

STATE

OF

TENNESSEE

(Rev. 12-15-21)

January 1, 2021

(Rev. 12-19-22)

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 4<sup>th</sup> Paragraph:**

The Department will make compressive strength test specimens in accordance with AASHTO R 100T-23.

**Subsection 705.06**, (pg. 697-698), 12-19-22; **Installation of Posts; Revise 1<sup>st</sup>, 2<sup>nd</sup>, Nos. 1,2,3, & 4 and 4<sup>th</sup> 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 ~~so as~~ 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. ~~Alternatively, the Contractor may d~~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.:

- ~~1. Within 18 inches of the ground surface, drill an oversized or elongated hole 24 inches into the rock. Set the post at the roadside edge of the hole, and backfill the hole with the cutting spoils.~~
- ~~a. If using wooden posts, either drill a single oversized hole 23 inches in diameter, or three overlapping holes 10 inches in diameter, to a length of 23 inches.~~
- ~~b. For steel posts, drill a single oversized hole, 20 inches in diameter, or three overlapping holes 8 inches in diameter, to a length of 20 inches.~~

~~2.—Below 18 inches of the ground surface, drill holes 12 inches into the rock or to the depth shown on the Plans. The holes shall be 8 inches in diameter for steel posts, and 12 inches in diameter for wood posts.~~

~~3.—If solid rock is encountered~~ ~~W~~hen 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.

~~4.—~~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 7<sup>th</sup> 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 7<sup>th</sup> 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 1<sup>st</sup> 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 ~~the outside diameter of the pipe plus~~ 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 1<sup>st</sup> 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 & 1<sup>st</sup> 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.B, (pg. 735-736), 12-15-21; THP Troopers and Uniformed Law Enforcement Officers; Revise 2<sup>nd</sup> 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:**

<i>Item</i>	<i>Pay Unit</i>
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 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 11<sup>th</sup> 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. with the first and second partial pay estimates paid on the Contract. Payment will be made at the rate of 50% of lump sum price for Mobilization on each of these partial pay estimates provided the amount bid for Mobilization does not exceed 5% of the total amount bid for the Contract. If the amount bid for the item of Mobilization exceeds 510% of the total amount bid for the Contract, the Department will pay 2-1/2% of the total amount bid on each of the first partial payment estimates, and that portion exceeding 510% on the last partial pay estimate. Payments will be made according to Table 717.03-1.

**Table 717.03-1: Payment Schedule for Mobilization**

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

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.

As an exception to the above, where the Work covered by the Contract is limited exclusively to the resurfacing of an existing pavement, including projects involving the milling off of a portion of the existing pavement prior to the laying down of new asphalt cement concrete layer(s), the Department will pay the entire lump sum price for the item of Mobilization, less the retainage provided for in Title 54-5-121, TCA, with the first partial pay estimate paid on the Contract, provided the amount bid for Mobilization does not exceed 5% of the total amount bid for the Contract. If the amount bid for the item of Mobilization exceeds 5% of the total amount bid for the Contract, the Department will pay 5% of the total amount bid for the Contract on the first partial pay estimate, and the portion exceeding 5% on the last partial pay estimate.

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

**E. Telephone, ~~Answering Machine,~~ and ~~Internet Facsimile Machine~~**

Provide telephone service with ~~an answering machine, voicemail and two incoming phone lines.~~ Provide internet service with wifi and two data ports for wired connections, a facsimile machine, and two incoming phone lines.

**Subsection 722.09, (pg. 805), 12-19-22; Concrete Cylinder Storage; Revise 1<sup>st</sup> 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 ~~will control~~ shall have access to the storage ~~facility shed/building~~. Equip the storage ~~facility shed~~ 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 box or curing tank and heater/circulator~~ shall comply with AASHTO M 201, and proper curing of the cylinders shall be in accordance with AASHTO R 100T-23. 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. The storage facility shall be equipped with a measuring device that will record the minimum and maximum temperatures inside of the curing area.