsection 714.14, (pg. 770-771); 12-26-24, **Control Center**; Revise subsection:

Furnish and install a service pole or poles of the design, type, size, and class, and at the locations shown on the Plans, for the electric connection use. Install the service pole(s) as specified in **714.08** and as shown on the Plans. Set the service pole(s) plumb.

Notify the power company, at least 30 days before connection, of the need to furnish power to operate the lighting system.

Unless otherwise specified, furnish and install all the control center equipment and electrical supply facilities. The electrical supply facilities shall include the necessary service conduit from the control cabinet to the ~~delivery point~~proposed light poles designated on the Plans.

Construct a concrete slab for all proposed light control centers, unless the utility company wants to place the proposed light control center on a pole, of the dimensions and thickness indicated, around the

service pole foundation. Construct the slab of Class A concrete meeting the requirements of **604**, and reinforce the slab, if specified, as shown on the Plans.

Construct a 6-foot chain-link fence and gate, if the utility company requests, of the size specified around the control center as shown on the Plans and as specified in **707.**

Subsection 714.20.F, (pg. 774); 12-26-24, **Luminaires**; Revise Paragraph:

The Department will measure Luminaires of the size, type, and design specified by the unit, per each., ~~regardless of their classifications (i.e. LED, HID).~~

Subsection 714.21.E, & **F,** (pg. 777-778); 12-26-24, **Light Standards & Luminaires**; Revise Paragraphs:

E. Light Standards

The Department will pay for Light Standards of the type specified at the contract unit price per each, complete in place. Such payment is full compensation for furnishing and installing the complete light standards, including the ~~foundation,~~ standard, bracket arm or arms, associated hardware and wiring, grounding materials, excavation, backfilling materials, and backfilling. The Department will measure foundations for typical light standard (30 feet to 50 feet) and high mast towers separately.

F. Luminaires

The Department will pay for Luminaires of the size and type specified at the contract unit price per each, ~~regardless of their classifications (i.e. LED, HID),~~ complete in place. Such payment is full compensation for furnishing and installing the complete luminaire, including the ballast(s) or driver(s), lamp(s), glare shields where required, and associated hardware and wiring.

Subsection 716.03.B, (pg. 790), 12-15-21; **Application; Revise No. 3 & Add No. 4:**

3. **Temporary Pavement Marking (Line).** When thermoplastic is used on the final pavement surface, the Contractor may use reflectorized paint for the center, edge, lane and barrier lines installed meeting **716.07** and **910** at the end of each day's work and then install the permanent pavement marking after the paving operation is completed. Short, unmarked sections are not allowed. The Department will not directly measure and pay for temporary markings for the final surface and will consider the costs thereof to be incidental to the item for the permanent thermoplastic pavement markings (line).

4. **Temporary Pavement Markings at Intersections**. When required, temporary pavement markings at intersections are to be installed with reflectorized paint meeting **716.07** and **910**. The Department will measure and pay as noted in **712.09** and **712.10,**

Subsection 716.07.A, (pg. 793), 12-15-21; **Application; Revise 11th Paragraph:**

When reflectorized paint is required for temporary or final marking, install the paint meeting **910.02** at the end of each day's work. Do not leave any short, unmarked sections.

Subsection 717.03, (pg. 799-800), 12-19-22; **Basis of Payment; Revise Subsection:**

The Department will pay for Mobilization on a lump sum basis.

The Department will make partial payments for Mobilization based on the amount bid for mobilization and the total original contract amount for all items of work. If the amount bid for the item of Mobilization exceeds 10% of the total amount bid for the Contract, the Department will pay that portion exceeding 10% on the last partial pay estimate. Payments will be made according to Table 717.03-1.

Table 717.03-1: Payment Schedule for Mobilization

Payment Estimate Number or Completion of Contract	Payment Amount whichever is least	Accumulated Payment whichever is least
Estimate # 1	25% Lump Sum Item or 2.5% Contract Price	25% Lump Sum Item or 2.5% Contract Price
5% of Contract (Excluding previous mobilization payments and stockpile payments per 109.09)	25% Lump Sum Item or 2.5% Contract Price	50% Lump Sum Item or 5.0% Contract Price
10% of Contract (Excluding previous mobilization payments and stockpile payments per 109.09)	25% Lump Sum Item or 2.5% Contract Price	75% Lump Sum Item or 7.5% Contract Price
50% of Contract (Including previous mobilization payments and stockpile payments per 109.09)	25% Lump Sum Item or 2.5% Contract Price	100% Lump Sum Item or 10.0% Contract Price
Last Partial Pay Estimate	Portion Exceeding 10%	Portion Exceeding 10%

If 50% or more of the total original contract amount is completed by the payment of Estimate #1, a payment of 75% of the price bid for Mobilization will be made on Estimate #1. The remainder of the price bid for Mobilization will be paid on the following estimate.

Subsection 722.06.E, (pg. 803), 12-19-22; **Interior Utility Services; Revise Subsection E:**

E. Telephone and Internet

Provide telephone service with voicemail and two incoming phone lines. Provide internet service with wifi and two data ports for wired connections.

Subsection 722.09, (pg. 805), 12-19-22; **Concrete Cylinder Storage; Revise 1st Paragraph:**

Provide a storage facility (shed/building) for temporary storage of concrete acceptance cylinders. The storage facility shall be of sufficient size and construction to protect the concrete cylinders from the elements and damage. Obtain the Engineer's approval of the storage facility location. Department personnel shall have access to the storage facility. Equip the storage facility with a concrete curing environment consisting of a box or water curing tank with a heating/circulating system of sufficient size to properly cure all acceptance cylinders before transferring for final storage and testing. Provide a temperature measuring device capable of recording the conditions inside the curing environment. The curing environment shall comply with AASHTO M 201, and proper curing of the cylinders shall be in accordance with AASHTO R 100. Temperature data for the curing environment shall be kept for the duration of the projects and made available to the Department upon request. The Department will not accept any concrete without the Engineers approval of the storage facility.

S T A T E **O F** **T E N N E S S E E**

(Rev. 12-15-21) January 1, 2021
(Rev. 12-19-22)
(Rev. 1-30-23)
(Rev. 12-27-23)
(Rev. 8-26-24)
(Rev. 12-26-24)

Supplemental Specifications – 900SS
of the
Standard Specifications for Road and Bridge Construction

January 1, 2021

Subsection 901.01, (pg. 900), 12-19-22; **Hydraulic Cement;** Revise List, 2nd, and 3rd Paragraphs:

Portland Cement.....AASHTO M 85
Blended Hydraulic Cement..... AASHTO M 240

The maximum allowable equivalent alkalis for Portland Cement is 0.60 % when used in roadways with aggregates meeting the requirements of **903.24**.

Use Type I, Type IL, Type IP, or Type IS cement unless otherwise specified. Do not mix different types or sources of cement.

Subsections Listed, (pg. varied), 12-19-22; **Hydraulic Cement 901.01;** Revise Following Subsections:

204.06.B, (pg. 156), **Revise Materials List:**

304.02, (pg. 230), **Revise Materials List:**

306.02, (pg. 238), **Revise Materials List:**

309.02, (pg. 252), **Revise Materials List:**

312.05, (pg. 266), **Revise 1st Paragraph first sentence:**

313.02, (pg. 270), **Revise Materials List:**

616.03, (pg. 635), **Revise Materials List:**

619.02, (pg. 650), **Revise Materials List:**

619.03, (pg. 651), **Revise Table 619.03-1:**

619.13, (pg. 657), **Revise 1st Paragraph first sentence:**

622.02, (pg. 664), **Revise Materials List:**

Subsection 903.01, (pg. 903), 12-26-24**; Fine Aggregate for Concrete;** Revise Table 903.01-2:

Table 903.01-2: Gradation Requirements for Fine Aggregate

Sieve Size	Total Percent Passing by Weight
3/8 inch	100
No. 4	95-100
No. 16	50-90
No. 50	5-35
No. 100	0-20
No. 200 (1)	0-3

(1) If the fine aggregate is manufactured from crushed stone and if material finer than the No. 200 sieve consists of the dust of fracture, essentially free from clay or shale, this limit may be increased to ~~10~~7%.

Subsection 903.03, (pg. 904-905), 12-19-22; **Coarse Aggregate for Concrete;** Revise 2nd,4th,5th,6th and 7th Paragraphs:

Coarse aggregate for hydraulic cement concrete to be used in the finished riding surfaces of roadways shall meet requirements of 903.24 unless otherwise specified. Coarse aggregate for bridge decks (except decks that will be overlaid with HFST or Asphalt Pavements during the same construction season) and overlays on interstates and four or more lane highways shall meet **903.24** unless otherwise specified.

Coarse aggregate in Portland cement concrete pavements for finished riding surfaces of travel lanes including mainline pavements and ramps shall consist of Size No. 467. Ensure that either the Size No. 4 or Size No. 67 fractions meet **903.24**.

Coarse aggregate in two-lift composite pavements shall consist of Size No. 467 in the lower lift, graded as specified in **903.22,** the coarse aggregate for the lower lift does not have to meet the requirements of **903.24**. Coarse aggregate in the upper lift shall be Size No. 57 or 67 graded as specified in **903.22** and shall meet **903.24** riding surface requirements.

The coarse aggregates for travel lanes and bridge decks shall be crushed and consist of stone, slag, gravel, quartzite, gneiss, or combination thereof. The absorption of plus 4 material shall not exceed 5% on any individual aggregate. Do not use uncrushed gravel, pea gravel, or any other uncrushed particles. Crushed gravel, if used, shall consist of siliceous washed particles after processing, of which at least 70% by count of the material retained on the No. 4 sieve contains a minimum of two fractured faces. One face shall be fractured for the approximate average diameter or thickness of the particle.

Subsection 903.03, (pg. 904), 12-26-24**; Coarse Aggregate for Concrete;** Revise 2nd Paragraph:

~~Coarse aggregate for hydraulic cement concrete to be used in the finished riding surfaces of roadways shall meet requirements of **903.24** unless otherwise specified.~~ Coarse aggregates for bridge decks, portland cement concrete pavements (including ramps), ~~(except decks that will be overlaid with HFST or Asphalt Pavements during the same construction season)~~ and overlays used for the finished riding surfaces ~~on interstates and four or more lane highways~~ shall meet requirements of **903.24**. ~~unless otherwise specified.~~

Subsection 903.06.C, (pg. 914), 8-26-24; **Combined Aggregate Grading;** Revise Table 903.06-4:

Table 903.06-4: Hot Plant Mix Leveling CourseMixture Design Range of Gradations

Sieve Size	Total Percent Passing, by Weight					
	Grading BM	**Grading BM2 (1)**	**Grading C**	**Grading CM**	**Grading CW**	**Grading CS**
1-1/4 inch	--	100	--	--	--	--
1 inch	100	--	--	--	--	--
3/4 inch	85-100	81-93	100	100	100	--
3/8 inch	59-79	57-73	70-90	75-100	75-100	100
No. 4	42-61	40-56	39-66	--	--	89-94
No. 8	29-47	28-43	23-47	35-57	43-67	53-77
No. 30	13-27	13-25	10-27	18-35	23-47	23-42
No. 50	7-20	9-19	8-15	--	--	--
No. 100	4-10	6-10	4-8	4-10	4-10	9-18
No. 200	0-6.5	2.5-6.5	2.5-6.5	2.5-6.5	2.5-6.5	6-13.5

(1) When using natural sand as the fine aggregate, limit it to a maximum amount of 20% by weight of the mineral aggregate.

Subsection 903.11.C.3, (pg. 920), 12-19-22; **Grading OGFC;** Remove 2nd Paragraph:

~~Recycled asphalt pavement (RAP) milled from Department or other State Highway Agency projects shall be assumed to contain 75% polish-resistant material.~~

Subsection 903.12.B, (pg. 921-922), 12-19-22; **Aggregate for Micro-Surface;** Revise 1st, 2nd Paragraphs, and Table 913.12-2:

The aggregate shall be crushed slag, crushed granite, or crushed stone (crushed stone as specified in **903.24**) meeting the gradation limits specified in Table 903.12-2 and the physical properties of ASTM D692, except the percent of fractured pieces shall be 100. The aggregate shall meet the quality requirements in **903.25**. The aggregate shall have a minimum sand equivalent, as determined in accordance with AASHTO T 176, of 65. Polish-resistant aggregates will not be required for leveling courses, provided they will be covered with riding surface mixtures. Provide a Type A laboratory as defined by **106.06** capable of verifying gradation at the location of stockpiled material.

If blending aggregates from more than one source, use automated proportioning and blending equipment which has individual bins for each aggregate source used to produce a uniform stockpile meeting the job mix formula gradation. Proportion and blending equipment shall be calibrated at the beginning of production. All aggregate sources shall be polish-resistant as specified in **903.24**.

Table 903.12-2: Gradation Limits for Aggregate for Micro-Surface Based on Wash Gradation

Sieve	Design Master Range (Total Percent Passing)	Mixture Control Tolerances
3/8 inch	100	
No. 4	70-98	±5.0
No. 8	45-70	±5.0
No. 16	28-50	±5.0
No. 30	19-34	±5.0
No. 50	12-25	±4.0
No. 100	7-18	±3.0
No. 200	4-15	±2.0

Subsection 903.24, (pg. 927), 12-26-24**; Aggregates for Riding Surfaces (Polish-Resistant Aggregates);** Revise Table 903.24-1:

Table 903.24-1: Quality Requirements for Type I, II, III, and IV Aggregate

Aggregate Property	Test Method	Type I (all roads)	Type II (all roads)	Type III (15,000 ADT max, excluding Interstates)	Type IV (5,000 ADT max)
Silica Dioxide Content, % min	ASTM C25	40%	30%	20%	10%
Calcium Carbonate Content, % max		32%	--	--	--
Acid Insoluble Residue, % min	ASTM D3042	50%	35%	25%	--
British Pendulum Number,(1)(2) min	AASHTO T 278 AASHTO T 279	30	30	25	22

(1) After 9 hours of accelerated polishing using the British Wheel in accordance with AASHTO T 279

(2) British Pendulum Number only required for limestone aggregates.

Subsection 904.03 (pg. 931-934), 12-15-21; **Emulsified Asphalt;** Revise Table 904.03-1(c):

Table 904.03-1(c): Test Requirements for Emulsified Asphalt

Practices	AASHTO Test Method	CRS-2P	RS-2	RS-1	CRS-1
Saybolt-Furol Viscosity @ 77 °F, seconds	T59	n/a	n/a	20-100	n/a
Saybolt-Furol Viscosity @ 122 °F, seconds	T59	100-400	75-400	n/a	20-100
Storage Stability Test, 24- h, %	T59	1 Max	1 Max	1 Max	1 Max
5-day Settlement, %	T59	n/a	n/a	n/a	n/a
Particle Charge	T59	Positive	n/a	n/a	Positive
Sieve Test, %	T59	0.1 Max	0.1 Max	0.1 Max	0.1 Max

Practices	AASHTO Test Method	CRS-2P	RS-2	RS-1	CRS-1
Residue by	T59	Evaporation	Distillation	Distillation	Distillation
Residue, %	T59	65 Min	63 Min	55 Min	60 Min
Demulsibility, %	T59	40 Min	60 Min	60 Min	40 Min
Distillate, %	T59	n/a	n/a	n/a	n/a
Oil Test, %	T59	n/a	n/a	n/a	3.0 Max
Stone Coating	T59	n/a	n/a	n/a	n/a
Float Test, seconds	T50	n/a	n/a	n/a	n/a
Penetration	T49	75-175	100-200	100-200	100-250
Elastic Recovery, % (1)	T301	50 Min	n/a	n/a	n/a
Ductility @ 77 °F, cm	T51	40 Min	40 Min	40 Min	40 Min
Ductility @ 40 °F, cm	T51	n/a	n/a	n/a	n/a
R&B Softening Point, °F	T53	125 Min	n/a	n/a	n/a
Original G*/sind @ 82 °C	T315	n/a	n/a	n/a	n/a

(1) Straight-sided mold, 20-cm elongation, 5min hold, 25 °C

Subsection 908.04.A & C, (pg. 947-949), 12-26-24**; High Strength Bolts, Specifications;** Revise A No. 1 and C No. 1 a & b, and C No. 3.a:

A.1 Bolts. ASTM F3125, Grade A325 and Grade A490 – High Strength Bolts for Structural Joints.

C.1.a Perform proof load tests, in accordance with ASTM F606 Method 1, at the minimum frequency of testing specified in ASTM F3125 Grade A325 paragraph 9.2.4.

C.1.b Perform wedge tests on full size bolts, in accordance with ASTM F606 paragraph 3.5, at the minimum frequency of testing specified in ASTM F3125 Grade A325 paragraph 9.2.4.

C.3.a Except as modified herein, perform the rotational-capacity test in accordance with the requirements of ASTM F3121~~1~~5 Grade A325.

Subsection 908.09, (pg. 955), 12-27-23; **Bronze Bearing Plates, Plain;** Revise Subsection**:**

Provide plates conforming to ASTM B22, Alloy UNS No. C90500, C91100, or C86300, or ASTM B100, Alloy UNS No. C51000.

Subsection 914.01, (pg. 977), 12-19-22; **Non-Reinforced Concrete Pipe;** Revise 2nd Paragraph:

Manufacture all non-reinforced concrete pipe to meet the Department's procedure for the Manufacture and Acceptance of Precast Concrete Products.

Subsection 916.06, (pg. 988), 12-15-21; **Reflective Sheeting;** Revise Subsection:

Provide reflective sheeting from the Department's QPL conforming to AASHTO M 268 and the supplementary requirements for fungus resistance of AASHTO M 268. The sheeting material shall have a precoated adhesive backing or a heat and pressure activated adhesive backing protected by a removable liner.

For all signs with a SILVER-WHITE and ORANGE background when used on temporary barricades and channelizing drums, provide reflective sheeting that meets or exceeds AASHTO M 268, Type B.

For all permanent panel signs with a SILVER-WHITE, YELLOW, RED, GREEN, BROWN, or BLUE background, provide reflective sheeting that meets or exceeds AASHTO M 268, Type D.

For overhead permanent signs attached to sign structures which overhang travel lanes and are not illuminated with sign lighting, provide reflective sheeting that meets AASHTO M 268, Type D.

For all other sign types, provide reflective sheeting that meets or exceeds AASHTO M 268, Type B.

For FLOURESCENT ORANGE background, provide reflective sheeting that meets or exceeds AASHTO M 268, Type B.

Subsection 916.06, (pg. 988), 12-27-23; **Retroreflective Sheeting;** Revise 2nd and Add 3rd Paragraph:

For all signs with a SILVER-WHITE and ORANGE background when used on temporary barricades, provide retroreflective sheeting that meets or exceeds AASHTO M 268, Type B.

For all sheeting with a SILVER-WHITE and FLUORESCENT ORANGE background when used on channelizing drums, provide retroreflective sheeting that meets or exceeds AASHTO M 268, Type B. The SILVER-WHITE material shall be of the same manufacturer as the FLUORESCENT ORANGE material.

Subsection 916.07, (pg. 988,989), 12-15-21; **Legends, Borders, and Accessories;** Revise Subsection:

Provide letters, numerals, symbols, borders, and route markers conforming to the MUTCD.

A. Type "A" Class I (Demountable)

Provide silver-white letters, numerals, symbols, borders, and route markers of a pre-coated pressure sensitive or a tack-free heat-activated adhesive reflective sheeting permanently adhered to the sign panel.

For all permanent panel signs, provide reflective sheeting that meets AASHTO M 268, Type D.

Mechanically apply the reflective sheeting to the properly prepared sign panel with the equipment and in a manner prescribed by the sheeting manufacturer. Letters, numerals, symbols, borders, and route markers shall be 0.032-inch-thick aluminum sheet of 3003 H14 Alloy or approved composite material. Properly degrease and etch aluminum, or treat with a light, tight, amorphous chromate type coating.

Supply each letter, numeral, symbol, and route marker with mounting holes, and secure to the sign surface with corrosion-resistant screws, bolts, or rivets.

B. Type "A" Class 2 Cut-Out (Direct Applied Reflective Sheeting Copy)

Provide silver-white cut-out letters, numerals, symbols, borders, and route markers of a pre-coated pressure sensitive or a tack-free heat-activated adhesive reflective sheeting.

For all permanent panel signs, provide reflective sheeting that meets AASHTO M 268, Type D.

For all other sign types, provide reflective sheeting that meets or exceeds AASHTO M 268, Type B.

Subsections Listed, (pg. varies), 12-19-22; **Replace Reflective with Retroreflective 916.06;** Revise Following Subsections:

916.05.H, (pg. 986), **Revise 2nd Paragraph:**

916.05.H.3, (pg. 986), **Revise 1st Paragraph:**

916.05.I, .1, .2, (pg. 987), **Revise Heading, 1st, 2nd Paragraphs:**

916.06, (pg. 988), **Revise Heading, 1st, 2nd, 3rd, 4th, 5th, 6th Paragraphs:**

916.07.A, (pg. 989), **Revise 1st and 2nd Paragraphs:**

916.07.B, (pg. 989), **Revise 1st, 2nd, 3rd Paragraphs:**

916.08, (pg. 989-999), **Revise 1st, 2nd, 3rd, 4th Paragraphs:**

919.04, (pg. 1012), **Revise Heading, 1st Paragraph, List:**

919.05.A, .B, (pg. 1012-1013), **Revise Heading, 1st Paragraphs:**

712.02, (pg. 732), **Revise Materials List:**

712.02.B, .G, (pg. 732-733), **Revise 1st Paragraphs:**

712.04, (pg. 734), **Revise 2nd Paragraph:**

712.04.H.2.a.(2), .2.e, (pg. 740-741), **Revise 1st Paragraphs:**

712.06.1, .2, (pg. 743), **Revise 1st Paragraphs:**

713.04.A, (pg. 749), **Revise 1st Paragraph:**

713.04.F, (pg. 753), **Revise 3rd, 4th, 5th Paragraphs:**

713.06.3, (pg. 754), **Revise 1st Paragraph:**

716.01, (pg. 784), **Revise 1st Paragraph:**

716.02, (pg. 784), **Revise Materials List:**

716.03.B.2.b, (pg. 789), **Revise 8th Paragraph:**

716.03.B.3, .4, (pg. 790), **Revise 1st Paragraph:**

716.04, (pg. 790-791), **Revise Heading, 7th Paragraph:**

716.05, (pg. 791-792), **Revise Heading, 1st Paragraph:**

716.06, (pg. 792), **Revise 2nd Paragraph:**

716.07.A, (pg. 795), **Revise 11th Paragraph:**

716.08, (pg. 797), **Revise Last Paragraph:**

716.08.G, (pg. 797), **Revise Heading:**

910.02.C.2.e, (pg. 969), **Revise Heading:**

Revise Index (pg. 1053 & 1056), **Revise:** Reflective Pavement Markers, Reflective Sheeting, & Snowplowable Reflective Pavement Markers.

Subsection 918.01.B & D, (pg. 1003, 1004), 1-30-23; **Grass Seed, Seed Groups;**
Revise Tables 918.01-1, 2, 3, & 6:

Table 918.01-1: Group A (February 1-July 1)

Kind of Seed	Quantity, Percent by Weight
Kentucky 31 Fescue	80
White Clover	15
Annual Rye Grass	5

Table 918.01-2: Group B (June 1-August 15)

Kind of Seed	Quantity, Percent by Weight
Kentucky 31 Fescue	75
White Clover	15
German Millet	10

Table 918.01-3: Group B1 (April 15 - August 15)

Kind of Seed	Quantity, Percent by Weight
Bermudagrass (hulled)	70
White Clover	30

Table 918.01-6: Temporary Seeding

Seed Group (Season)	Kind of Seed	Percent by Weight
Group D (January 1 – May 1)	Annual Rye Grass	33-1/3%
	White Clover	33-1/3%
	Spring Oats	33-1/3%
Group E (May 1 – July 15)	Sorghum-Sudan Crosses (1)	100%
	or	
	German Millet (2)	100%
Group F July 15 – January 1	Cereal Rye	66-2/3%
	Annual Rye Grass	33-1/3%

(1) Dekalb Sudan SX11, Lindsey 77F, TN Farmer's Co-op GHS-1 or GHS-2A.

(2) German Millet, GaHi-1

Subsection 918.01.D, (pg. 1004), 12-26-24**; Temporary Seed;** Revise Table 918.01-6:

Table 918.01-6: Temporary Seeding

Seed Group (Season)	Kind of Seed	Percent by Weight
Group D (January 1 – May 1)	Annual Rye Grass	33-1/3%
	White Clover	33-1/3%
	Spring Oats	33-1/3%
Group E (May 1 – July 15)	Sorghum-Sudan Crosses (1)	100%
	or	
	German Millet (2)	100%
Group F July 15 – January 1	Cereal Rye	66-2/3%
	Annual Rye Grass	33-1/3%

(1) Dekalb Sudan SX11, Lindsey 77F~~, TN Farmer's Co-op GHS-1 or GHS-2A.~~

(2) German Millet, GaHi-1

Subsection 921.09, (pg. 1022), 12-19-22; **Grout; Revise Subsection:**

Submit grout mix designs to the Department's Materials and Tests. Grout designs shall use hydraulic cement meeting the requirements of **901.01** or an appropriate alternative from the Department's Qualified Products List. Use sand conforming to the requirements of **903.02**. Use water that has been approved by the Engineer.

When non-shrinking or non-shrinking fast-setting grout is specified, either formulate it by incorporating an admixture, or use a pre-mixed grout. Mix and use the grout in accordance with the manufacturer's recommendations. Grouts will be reviewed as follows:

A. Non-Structural Grout

Grout specified without a strength requirement will be non-structural and shall have its design submitted per Departmental procedures. Mix grout in small quantities as needed, and do not retemper or use grout after it has begun to set. Unless otherwise specified or directed, provide grout consisting of one part Portland cement and two parts sand by volume, mixed with sufficient water to form a grout of proper consistency.

B. Structural Grout

Grout specified with a strength requirement will be structural grout and shall have its design submitted per Departmental procedures.

S T A T E **O F** **T E N N E S S E E**

(Rev. 2-17-15) January 1, 2021

SPECIAL PROVISION

REGARDING

UNBALANCED BIDS

The Department will review all unit prices submitted by the apparently lowest responsible bidder and will decide whether any of the unit prices are excessively above or below a reasonable cost analysis value determined by the Engineer.

In the event any unit prices are determined to be unbalanced and contrary to the interest of the Department, the right is reserved to reject such bid at the discretion of the Department or to award the Contract and limit progress payments on units of work performed on any excessively priced items to costs that are satisfactorily documented by the Contractor plus 20 percent, until 85 percent of the Contract has been completed. Upon completion of 85 percent of the Contract, the Contractor will be reimbursed in accordance with **Subsection 109.08** of the Standard Specifications for the accepted quantities of work performed on the excessively priced items.

S T A T E **OF** **T E N N E S S E E**
Rev: October 10, 2016 January 1, 2021

SPECIAL PROVISION

REGARDING

EMPLOYING AND CONTRACTING WITH ILLEGAL IMMIGRANTS

The State shall endeavor to do business only with those contractors and subcontractors that are in compliance with the Federal Immigration and Nationality Act. This policy shall apply to all State Contractors including subcontractors. This policy statement is issued to establish implementation guidance to procuring state agencies and contractors reflecting the requirements of *Tennessee Code Annotated* §12-3-309 regarding the employment of illegal immigrants in the performance of state contracts.

1. The Contractor hereby attests, certifies, warrants, and assures that the Contractor shall not knowingly utilize the services of an illegal immigrant in the performance of this Contract and shall not knowingly utilize the services of any subcontractor who will utilize the services of an illegal immigrant in the performance of this Contract. The Contractor shall reaffirm this attestation, in writing, by submitting to the State a completed and signed copy of the "Attestation form" provided by the Department, semi-annually during the period of this Contract.

2. Prior to the use of any subcontractor in the performance of this Contract, and semi-annually thereafter, during the period of this Contract, the Contractor shall obtain and retain a current, written attestation that the subcontractor shall not knowingly utilize the services of an illegal immigrant to perform work relative to this Contract and shall not knowingly utilize the services of any subcontractor who will utilize the services of an illegal immigrant to perform work relative to this Contract.

3. The Contractor shall maintain records for its employees used in the performance of this Contract. Said records shall include a completed federal Department of Homeland Security Form I-9, *Employment Eligibility Verification*, for each employee and shall be subject to review and random inspection at any reasonable time upon reasonable notice by the State.

The Contractor understands and agrees that failure to comply with this section will be subject to the sanctions of *Tennessee Code Annotated* § 12-3-309 for acts or omissions occurring after January 1, 2007. This law requires the Chief Procurement Officer, Department of General Services, to prohibit a contractor from contracting with, or submitting an offer, proposal, or bid to contract with the State of Tennessee to supply goods or services for a period of one year after a

contractor is discovered to have knowingly used the services of illegal immigrants during the performance of this contract.

For the Purposes of this policy, “illegal immigrant” shall be defined as a non-citizen who has entered the United State of America without federal government permission or stayed in this country beyond the period allowed by a federal government-issued visa authorizing the non-citizen to enter the country for specific purposes and a particular time period.

S T A T E **O F** **T E N N E S S E E**

(Rev. 12-15-20) January 1, 2021

SPECIAL PROVISION

REGARDING

TENNESSEE DEPARTMENT OF TRANSPORTATION STANDARD

SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION

Description

Any and all references concerning the January 1, 2015 Standard Specifications for Road and Bridge Construction shall be interpreted as the January 1, 2021 Standard Specifications for Road and Bridge Construction.

S T A T E **O F** **T E N N E S S E E**

September 10, 2020 January 1, 2021

SPECIAL PROVISION

REGARDING

PROHIBITION ON CERTAIN TELECOMMUNICATION AND VIDEO

SURVEILLANCE SERVICES OR EQUIPMENT

Installation of telecommunication and video surveillance equipment, services or systems shall contain no components from providers as listed in Title 2 Code of Federal Regulations (CFR) Part 200.216.

The prohibition on certain telecommunication and video surveillance services or equipment regulation in Title 2 CFR 200.216 shall apply to this contract. Take all necessary and reasonable steps in accordance with Title 2 CFR 200.216 to ensure that no prohibited telecommunication and video surveillance services or equipment are included in any of the work in this contract. As defined in Title 2 CFR 200.471, the regulation provides clarity that the telecommunications and video surveillance costs associated with Title 2 CFR 200.216 are unallowable for services and equipment from the providers.

It is prohibited from installing equipment, services, or systems that use covered telecommunications equipment or services from providers described in section 889 of the National Defense Authorization Act for Fiscal Year 2019 (NDAA 2019).

As described in section 889 of the NDAA 2019, “covered telecommunications equipment or services” means:

- Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities);
- Video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities);
- Telecommunications or video surveillance services provided by such entities or using such equipment; or
- Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country. The term “covered foreign country” means the People’s Republic of China.

Any prohibited equipment installed must be removed and replaced at the contactor’s expense with acceptable equipment.

S T A T E **O F** **T E N N E S S E E**

(Rev. 9-7-22) January 1, 2021

CERTIFICATION REGARDING

DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

PRIMARY AND LOWER TIER COVERED TRANSACTIONS

The prospective Primary and/or Lower Tier participant certifies, by signing and submitting this proposal, to the best of its knowledge and belief, that it and its principals:

Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency.

Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in the preceding paragraph of this certification; and

Have not within a three- year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal; and

Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

Where the prospective Primary and/or Lower Tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

(Exceptions to the above are to be submitted on a separate sheet with the bid proposal)

For any exception noted, indicate to whom it applies, initiating agency, and dates of action. Providing false information may result in criminal prosecution or administrative sanctions.

S T A T E **O F** **T E N N E S S E E**

(Rev. 5-1-95) January 1, 2021

SPECIAL PROVISION

REGARDING

LABOR (STATE PROJECTS ONLY)

The contractor will be required to comply with the provisions of Title 12, Chapter 4, Part 4, Tennessee Code Annotated, relative to payment of prevailing wages and also the following rules and regulations as established by the Tennessee Department of Labor:

(1) Classify all laborers and mechanics conformably with schedule of classification in the contract.

(2) Apprentices may be employed only under a bona fide apprenticeship program, registered with the Bureau of Apprenticeship, U.S. Department of Labor.

(3) Wages rates must be posted in a prominent place on the site of construction and must be made available to all mechanics and laborers employed on the project at all times.

(4) Pay all laborers and mechanics unconditionally and not less often than once each week the full wages earned.

(5) Pay hourly rates which are not less than those listed for the class of labor being employed.

(6) Pay overtime compensation as required by any applicable federal or state laws, rules or regulations.

(7) Make no deductions from wages other than those authorized by law.

(8) The contractor shall submit each week in which any contract work is performed a certified copy of all payrolls to the contracting agency. The address and social security number of each employee shall be shown the first time the employee appears on a payroll, and on any subsequent payroll when the employee's address changes.

The certifications will affirm that the payrolls are correct and complete, that the wage rates contained therein are not less than those determined by the Commissioner of Labor, and that the classifications set forth for each laborer and mechanic conform with the work performed. The contractor will make his employment records available for inspection by representatives of the contracting agency and the Department of Labor, and will permit such representatives to interview employees during working hours on a project.

Failure to submit payrolls within one week or to resubmit corrected payrolls within one week after notification may be reason to withhold progress payments.

The rates of pay for each classification of labor employees on this project as set out by the Labor Department of the State of Tennessee and made a part of this proposal contract, shall remain unchanged for the life of this contract.

Watchman and clerical employees are not to be covered by the Wage Scale, therefore, may be paid at or above the National Wage and Hour Law Rates.

S T A T E **O F** **T E N N E S S E E**

(Rev. 9-7-22) January 1, 2021

SPECIAL PROVISION

REGARDING

NON-DISCRIMINATION IN EMPLOYMENT

Bidders are cautioned as follows:

By signing this bid, the bidder will be deemed to have signed and agreed that all persons, firms or corporations supplying goods, material, equipment or service of any kind to the State of Tennessee will not discriminate against any employee or applicant for employment on the basis of race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability and further, that while under contract with the State will show proof upon request that all employment practices including, but not limited to, promotion, rates of pay, transfers, recruitment, recruitment advertising, terminations, layoffs and training and apprenticeship programs are not discriminatory in nature.

Each contractor shall be required to post in conspicuous places, available to all employees and applicants for employment, notices of non-discrimination.

S T A T E O F T E N N E S S E E

TENNESSEE DEPARTMENT OF TRANSPORTATION

2025 MINIMUM WAGE SCALES FOR STATE FUNDED CONSTRUCTION

January 1, 2025 **Tenn. DOL Decision No. T-40293**

CLASSIFICATION (ENGLISH)	CLASSIFICATION (SPANISH)	Basic Hourly Rates	Craft No.
Blaster	**Proveedor do Explosivos**	28.16	**1**
Bricklayer	**Ladrillero**	20.30	**2**
Carpenter / Leadsperson	**Carpintero o Lider**	25.70	**3**
Class "A" Operators	**Operador Clase A**	29.81	**4**
Class "B" Operators	**Operador Clase B**	27.04	**5**
Class "C" Operators	**Operador Clase C**	29.07	**6**
Class "D" Operators	**Operador Clase D**	27.71	**7**
Concrete Finisher	**Terminador de Cemento**	25.58	**8**
Drill Operator (Caisson)	**Operador de Perfordora**	43.02	**9**
Electrician	**Electricista**	37.70	**10**
Farm Tractor Operator (Power Broom)	**Operador de Tractor de Rancho**	19.94	**11**
Ironworkers (Reinforcing)	**Herrero**	27.79	**12**
Ironworkers (Structural)	**Herrero de Estructura**	24.05	**13**
Large Crane Operator	**Operador de la Grua**	32.51	**14**
Mechanic (Class I) Heavy Duty	**Mecanico Clase 1**	32.38	**15**
Mechanic (Class II) Light Duty	**Mecanico Clase 2**	30.38	**16**
Painter / Sandblaster	**Pintor o Lajador**	37.54	**17**
Skilled Laborer	**Obrero Diestro**	25.38	**18**
Survey Instrument Operator	**Operador de Agrimensor**	35.87	**19**
Sweeping Machine (Vacuum) Operator	**Operador de Barredora**	25.99	**20**
Truck Driver (2 axles)	**Camionero (2 ejes)**	26.63	**21**
Truck Driver (3/4 axles)	**Camionero (3 o 4 ejes)**	25.38	**22**
Truck Driver (5 or more axles)	**Camionero (5 o más ejes)**	29.74	**23**
Unskilled Laborer	**Obrero no Diestro**	22.46	**24**
Worksite Traffic Coordinator	**Coordinar de Trafico en el Lugar de Trabajo**	28.70	**25**

CLASSIFICATION	CRAFT NO.
SKILLED LABORER:	**18**

Air Tool Operator, Asphalt Raker, Chain Saw Operator, Concrete Mixer Operator (less than 1 yard), Concrete Rubber, Edger, Fence Erector, Form Setter (Steel Road), Guardrail Erector, Mechanic's Helper (Tire Changer or Oiler), Mortar Mixer, Nozzleman or Gun Operator (Gunite), *Pipelayer, Sign Erector

CLASS "A" OPERATORS:	**04**

Backhoe/Hydraulic Excavator (3/4 yard and over), Crane (less than 20 tons), End Loader (3 yards and over), Motor Patrol (Finish

CLASS "B" OPERATORS:	**05**

Backhoe/Hydraulic Excavator (less than 3/4 yard), Bull Dozer or Push Dozer, End Loader (less than 3 yards), Motor Patrol (Rough), Tractor (Crawler/Utility), Scraper, Shovel, Trenching Machine

CLASS "C" OPERATORS:	**06**

Asphalt Paver, Concrete Finishing Machine, Concrete Paver, Scale, Spreader (Self-Propelled), Concrete Grinder, Asphalt Milling Machine, Boring Machine (Horizontal)

CLASS "D" OPERATORS:	**07**

Bobcat, Central Mixing Plant, Concrete Pump, Concrete Saw, Curb Machine (Automatic or Manual), Dozer or Loader (Stockpile), Drill (Piling), Mulcher or Seeder, Rock Drill (Truck Mounted), Roller (Asphalt), Roller (Compaction Self-Propelled), Soil Stabilization Machine, Tractor (Boom & Hoist), Bituminous Distributor Machine, Pump, Track Drill, Striping Machine,

LARGE CRANE OPERATOR:	**14**

Means one who operates boom-type equipment <u>equal to or greater than 20 tons</u> to hoist and move materials, raise and lower heavy weights and perform other related operations; may oil, grease or otherwise service and make necessary adjustments to equipment as needed; and may perform other related duties. (Note: The equipment is used for such work as pouring concrete and setting steel. This work is subject to strict inspection and must conform closely to specifications. The equipment may also be used for other miscellaneous tasks for which crane or stick-type equipment is required which may include hoist operations and pile driving operations.)

***Skilled Laborer - Pipelayer Classification:**

Means one who lays, connects, inspects and tests water lines, force mains, gas lines, sanitary or storm sewers and drains, underground telephone and electric ducts or other utilities manufactured from clay, concrete, steel, plastic, cast iron pipe or other similar materials; may smooth bottom of trench to proper elevation by scooping with a shovel; receives pipe lowered from top of trench; inserts spigot end of pipe into bell end of last laid pipe; adjusts pipe to line and grade; caulks and seals joint with cement or other sealing compound; may connect threaded or flanged joint pipe; may assemble and place corrugated metal or plastic pipe; and may perform other related duties.

Additional Information :

Prevailing Wage Act (T.C.A., §§ 12-4-401 through 12-4-415). Effective January 1, 2014.
https://www.tn.gov/content/dam/tn/workforce/documents/Contact/PrevailingWageAct2014.pdf

For the Classification of Covered Workers (Rule 0800-03-02-.02), see the Tennessee Department of Labor and Workforce Development Prevailing Wage Commission Rules : https://www.tn.gov/content/dam/tn/workforce/documents/pwc/Prevailing_Wage_Rules.pdf

Wage Rates : https://www.tn.gov/workforce/employees/labor-laws/labor-laws-redirect/wages-breaks/prevailing-wage.html

Poster Page : https://www.tn.gov/workforce/general-resources/major-publications0/major-publications-redirect/posters-redirect/required-posters.html

Note: Adobe Acrobat Reader is required to download & print. If you do not have this software a link is provided at the bottom of the Poster Page for a free download.

Tenn. Dept. of Labor & Workforce Development (Labor Standards Division) : (844) 224-5818

PROPOSAL

TO THE TENNESSEE DEPARTMENT OF TRANSPORTATION

NASHVILLE, TENNESSEE

By submitting this Proposal, the bidder represents that it has carefully examined the site of the work described herein, has become familiar with local conditions and the character and extent of the work; has carefully examined the Plans, the *Standard Specifications for Road and Bridge Construction* (January 1, 2021) adopted by the State of Tennessee, Department of Transportation, with subsequent revisions which are acknowledged to be a part of this Proposal, the Special Provisions, the Proposal Form, the Form of Contract, and the Form of Contract Payment and Performance Bond (or the Form of Contract Performance Irrevocable Letter of Credit, for mowing contracts); and thoroughly understands their stipulations, requirements, and provisions.

The bidder has determined the quality and quantity of materials required; has investigated the location and determined the sources of supply of the materials required; has investigated labor conditions; and, has arranged for the continuous prosecution of the work herein described.

By submitting this Proposal, the bidder agrees to provide all necessary equipment, tools, labor, incidentals, and other means of construction, to do all the work, and furnish all the materials of the specified requirements which are necessary to complete the work in accordance with the Plans, and the Specifications, and agrees to accept as payment in full therefor the unit prices for the various items described in the Specifications that are set forth in this Proposal. The bidder understands that the quantities of work specified are approximate only and are subject to increase or decrease and that any such increase or decrease will not affect the unit prices set forth in this Proposal. Compensation for "extra work" which may be required by the Department in connection with the construction and completion of the work but which was not reflected in the Plans and Specifications at the time of bidding, will be made in the following manner: work for which there is a unit price set forth in this Proposal will be compensated at that unit price; work for which there is no unit price set forth in this Proposal will be compensated in accordance with the applicable Standard Specifications.

By submitting this Proposal, the parties hereto, in the performance of this Contract, shall not act as employees, partners, joint ventures, or associates of one another. It is expressly acknowledged by the parties hereto that such parties are independent contracting entities and that nothing in this Contract shall be construed to create an employer/employee relationship or to allow either to exercise control or direction over the manner or method by which the other transacts its business affairs or provides its usual services. The employees or agents of one party shall not be deemed or construed to be the employees or agents of the other party for any purpose whatsoever.

By submitting this Proposal, the bidder, if awarded the contract, agrees that it will be responsible for compliance with the Patient Protection and Affordable Care Act ("PPACA") with respect to itself and its employees, including any obligation to report health insurance coverage, provide health insurance coverage, or pay any financial assessment, tax, or penalty for not providing health insurance. The Contractor shall indemnify the State and hold it harmless for any costs to the State arising from Contractor's failure to fulfill its PPACA responsibilities for itself or its employees.

By submitting this Proposal, the bidder, if awarded the contract, shall be registered with the Department of Revenue for the collection of Tennessee sales and use tax or provide confirmation from the Department of Revenue that the bidder is not required to register for the Tennessee sales and use tax. This registration requirement is a material requirement of this Contract.

By submitting this Proposal, the bidder hereby agrees to be bound by the award of the Contract and, if awarded the Contract on this Proposal, to execute the required Contract and the required Contract Payment and Performance Bond (or Contract Payment and Performance Irrevocable Letter of Credit, for mowing contracts only) within ten days after receipt of notice of the award. The bidder must execute the required documents by affixing an electronic signature to each document through the electronic signature process provided by the Department. The bidder submits herewith the required Proposal guaranty (or Proposal Irrevocable Letter of Credit, for mowing contracts only) in an amount of not less than five per cent of the total amount of the Proposal offered and agrees and consents that the Proposal guaranty (or Proposal Irrevocable Letter of Credit) shall immediately be at the disposal of the Department, not as a penalty, but as an agreed liquidated damage if the required Contract and Contract Payment and Performance Bond (or Irrevocable Letter of Credit) are not electronically executed within ten days from receipt of the notice of award.

By submitting this Proposal, the bidder, if awarded the contract, hereby agrees to register with the plans collaboration software designated by the Department prior to the Preconstruction Meeting. The bidder further agrees that correspondence related to project or plans revisions and any request for information (RFI) will be communicated through this tool once work begins, excluding no plans contracts.

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to § 12-12-106. This list is generated to identify entities ineligible to contract with the State of Tennessee or any political subdivision of the State per the Iran Divestment Act, T.C.A. §§ 12-12-101 – 113, and the current list may be found at the Tennessee Department of General Services, Central Procurement Office, website under the Public Information Library webpage at the following link:
http://tn.gov/assets/entities/generalservices/cpo/attachments/List_of_persons_pursuant_to_Tenn._Code_Ann._12-12-106._Iran_Divestment_Act-July.pdf

NOTE: This Proposal is electronically signed with submittal of the electronic bid. See Project Bids, Miscellaneous Data, Internet Bidding Certification, Item A.

PROPOSAL CERTIFICATION

The bidder, being first duly sworn, certifies that it has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this Proposal or Contract. This is an official document that is required or authorized by law to be made under oath and is presented in an official proceeding. A person who makes a false statement in this certification is subject to the penalties of perjury.

The bidder further certifies that it is not under the control of any person, firm, partnership, or corporation, which has or exercises any control of any other person, firm, partnership, or corporation, which is submitting a bid on this Contract.

NOTE: This Proposal Certification is digitally signed with submittal of the electronic bid. See Project Bids, Miscellaneous Data, Internet Bidding Certification, Item B.

STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

PROPOSAL GUARANTY BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the Principal and Surety are held and firmly bound unto the Department of Transportation in the full and just sum of five (5) percent of the total amount bid by the Principal for the project stated, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

NOW, THEREFORE, the condition of this obligation is: the Principal shall not withdraw its bid within sixty (60) days after the opening of the bids, or within such other time period as may be provided in the Proposal, and if the Department of Transportation shall award a Contract to the Principal, the Principal shall, within ten (10) days after written notice of the award is received by him, fully execute a Contract on the basis of the terms, conditions and unit prices set forth in his Proposal or bid and provide a bond (or Irrevocable Letter of Credit, for mowing contracts) with good and sufficient surety, as required for the faithful performance of the Contract and for the protection of all persons supplying labor, material, and equipment for the prosecution of the work. In the event the Principal withdraws its bid after bids are opened, or after award of the Contract has been made fails to electronically execute such the Contract and/or such additional documents as may be required and to provide the required bond (or Irrevocable Letter of Credit, for mowing contracts) within the time period specified above, then the amount of the Proposal Bond shall be immediately paid to the Department of Transportation, not as a penalty, but as agreed upon liquidated damages.

IN WITNESS WHEREOF, the Principal has caused these presents to be signed by a duly authorized official and the Surety has caused these presents to be duly signed and sealed by an authorized agent or attorney-in-fact.

NOTE: This Proposal Guaranty Bond is digitally signed with submittal of the electronic bid. See Project Bids, Bid Bond.

STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

PROPOSAL GUARANTEE

CONTRACT NO. _____

Bidder: _____
Print Name of Bidder

KNOW ALL MEN BY THESE PRESENTS, that the above-named Bidder has tendered the attached cashier's or certified check in an amount equal to five (5) percent of the total amount it bid for the project stated above, payable to the State of Tennessee, Department of Transportation, to be held pending the fulfillment of the following obligation conditions.

NOW, THEREFORE, the condition of this obligation is: the Bidder shall not withdraw its bid within sixty (60) days after the opening of the bids, or within such other time period as may be provided in the Proposal, and if the Department of Transportation shall award a Contract to the Bidder, the Bidder shall, within ten (10) days after it receives written notice of the award, fully execute a Contract on the basis of the terms, conditions and unit prices set forth in its Proposal or bid and provide a bond with good and sufficient surety (or Contract Performance Irrevocable Letter of Credit, for mowing contracts), as required for the faithful performance of the Contract and for the protection of all persons supplying labor, material, and equipment for the prosecution of the work. In the event the Bidder withdraws its bid after bids are opened, or after award of the Contract has been made fails to electronically execute such the Contract and/or such additional documents as may be required and to provide the required bond (or Irrevocable Letter of Credit for mowing contracts) within the time period specified above, then the Department of Transportation shall cash the attached check and retain the funds, not as a penalty, but as agreed upon liquidated damages.

IN WITNESS WHEREOF, the Bidder has caused these presents to be signed by a duly authorized official.

By:_____ Date:_____

_____
Print Name and Title

NOTE: If a check is offered as the bid guaranty, the check and the executed Proposal Guarantee must be received by the Department prior to the time of the letting.

TENNESSEE DEPARTMENT OF TRANSPORTATION

CONTRACT NO. _____

This agreement is made and executed between the State of Tennessee, Department of Transportation, hereinafter referred to as the "Department" and

_____

hereinafter referred to as the "Contractor."

WITNESSETH

The Department did advertise for, receive and accept a bid from the Contractor for work on the above identified contract.

In consideration of the agreements herein contained, to be performed by the parties hereto and of the payments hereafter agreed to be made, it is mutually agreed by both parties that:

1. The contract between the parties consists of the following "Contract Documents" all of which constitute one instrument:
   (a) Instructions to Bidders
   (b) Proposal Contract Book (Posted to TDOT's Bid Express webpage)
   (c) Addenda (Posted to TDOT's Bid Express webpage)
   (d) All additional project specific information provided (Posted to TDOT's Bid Express webpage)
   (e) Contract Payment & Performance Bond (or Irrevocable Letter of Credit, for mowing contracts)
   (f) Items of work and unit prices submitted at the time of bid
   (g) the *Tennessee Department of Transportation Standard Specifications for Road and Bridge Construction*, January 1, 2021 Edition (hereinafter referred to as the "2021 Standard Specifications")
   (h) Supplemental Specifications
   (i) Special Provisions
   (j) Contract Plans, revisions and additions
   (k) Tennessee Department of Transportation Standard Drawings
   (l) Starting Notice
   (m) Supplemental Agreements / Construction Changes

   All of the provisions contained in the listed Contract Documents are incorporated herein by reference with the same force and effect as though set out in full.

2. The Contract Documents are intended to be complementary and to describe and provide for a complete work. Requirements in one of these are as binding as if occurring in all of them. In case of discrepancy, Supplemental Specifications will govern over the 2021 Standard Specifications; the Contract Plans will govern over both Supplemental and Standard Specifications, and Special Provisions will govern over both Plans and Specifications. In interpreting Plans, calculated dimensions will govern over scaled dimensions. Contract Plans, typical cross sections and approved working drawings will govern over Standard Drawings.

3. The Contractor agrees to furnish all materials, equipment, machinery, tools and labor and to perform the work required to complete the project in a thorough and skillful manner, to the satisfaction of the appropriate official of the Department.

4. The Department agrees to pay to the Contractor such unit prices for the work actually done as are set out in the accompanying proposal, in the manner provided for in the 2021 Standard Specifications, Supplemental Specifications and applicable Special Provisions.

5. The Contractor shall, at all times, observe and comply with all applicable federal, state and local laws, ordinances and regulations and shall indemnify and hold harmless the State of Tennessee and all of its officers, agents and servants against any claim of liability or assessment of fines or penalties arising from or based upon the Contractor's and/or its employees' violations of any such law ordinance or regulation. The Contractor shall maintain documentation for all charges against the State under this Contract. The books, records and documents of the Contractor insofar as they relate to the work performed or money received under this contract shall be maintained for a period of three (3) full years from the date of the final payment and shall be subject to audit at any reasonable time and upon reasonable notice by the State, the Comptroller of the Treasury, or their duly appointed representatives.

6. The Contractor shall be responsible for any and all injury or damage to persons or to property arising from the prosecution of the work and due to any act, omission, neglect or misconduct in its manner or method of prosecuting the work or due to its non-execution of the work or due to defective work or materials. The Contractor shall provide proof of adequate and appropriate general liability insurance providing liability coverage in an amount not less than $1 million dollars per occurrence and $300,000 per claimant, naming the State of Tennessee as an additional insured.

7. The Contractor shall indemnify and hold harmless the State, the Department and all of its officers, agents and employees from all suits, actions or claims of any character arising from the Contractor's acts or omissions in the prosecution of the work, use of unacceptable materials in constructing the work, infringement of patent, trade mark or copyright, or claims for Workers' Compensation. If any such suit, action or claim is filed, the Department may retain from the monies due to the Contractor under this Contract a sum deemed sufficient by the Department to protect the Department from loss therefrom. Upon resolution of the suit, action or claim, any remaining retained funds will be released.

8. Upon execution of this Contract, the Contractor shall be prepared to begin the work to be performed under the Contract. The Work Order will stipulate the date this Contract is effective as the expected start date for construction, but the work will not proceed until the Preconstruction Conference has been held. The days tabulated against the time limit will begin on the date this Contract is effective or the date the Contractor begins work, whichever occurs first. All other requirements in regard to the beginning of construction set forth in the Proposal and Special Provisions will apply from this date.

9. Upon execution of this Contract, the Contractor agrees to register with the plans collaboration software designated by the Department prior to the Preconstruction Meeting. The Contractor agrees that correspondence related to project plans or plans revisions and any request for information (RFI) shall be communicated through this tool during construction of the project. This paragraph shall not apply to no plans contracts.

IN WITNESS WHEREOF, the parties hereto have caused this Contract to be signed and executed by their respective authorized agents or officials, and, by signing this Contract, the parties agree that the electronic signature provided is the legal equivalent of a manual signature.

_____
Contractor

By: _____ _____
Authorized Agent/Official Name

_____
Date

STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

Approved:

_____
Department Attorney

_____
Date

_____
Commissioner

_____
Date

This Contract is accepted on _____ and is effective on _____.

Once executed by the Commissioner, Regional Operations shall proceed with scheduling the Preconstruction Conference.

CONTRACT PAYMENT AND PERFORMANCE BOND

CONTRACT NO. _____

Be it known that _____, as Principal, and _____ , as Surety(ies), all authorized to do business in the State of Tennessee, hereby bind themselves to the State of Tennessee, Department of Transportation, and other potential claimants, for all obligations incurred by the Principal under its contract with the State of Tennessee, Department of Transportation, for the construction of the above identified contract; in the full contract amount of $_____.

The obligations of the Principal and Surety(ies) under these payment and performance bonds shall continue in full force and effect until all materials, equipment and labor have been provided AND all requirements contained in the contract, plans and specifications have been completed in a timely, thorough and satisfactory manner. The parties agree that these bonds are statutory in nature and are governed by the provisions contained in Title 54, chapter 5 of the Tennessee Code Annotated relating to bonds required of contractors and that those provisions constitute a part of this bond.

By this instrument, the Principal and Surety(ies) specifically bind themselves, their heirs, successors, and assigns, *in solido*, under the following bonds:

Payment Bond. To the Tennessee Department of Transportation and all "Claimants," as contemplated by T.C.A. Title 54, chapter 5, in the full contract amount of $_____, in order to secure the payment in full of all timely claims under the project.

Performance Bond. To the Tennessee Department of Transportation in the full contract amount of $_____, in order to secure the full and faithful performance and timely completion of the project according to its plans and specifications, inclusive of overpayments to the contractor and liquidated damages as assessed.

Upon receipt of notice that the Principal is in default under the contract, the Surety(ies) shall undertake to complete performance, without regard to cost. If the Surety(ies) fail or refuse to complete performance of the contract, the Department may then proceed with the work in any lawful manner that it may elect until it is finally completed. When the work is thus finally completed, the total cost of the same will be computed. All costs and charges incurred by the Department in completing the Work will be deducted from any monies due or which may become due to the Principal. If the total costs of completion exceeds the sum which would have been payable under the Contract, then the Principal and the Surety(ies), *in solido*, shall be liable for and shall pay to the Department the amount of such excess.

In witness whereof we have signed this instrument as dated, and, by signing this Contract Payment and Performance Bond, the parties agree that the electronic signature provided is the legal equivalent of a manual signature.

Principal/Contractor: _____

By: _____ _____
Authorized Agent/Official Name

_____
Date

Surety: _____

By: _____ _____
Attorney-in-Fact Name

_____
Date

_____
Bonding Agency Name

_____
Street Address

_____ ____ _____
City, State, Zip

_____
Phone