

**STATE**  
(Rev. 11-16-15)  
(Rev. 6-27-16)  
(Rev. 12-2-16)  
(Rev. 5-15-17)  
(Rev. 10-8-18)  
(Rev. 5-13-19)  
(Rev. 12-30-19)

**OF**

**TENNESSEE**  
January 1, 2015

**Supplemental Specifications - Section 300**  
**of the**  
**Standard Specifications for Road and Bridge Construction**  
**January 1, 2015**

**Subsection 303** (pg. 220), 10-8-18; Mineral Aggregate Base, Remove 303.04 Sodium Chloride from Index.

**Subsection 303.01** (pg. 220) 5-15-17; add the following sentence as the last sentence of the 2<sup>nd</sup> paragraph:

“Mineral aggregates base shall be Type A or Type B, whichever is shown on the Plans and called for in the bid schedule. Reclaimed Concrete Aggregate (RCA) may be used as an alternate for Type A or Type B base material.”

**Subsection 303.02** (pg. 220-221) 5-15-17; add the following sentence to the last sentence of the 1<sup>st</sup> paragraph:

“Depending upon whether the Plans require Type A or Type B base, provide mineral aggregate meeting 903.05. For Type A base, use aggregate of Grading D. For Type B base, the Contractor may use aggregate of Grading C or D. For RCA, use grading specified in 903.05-C.”

**Subsection 303.04** (pg. 221) 10-8-18; Sodium Chloride, remove all information pertaining to Sodium Chloride from subsection:

**Subsection 303.07** (pg. 222-223) 5-15-17; modify the 1<sup>st</sup> sentence of the 1<sup>st</sup> paragraph to the following:

“Construct Mineral Aggregate Base, Type A, Type B, or RCA in one or more layers, to the compacted thickness shown on the Plans.”

**Subsection 303.08** (pg. 223-224) 5-15-17; add the last sentence to the last paragraph of subsection A:

“For Mineral Aggregate Base, Type A, use the stationary plant method. For Mineral Aggregate Base, Type B, requiring the blending of two or more materials, use either the stationary plant method or the road mix method (mechanical mixer), except as provided for in **903.05**. For Mineral Aggregate Base, Type B, requiring additive, use either stationary plant mixing or road mixing. When using RCA as a replacement for Mineral Aggregate Base, Type A or Type B, use the intended method of mixing for the material listed above.”

**Subsection 303.08** (pg. 225) 10-8-18; Mixing, B. Use of Calcium Chloride and Sodium Chloride, Remove all information pertaining to Sodium Chloride:

**“B. Use of Calcium Chloride**

If using calcium chloride, incorporate it in either the solid or liquid form, at the approximate rate of 6 pounds per ton of aggregate, noting that:

- 6 pounds is equivalent to 1.29 gallons 60 °F 32% solution
- 6 pounds is equivalent to 1.02 gallons 60 °F 38% solution

For stationary plant mixing, proportion chloride material, in solid form, through a hopper equipped with an approved vibratory feeder and an adjustable opening capable of accurately controlling the flow of material. Proportion calcium chloride liquor using an approved calibrated meter that has a registering capacity capable of indicating the total amount of liquid used during any single day’s operation.

For road mixing, add the chloride material to the aggregate at the point in the mixing operation and in the manner directed by the Engineer.”

**Subsection 303.10** (pg. 225-227) 5-15-17; add subsection c.:

**“2. Density Requirements**

- a. **Type A Base.** The average density of each lot of Type A base, unless otherwise specified, shall be within 100% of maximum density as determined according to AASHTO T 99, Method D, with no individual test less than 97% of maximum density.
- b. **Type B Base.** The average density of each lot of Type B base, unless otherwise specified, shall be not less than 97% of maximum density as determined according to AASHTO T 99, Method D, with no individual test being less than 95% of maximum density.
- c. **RCA Base.** The average density of each lot of RCA base, unless otherwise specified, shall be not less than 100% of maximum density as determined according to AASHTO T 99, Method D, with no individual test less than 97% of maximum density. The moisture content shall be within  $\pm 3\%$  of the optimum moisture content as determined by an independent laboratory analysis. Mixing of the material with water shall be completed per Section 303.08.”

**Subsection 303.10 C.2.c** (pg 227), 5-13-19; **Density Requirements**; Revise paragraph:

- c. **RCA Base.** The average density of each lot of RCA base, unless otherwise specified, shall be not less than 100% of maximum density as determined according to AASHTO T 99, Method D, with no individual test less than 97% of maximum density. The moisture content shall be within  $\pm 3\%$  of the optimum moisture content as determined by Departmental analysis. Mixing of the material with water shall be completed per Section 303.08.

**Subsection 303.14** (pg. 228) 5-15-17; revise the first sentence of A.:

**“A. Mineral Aggregate for Mineral Aggregate Base, Type A or Type B, or RCA**

The Department will measure Mineral Aggregate for Mineral Aggregate Base, Type A, Type B, or RCA, by the ton, in accordance with **109.**”

**Subsection 303.14** (pg. 228) 10-8-18, C. Sodium Chloride, remove part C. which covers Sodium Chloride:

**Subsection 303.15** (pg 229) 10-8-18, Basis of Payment; remove item for Sodium Chloride:

**303.15 Basis of Payment**

The Department will pay for accepted quantities at the contract prices as follows:

<i>Item</i>	<i>Pay Unit</i>
Mineral Aggregate, Type_____Base	Ton
Calcium Chloride	Ton
Water	MG

The Department will pay for the work required to prepare the subgrade in accordance with 303.07 as provided for in the applicable Section or Subsection under which the work is performed.

**Subsection 303.15** (pg. 229), 12-30-19; **Basis of Payment**; Add subsection A & B:

**A. General**

The Department will pay for accepted quantities at the contract prices as follows:

...

**B. Adjustments**

**Specific Gravity.** In cases where the Bulk SSD specific gravity of the mineral aggregate exceeds 2.80, the Department will adjust the tonnage of mineral aggregate for payment by multiplying the tonnage of mineral aggregate used by a specific gravity of 2.80 and dividing by the higher specific gravity.

Subsection 307.03 (pg. 246) 11-16-15; Modify Table 307.03-3:

B. Recycled Asphalt Pavement for Bituminous Plant Mix Base, Table 307.03-3

**Table 307.03-3: Mixtures Using RAP**

Mix Type	% RAP (Non-processed) <sup>(1)</sup>	Maximum % RAP (Processed) <sup>(2)</sup>	Maximum % RAP Processed & Fractionated <sup>(3)</sup>	Maximum Particle Size (inches)
307-ACRL	0	00	-	-
307-AS	0	00	15	-
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

<sup>(1)</sup> “Non-processed” refers to RAP that has not been crushed and screened or otherwise sized prior to its use.

<sup>(2)</sup> “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.

<sup>(3)</sup> “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 individual fractions of two different maximum particle size are introduced into the plant as separate material sources for increased control.

<sup>(4)</sup> RAP for 307-AS must be processed in a manner such that the minimum particle size is no smaller than 3/4” prior to solvent extraction. For RAP containing gravel as coarse aggregate, the maximum allowable RAP content shall be 10%.

2. Recycled Asphalt Shingles (RAS) RAS may be included to a maximum of 3% of the total weight of the mixture.

**Subsection 307.03** (pg. 246) 5-15-17; Modify Table 307.03-3:

B. Recycled Asphalt Pavement for Bituminous Plant Mix Base, Table 307.03-3

**Table 307.03-3: Mixtures Using RAP**

Mix Type	% RAP (Non-processed) <sup>(1)</sup>	Maximum % RAP (Processed) <sup>(2)</sup>	Maximum % RAP Processed & Fractionated <sup>(3)</sup>	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

<sup>(1)</sup> “Non-processed” refers to RAP that has not been crushed and screened or otherwise sized prior to its use.

<sup>(2)</sup> “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.

<sup>(3)</sup> “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 individual fractions of two different maximum particle size are introduced into the plant as separate material sources for increased control.

**Subsection 307.03** (pg. 250) 6-27-16; C. revise the last paragraph to the following:

“Mix an approved antistripping agent with the asphalt cement at the dosage as specified in **921.06.B.**”

**Subsection 307.06** (pg.250), 12-30-19; **Preparing the Subgrade, Sub-base, or Surface;** Revise 1<sup>st</sup> paragraph:

The Plans will indicate whether the plant-mixed base is to be constructed on a treated or untreated subgrade or sub-base, on a granular base, or on an existing surface. Ensure that the surface upon which the plant mix base is to be constructed meets 205, 207, 302, 303, 304, or 309, whichever is applicable. If shown on the Plans, condition the surface as specified in 407.10. Condition existing mineral aggregate base as specified in 310. Construct prime coat or tack coat, ~~when shown on the Plans~~, as specified in 402 or 403, respectively.

**Subsection 307.06** (pg. 250) 12-2-16; add the following as the second paragraph:

“Do not place AS/ACRL which cannot be covered by the next course of pavement within the same construction season.”

**Subsection 309.02** (pg. 253-254), 5-13-19; **Materials;** Add material to list:

Provide materials as specified in:

Water .....	<b>302.03.B</b>
Portland Cement, Type I.....	<b>901.01</b>
Portland-Pozzolan Cement, Type IP.....	<b>901.01</b>
Crushed Stone or Slag, Grading D.....	<b>903.05</b>
Aggregate, Crushed or Uncrushed Gravel or Chert .....	<b>903.15</b>
Reclaimed Concrete Aggregate .....	<b>903.05.C</b>
Bituminous Material for Curing, Emulsified Asphalt, Types allowed for Tack Coat in <b>403</b> .....	<b>904.03</b>

**Subsection 309.14** (pg. 258-259), 12-30-19; **Basis of Payment;** Add subsection A & B:

**A. General**

The Department will pay for accepted quantities at the contract prices as follows:

....

**B. Adjustments**

**Specific Gravity.** In cases where the Bulk SSD specific gravity of the mineral aggregate exceeds 2.80, the Department will adjust the tonnage of mineral aggregate for payment by multiplying the tonnage of mineral aggregate used by a specific gravity of 2.80 and dividing by the higher specific gravity.

**Subsection 310.02** (pg. 260) 10-8-18, Materials, Remove materials information for sodium chloride:

**“310.02 Materials**

Provide materials as specified in:

Aggregate for Conditioning Base .....	<b>903.05</b>
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Calcium Chloride, Type 1, Type 2 or Calcium Chloride Liquor ..... **921.02**

**Subsection 310.04** (pg.261) 10-8-18, Conditioning, remove sodium chloride from the 3<sup>rd</sup> paragraph:

**“310.04 Conditioning**

Condition the existing base by applying water, blading, and compacting as directed by the Engineer. Scarify sections of existing base that are pot-holed to the full depth of the pot holes. Scarify and shape warped and distorted sections as directed by the Engineer. Moisten the material as necessary, and mix, shape, and roll until the base is uniformly and thoroughly compacted. Continue applying water, blading, and rolling until a smooth, dense, well-bonded surface is obtained that meets the Engineer’s approval.

The Department will divide the completed base into lots of approximately 10,000 square yards for density testing purposes, and will perform five density tests in each lot. The average dry density shall be not less than 100% of maximum density as determined according to AASHTO T 99 Method D, and no individual test shall be less than 97% of maximum density. Smaller lots may be considered when approved or directed by the Engineer.

Distribute calcium chloride ~~or sodium chloride~~, when specified, at the approximate rate of 1 pound per square yard and incorporate it in the base material during blading and rolling operations as directed by the Engineer.

If additional material is to be added to the existing base, lightly scarify the existing base, add the material, and condition the base as specified above.

**Subsection 310.06** (pg. 262)10-8-18, Method of Measurement, Remove 3. Sodium Chloride information from the subsection, renumber 4. to 3.:

**“310.06 Method of Measurement**

The Department will measure:

1. Conditioning Mineral Aggregate Base by the linear mile, based on a horizontal measurement made along the median centerline of the Project for divided sections and along the centerline of the pavement for two-lane sections, excluding bridges.
2. Calcium Chloride by the ton in accordance with 303.14.D.
3. Water by M.G. (1,000 gallons) using calibrated tanks or distributors, or accurate water meters.

If the Contract requires the construction of a mineral aggregate base and a surface course, the Department will not directly measure or pay for conditioning of the base but will consider this work to be incidental to the unit price bid for the base material.

If the Contract requires the addition of base material to sections or the entire length of a previously constructed base, the Department will not directly measure or pay for conditioning of the base on the sections where base material is added. Sections where base material is not added will be measured for payment by the linear mile.

If the Contract requires a surface to be constructed on a previously constructed base and no additional material is added to the base, the Department will measure and pay for conditioning of the base by the linear mile.”

**Subsection 310.07** (pg. 262) 10-8-18, Basis of Payment, Remove all information for sodium chloride:

**“310.07 Basis of Payment**

The Department will pay for accepted quantities at the contract prices as follows:

*Item Pay Unit*

Conditioning Mineral Aggregate Base	Linear Mile
Calcium Chloride	Ton
Water	MG

Payment for Conditioning Mineral Aggregate Base is full compensation for conditioning all base on interchanges, approaches, service roads, ramps, frontage roads, roadside rest areas, and all other base within the limits of the Project that requires conditioning to receive a succeeding stage of construction under the Contract.”

**Subsection 313.03** (pg. 273) 11-16-15; B. Bituminous Treated Permeable Base, add the following sentence to the end of the paragraph:

“Recycled Asphalt Pavement (RAP) meeting the requirements of 307.03.B may be incorporated into asphalt treated permeable base up to 15% by weight of aggregate. RAP must be processed in a manner such that the minimum particle size is no smaller than ¾” prior to solvent extraction. Treated permeable base mixtures containing RAP shall contain at least 65% virgin asphalt binder. For RAP containing gravel as a coarse aggregate, the maximum allowable RAP content shall be 10%”

**Subsection 313.03** (pg. 273) 5-15-17; B. Bituminous Treated Permeable Base, revise the sentence added on 11-16-15 to the following sentence:

“Recycled Asphalt Pavement (RAP) meeting the requirements of 307.03.B may be incorporated into asphalt treated permeable base up to 10% by weight of aggregate. Treated permeable base mixtures containing RAP shall contain at least 65% virgin asphalt binder. For RAP containing gravel as a coarse aggregate, the maximum allowable RAP content shall be 10%.

Mix an approved antistrip agent with the asphalt cement at the dosage as specified in **921.06.B.**”

**Subsection 313.10** (pg. 276) 5-15-17; Basis of Payment, add the sentence as the third paragraph:

“The cost of antistrip additive used in Bituminous Plant Mix (Hot Mix) will be included in the price of Treated Permeable Base.”