

Rev. 02-07-06

## **CHANGES TO THE SPECS**

### **SECTION 100**

**Subsection 109.06** (Delete the 3<sup>rd</sup> paragraph and replace with the following)

The department will not withhold retainage from the Contractor. No monthly estimate or partial payment will be made when the total value of the work done since the last previous monthly estimate amounts to less than \$1000.00.

**Subsection 109.02** (Added SP109P as a Supplemental Specification)

### **SECTION 200**

**Subsection 201.03** (Added as the seventh paragraph)

"Wood debris that is chipped on site shall be properly disposed of so that it does not become part of embankment."

**Subsection 202.04** (Be aware of additions to this section)

"The removal of bridge decks shall be governed by the following:

**Subsection 202.07** (Added to first Paragraph)

"The Department will remove and dispose of all Petroleum Underground Storage Tanks or Tank Systems through its Environmental Consultant."

**Subsection 202.10** (Changed third paragraph to read)

"The lump sum payment for Water Well Abandonment shall be full compensation for all labor, equipment, materials, including flowable fill, and incidentals necessary to complete the work."



**Subsection 203.02** (Part (b); **Added** to the end of the last paragraph)(Excavation and Undercutting)

“...including Archeological approval of source along with permits as required by the Tennessee Department of Environment and Conservation.”

**Subsection 203.07** (**Added** as the second sentence of the third paragraph)(Disposal)

“Waste material (earth and rock) not required for the construction of the project will be disposed of by the Contractor. The Contractor will be required to obtain any and all necessary permits including, but not limited to, NPDES, Aquatic Resources Alteration Permits, Corps of Engineers Section 404 Permits, and TVA Permits. The Contractor will provide copies of these approved permits prior to commencement of any work.”

**Subsection 204.06** (Added as part (a), (b) and (c) following the “Material” requirements)

“(a) General Use flowable fill

“(b) Excavatable flowable fill (EFF)

“(c) Early strength flowable fill (ESFF)

**Subsection 204.08** (**Added** to the end of the fourth paragraph)

“Where overshooting of rock, beyond the cut sections shown on the bridge plans cause modification of bridge abutments or span lengths, such modifications shall be made at the contractor’s expense.”

**Subsection 204.09** (**Revised** the first sentence of the fifth paragraph)

The Contractor shall submit drawings “prepared by and stamped by a Professional Engineer licensed in Tennessee,” showing details of his proposed cofferdam, or crib construction “to the Engineer, prior to starting any work.”



**Subsection 204.10 (Added as the last paragraph)**(Describes how to place flowable fill around a pipe)

“When flowable fill is required ...

**Subsection 204.11 (Added as the last sentence of the last paragraph of the section)**

The contractor shall also make provisions to form up, or provide earthen berms to prevent the flowable fill from escaping at the ends of the trench and around headwalls.

**Subsection 205.03 (Added to the first paragraph)**

Removal of Structures and Obstructions and preliminary erosion control measures “per the approved Storm Water Pollution Prevention Plan (SWPPP)”...

**Subsection 205.04 (Revised the third and fourth paragraph)**

“Maximum density and optimum moisture

**Subsection 205.04 (Added to the end of Paragraph seven)**(Formation of Embankment)

“Even if the required density is achieved and the moisture content is in range, if pumping occurs, these sections will be removed. The contractor will receive no payment in fill sections; however, in cut sections, undercutting will be paid per cubic yard(cubic meter).”

**Subsection 206.01 (Added to the end of Paragraph one)**(Final Dressing)

“The costs thereof shall be included in prices bid for other items of construction.”



**Subsection 209.01** (Added to the end of the second Paragraph)

"per the approved Storm Water Pollution Prevention Plan (SWPPP)."

**Subsection 209.07** (Added to this section)

(i) "Temporary Sediment Filter Bags

**Subsection 209.08** (Added to the end of the section)

"Temporary Sediment Bags shall be measured per each for the size bag used per **Subsection 209.02 (i)**."

**Subsection 209.09** (Added to the end of the section)

"The Temporary Sediment Bags will be paid ...

## **SECTION 300**

**Subsection 307.03(a)** (Clarified Design and Production void tolerances  
(Already a SS)

**Subsection 307.03(b)** (Clarified allowable percentages of processed and un-processed  
RAP)  
(Already a SP 307RAP)

**Section 308** (This Section was **DELETED**)  
**SECTION 308-BITUMINOUS COATED AGGREGATE BASE (PLANT MIX)**

**Subsection 309.02, 312.02, 402.02, 403.02** (Deleted "Cut-Back Asphalt, Grade RC-  
250" as a bituminous material for curing)

**Subsection 310** (Added reference to)  
Section 903.05 for the Aggregate for Conditioning Base



**Section 307.08** (Add the following table after the second paragraph)

Mix Type	Asphalt Content
307 A	4.0%
307 B	4.3%
307 BM	5.0%
307 BM2	5.0%
307 C	5.0%
307 CW	6.0%
307 CS	6.5%

### **SECTION 400**

**Subsection 403.05** (Added the requirement for a tack coat test strip) **quires uniform application with a minimum double overlap of the tack spray**

**Subsection 404.02, 405.02** (Deleted “Cut Back Asphalt RC-800 and RC-3000” from the materials section and **added RS-2p and CRS-2p** )

**Subsection 407.02** (Allows anti-strip additive to be added at the asphalt terminal)

**Subsection 407.03(C)** (**Allows** the Superpave Gyrotory Compactor (SGC @65 gyrations) (AASHTO T 321) to be an alternate mix design compactor to the Marshall Method (**Already a SS**))

**Subsection 407.03(C)** (**Added** TABLE A to clarify the allowable mixing and compaction temperatures for bituminous mixture design and how to show on the JMF)

**Subsection 407.03(C)** (**Added** Asphalt Pavement Analyzer (rutting) requirements for mixtures designed with the SGC with >5000 ADT)

**Subsection 407.03(D) 2(c) 8** (**Changed** 500 tons to 1000 tons for minimum production requiring **volumetric testing and verification**)

**Section 407.03D2(c) 8.d** (Add the following after the 2<sup>nd</sup> sentence)

The Contractor, at his risk, may continue to produce and place mixture after the first 500 tons without the test results complete, however all mixture subject to price adjustment or removal at the discretion of the Engineer if the test results do not comply with the specifications.

**Subsection 407.03(E)** (Changed TSR requirement from 75% to 80% minimum)

**Subsection 407.04(a) 6** (Added requirements for anti-strip additive storage tanks and totalizing flow meters)

**Section 407.11 Table B:** (Change the Maximum temperature for)

PG 64-22, PG 67-22 from 350° F (177° C) to 320° F (160°C)

**Subsection 407.12** (Referenced TABLE B for the minimum and maximum temperatures for aggregates)

**Subsection 407.13** (Referenced TABLE B for the minimum and maximum temperatures for mixture at the plant)

**Subsection 407.15** (Added density table, no changes to requirements)

**Subsection 407.15** (Test Strips, Added mix design /verification during test strip placement (see 407.03(D)2.(c)8.d above)

**Subsection 411.03** (Clarified Design air void and production air void requirements for mixes)

**Subsection 411.03** (Included section for allowance of RAP (Already allowed SP411RAP)

**Section 412** (Section was deleted)

**Subsection 414.02** (Clarified the type of emulsion to be used for slurry seal and microsurface)



**Section 414.03** (Micro Surface- Major changes were made to this section)

**Subsection 415.02** (Requires maximum tooth spacing of 5/8" on milling head  
- 415.04 Added language on surface condition so milled surface is free of scallops, scabs, etc.)

**Section 415.02:** (Delete the third paragraph)

(Requires min. 12' milling head on Interstate and controlled access roads with a contact or non-contact profiling/leveling system) This spec. is being looked at currently, and may be added back at the end of the year.

**Section 415.03:** (In the first sentence of the first paragraph, **change**)

Specified maximum forward speeds of milling machine based on tooth spacing (60 ft/min if ½-5/8" spacing, 80 ft/max. if <1/2" spacing)

## **SECTION 500**

**Subsection 501.02** (Allows the use of cement, fly ash, and Ground granulated blast furnace slag (GGBFS) for a ternary (tri-blend) cementitious blend)

**Subsection 501.03** (Added Class CP for Concrete Paving Mixtures)

**Subsection 501.03** (Added requirement for chemical admixtures (WR and retarder)

**Subsection 501.03** (Allow for ternary blends, min. 50% cement)

**Subsection 501.03** (Requires that each load of concrete be delivered with a batch ticket with the specified information including actual and target batch weights, etc.)

**Subsection 501.04(d)** (Requires a minimum of 2 work bridges)

**Subsection 501.09** (Require each load of concrete to have a batch ticket with required information)



**Subsection 501.10** (Specify a minimum of 30 revolutions of the mixing drum if allowable water is added in site)

**Subsection 501.12** (Requires any pavement with random cracks to be removed)

**Subsection 501.15(a)** (Requires longitudinal tie bars into hardened concrete be placed into predrilled holes with an epoxy able to withstand 12,000 lbs of pullout force. Also requires a minimum of 15, or 2%, of bars to be tested for pullout strength)

**Subsection 501.05(c)** (Requires a dowel bar implanting device to be demonstrated and accepted prior to use) (Requires sawing operations to be continuous once started)

**Subsection 501.17** (Allows the use of road profilers to test for pavement smoothness)

**Subsection 501.17** (Revised the profile index requirements, pay factors, and necessary corrective actions for pavement smoothness)

**Subsection 501.20** (Requires the joint sealant material to be an approved material from the QPL)

**Subsection 501.22** (Requires the pavement to be tested for smoothness and thickness prior to opening to traffic)

## **SECTION 600**

**Subsection 601.02** (Requires connectors to be galvanized in accordance with ASTM)

**Subsection 601.06(b)** (Requires pedestals to be sloped so water runs away from the bearings)

**Subsection 602.04** (Added the requirement "Fabricators of fracture critical steel bridge members shall be certified under the AISC Quality Certification, Fracture Critical Endorsement")



**Subsection 602.04** (Added next to last paragraph to clarify role and purpose of the Quality Assurance inspector hired by the Department at the steel fabrication plant)

**Subsection 602.05(d)** (Revised the requirements and procedures for straightening of Material)

**Subsection 602.05 (e) 1** (Increased yield to 70 ksi or more in which heat curving is not allowed)

**Subsection 602.05 (e) 3** (Reduced maximum heat temperature to 1100 deg. F).

**Subsection 602.06(a)** (Clarified that enlarged or slotted holes are only allowed if shown on the drawings with high strength bolts 5/8" diameter and larger)

**Section 602.17(E)1.(b)7** (Change the bolt diameter in the table from 1-1/6 to 1-1/2)

**Section 602.17** (Delete all references to AASHTO M 253 (ASTM A 490) bolts unless otherwise noted on the plans.)

**Subsection 602.17(B)** (Bolts, Nuts and Washers- Section completely revised with new requirements)

**Section 602.17(E)2.(b)5** (Delete the last two columns of the tables)

that refer to bolts lengths >4 but < 8 x bolt diameters and > 8 x bolt diameters.

**Subsection 602.18 & 602.19** (Re-referenced AASHTO/AWS Bridge Welding Code D1.5 current edition)

**Subsection 602.25** (Makes reference to "built up" girders. Also requires a silicon caulk instead of red lead paste prior to painting for web splices w/out cover plates)

**Subsection 602.26** (Added ASTM A709 Grade HPS 100 WS with temperature limits and removed ASTM A 514)



**Subsection 602.29** (Added ASTM A709 Grade HPS 100 WS with temperature limits and removed ASTM A 514 and ASTM A 517)

**Subsection 602.35** (Replaced ASTM A 36 steel with ASTM A 709 Grade 36 steel)

**Section 602.35(b):** (Delete this section)

**Subsection 602.43** (Added ASTM A709 Grade HPS 100 WS with temperature limits and removed ASTM A 514)

**Subsection 602.47 (d)** (Revised 1<sup>st</sup> sentence to)

“Unless otherwise indicated on the plans or conditionally approved by the Engineer, all anchor bolts shall be cast into the masonry.”

**Subsection 603.01** (Requires **ALL** contractors or sub contractors involved with surface preparation or coating to be certified according to the Society for Protective Coatings (SPCC) Contractors Certification Program (CCP))

**Subsection 603.05(2) b** (Revised the visual surface appearance requirements to be in accordance with The Society for Protective Coatings Visual Standard for Abrasive Blast Cleaned Steel.)

**Subsection 603.06(a) and (b)** (Specified Max. Dry film thicknesses (5 mils.) and only allows the primer to be shop applied, intermediate and finish shall be field applied.) (Requires all coats/systems to be from same manufacturer for compatibility)

**Subsection 603.11** (Clarified one coat of shop primer)

**Subsection 603.12** (Clarified the intermediate and finish coats shall be field applied after erection) (Added paragraph requiring sanding for running or sagging or for over thickness)

**Subsection 603.17** (States that painting of structure shall be included in the bid price for Structural Steel)



**Section 604.02** (Revise the first sentence of the sixth paragraph to state)

Unless otherwise indicated on the plans, the Contractor may substitute pre-cast reinforced box sections meeting the requirements of **Subsection 914.08** for all fill heights for cast in place concrete box sections.

**Subsection 604.02** (Allows the use of a ternary blend of cementitious materials for Class A (already a SS) (Requires the Contractor to notify the Project Engineer and Division of Structures when he intends to use an existing Standard Drawing or AASHTO Standard for box culverts, and to submit shop drawings and design calculations if using another design)

**Subsection 604.03** (Some adjustments to the Proportioning Table were made)

**Subsection 604.03 (b) 12** (Requires a concrete delivery ticket be accompanied with each load to the placement site. The ticket shall contain all the information specified including: project information, water allowed, total water added at plant, number of mixing revolutions, actual and required batch weights, time of batching and unloading, etc...)

**Subsection 604.03 (b)** (Requires 30 mixing revolutions when allowable water is added in the field)

**Subsection 604.04** (Requires)

"The contractor shall provide at every concrete deck pour a portable, cold fogger capable of changing humidity and cooling air above fresh concrete. The fogger will be designed to provide a VMD(volume mean diameter) of 15, a maximum throw distance of 60 ft.(18 m), and an area of 600 s.f.(55 m<sup>2</sup>)."

**Subsection 604.05 (g) 9** (Added language regarding the submittal of shop drawings and the role of the Structures Division.) (Also continued the numbering in this section 10-16.)

**Subsection 604.05 (g) 17 and 18** (New sections added to clarify Contractor responsibility and no over runs in concrete will be paid for due to deflection of stay in-place (SIP) forms)



**Subsection 604.05(i) and (j)** (Sections added to clarify contractor responsibility for girder stability and other considerations using different forming systems)

**Subsection 604.11** (Old section on Expansion Joints moved to new **Section 623**)

**Subsection 604.13** (Allows mixing water or chemical admixtures to be withheld from transit mixers and added at the work site if all requirements of the approved mix design are met and provided the mix is tested and complies with the specifications (air, slump, temperature). Water that can be added must be shown on the delivery ticket.)

**Section 604.15** ( Delete the 7<sup>th</sup> paragraph of this section)

**Subsection 604.15** (Requires cylinders to be submitted within 56 days or cores will be required)

**Section 604.16(a)** (Delete the 12<sup>th</sup> paragraph of this section)

**Subsection 604.21(d)** (Requires concrete to be in place 28 days prior to adding the textured finish.) (Also requires 2 applications of the texture coat to be applied at 45 SF/gal each)

**Subsection 604.22(c)** (Requires any grinding for smoothness to be completed prior to transverse mechanical grooving)

**Subsection 604.23(b)** (Allows other sheet type materials meeting AASHTO M-171 to be used in lieu of damp burlap for water curing)

**Subsection 604.27** (Allows the use of the road profiler van to be used for measuring deck smoothness.)

**Subsection 615.05** (Clarifies that each plant to have a Quality Control Plan in accordance with section 604.03)

**Subsection 615.07** (Revised section to comply with PCI recommended practice)  
(PCI Plant Certification is your assurance of confirmed capability, and a commitment to quality)

**Subsection 615.08** (Requires initial tensioning for multi-strand jacks to be 5000 lb.)



**Subsection 615.09** (Added table for Class P concrete in this section.)  
(Also increased maximum allowable slump to 8" with HRWRA)  
(Specified the frequency of sampling and testing to be done in accordance with the M&T schedule)

**Subsection 616.02** (Requires all Post tensioning components to be certified in accordance with PTI- (Post-Tensioning Institute))

**Subsection 616.07** (This entire section has been revised with reference to PTI)

**Subsection 616.09** (This entire section has been revised with reference to PTI and would require oversight of grouting by a certified individual from the American Segmental Bridge Institute)

**Subsection 619.02** (Allows Type I or III cement to be used)

**Subsection 619.06** (Requires scarification of existing deck to be by hydro-demolition)

**Subsection 619.07 former** (Removed section on Deck repairs (details typically on plans))

**Subsection 619.07 new** (Specified how to clean deck surface)  
(Requires, cleaned surface to be covered with plastic to prevent contamination.)

**Subsection 619.09 former** (Removed the grout-bond coat section)

**Subsection 619.08 new** (Changed the maximum time between batching and placing mix to be 5 minutes.)

**Subsection 619.10** (Required mechanical texturing)

**Subsection 619.11** (Increased and improved the requirements for curing (were plan notes))

**Subsection 619.13** (Added section on Traffic Loading linked to compressive strength requirements and curing period requirements).

**Subsection 619.14** (Would require high molecular weight methacrylate sealant to cracks in new overlay at the contractor's expense)

**Subsection 619.15** (Added language to define payment for variable depth overlay)

**Subsection 623** (New section on Bridge Expansion Joints, includes Modular Expansion Joints and Strip Seal Expansion Joints)

## **SECTION 700**

**Subsection 705.02** (Added as the last paragraph of this section) (This is a SS currently)

"All guardrail safety End Treatment systems shall require certification from the supplier that the device is an NCHRP 350 approved product, documented in an acceptance letter from FHWA. The acceptance letter stating that the proposed device complies with NCHRP 350, for the appropriate test level, shall be attached to the certification. In addition, detailed shop drawings for the NCHRP 350 approved devices shall be submitted to the Engineer and shall be on-site during installation."

**Subsection 705.06** (Add as the second paragraph)(This is a SS currently)

All post holes, dug, shall be of such size as will permit proper setting of the posts, and allow sufficient room for backfilling and tamping.

- When posts are driven to refusal, or solid rock is encountered while placing posts, the contractor will be allowed to drill or bore holes to place posts.
- In addition, all posts for in-line guardrail and end terminals shall be installed to the depths shown in the Standard Drawings.
- When rock is encountered, post holes shall be drilled a minimum of 20 inches in diameter for steel posts (or 3-8 inch diameter holes side by side), or a minimum of 23 inches in diameter for wood posts (or 3-10 inch diameter holes side by side).
- The post shall be set at the roadside edge of the hole and backfilled with compressible materials (e.g. rock drilling spoils, #57 stone, etc.).

Holes shall be backfilled with selected earth or other suitable materials in layers not to exceed 4 in. (100 mm) in thickness and each layer shall be thoroughly tamped. When backfilling and tamping is completed, the posts or anchors shall be held securely in place.



**Subsection 705.06 (Add as the last paragraph of this section)**

As a QA/QC measure, each guardrail contractor/installer doing work for the Department shall have a minimum of 5 line posts and 5 terminal posts per Region, per year pulled by the Department for verification of length. The Regional Construction and Materials and Tests offices may select any post for verification, but at a minimum, must select posts from five different runs of rail. If the posts are found to be in accordance with the plans and specifications they may be re-installed if they were not damaged during the pulling process. If the post length is found to be deficient the contractor/installer shall be required to remove the entire run of guardrail or end terminal and replace it properly at his expense.

**Subsection 705.10 (Add as the last three paragraphs)(This is a SS currently)**

When no contract unit price has been established for drilling or boring in solid rock, for posts, while placing Single Guardrail, payment for each hole shall be made at a rate equal to 2.0 times the contract unit price for Single Guardrail.

While drilling or boring into solid rock for posts placed in conjunction with Guardrail at Bridge Ends, Parapets, Piers, Concrete Endposts, and other similar edifice, payment shall be made at a rate equal to 1.25 times the contract unit price per hole.

When no unit price has been established for drilling or boring into solid rock for End Terminals posts, payment shall be made at a rate equal to 2.0 times the contract unit price for single guardrail per hole.

Unless posts are driven to refusal in solid rock, prior to drilling or boring, no additional payment will be made for drilling or boring for the placement of posts.

**Subsection 706.01 (Added as the second paragraph) (This is a SS currently)**

“Posts Furnished and Guardrail Furnished shall consist of furnishing and setting guardrail and posts that replace rail and posts that are unsuitable for resetting, as shown on the Plans or as directed by the Engineer. Guardrail removed and reset shall comply with current standards as shown on the Department’s standard drawings, and/or approved shop drawings, for that type of installation.”



**Subsection 706.10** (Change fourth and fifth paragraphs to read as follows)

End terminals, in accordance with **Subsections 705.09** and **705.10**, respectively will be measured and paid for.

No measurement for payment will be made for projections or end terminals beyond the end post.

**Subsection 706.12** (Most significant change was the addition of compliance **NCHRP requirements**)

**Subsection 712.04** (Add **Night Work Lighting** special provision as a specification)

**Subsection 712.10** (Add the following as the first paragraph)

The lump sum payment for Traffic Control, or Temporary Workzone Lighting shall include all equipment, labor, materials and shall included full compensation for furnishing flaggers, traffic cones and removing conflicting and incorrect pavement markings, as required, until project completion.

**Section 740** (Add **SECTION 740 – GEOTEXTILES**)

**SECTION 800**

No significant changes

**SECTION 900**

No significant changes



