

SECTION 303 - WATERBOUND MACADAM BASE COURSE

303.01 Description. This work includes furnishing and placing one (1) or more courses of waterbound macadam base on a prepared surface according to the contract.

303.02 Materials. Materials shall conform to the following: *

Aggregate 703.05

Binder 703.05

Water 712.01

303.03 Construction Requirements. The Contractor shall water, shape, and compact the adjacent shoulders for a width of not less than five (5) feet to the proposed grade for the upper surface of the base. The Contractor shall cut the inside edges of the shoulders to a straight line with slopes as nearly vertical as the shoulder material permits. The toe of the cut shall be the exterior bottom limit for the waterbound macadam base material. The Contractor shall dispose material cut away from the shoulders along the adjacent roadway as ordered by the Engineer. *

(A) Placing. The Contractor shall place the coarse aggregate only upon surfaces according to the contract. The laying of macadam shall not commence until the surface is dry and supports the loaded trucks or other equipment. *

The Contractor shall spread the coarse aggregate on the prepared surface to such a depth that when thoroughly compacted the coarse aggregate shall be of the form and dimensions shown on the typical cross-section. If the required thickness is four (4) inches or less, the Contractor shall place the macadam base course in one (1) layer. If the required thickness is more than four (4) inches, the Contractor shall place the macadam base course in two (2) or more layers of approximately equal thickness. Each layer shall have a compacted thickness of not more than four (4) inches. *

The Contractor shall spread the coarse aggregate upon the prepared surface by vehicles equipped with acceptable spreading devices. If the Engineer permits, in writing, sand in the surface material, the Contractor may dump the coarse aggregate in piles upon the surface and spread by bulldozing ahead from the previously spread material. The material shall be free from segregation. The Contractor shall remix the segregated materials to conform to the contract. *

The Contractor shall commence depositing and spreading at the farthest point of loading the material. The Contractor shall progress continuously without breaks. *

(B) **Compacting.** The Contractor shall compact the material thoroughly by power rollers as specified herein immediately upon completion of each portion of spreading operations. The Contractor shall roll as to avoid the formation of bumps or irregularities. The finished surface shall be within 0.04 foot of the required grade and cross-section.

Rolling shall be longitudinal. The Contractor shall commence rolling at the lower edges with the outside rear wheel covering equal parts of shoulder and base. The Contractor shall progress rolling toward the higher portion of the roadbed with an overlap of at least half (1/2) of the rear wheel tracks on successive trips. The Contractor shall not roll the center of the base material first. The Contractor shall proceed rolling without interruption across the area. The Contractor shall continue rolling until rocking and settlement have ceased. The Contractor shall continue rolling until the Contractor keys and compacts the coarse rock. The Contractor shall continue rolling until the coarse rock does not creep nor move under the weight of the roller.

The Contractor shall spread the binder sufficiently dry in thin layers. The Contractor shall broom and roll each layer until the Contractor cannot force the fillers into the interstices. The Contractor shall not exceed each layer of filler fifteen (15) pounds per square yard. The Contractor shall sprinkle the surface with water and rerolled thoroughly. The Contractor shall scatter the excess filler on the surface by light sweeping. The Contractor shall continue the sprinkling and rolling and apply additional filler where bare spots appear until the Contractor fills the interstices and until a slight wave of excess water and filler forms a grout in front of the roller. The Contractor shall use hand brooms to sweep the wet filler into the unfilled interstices. The Contractor shall reroll and water the macadam on succeeding days, as may be necessary, to bond macadam thoroughly and secure a satisfactory surface. The quantity of binder and water used shall be sufficient to produce a smooth, hard and well bonded surface.

(C) **General.** The Contractor shall repair or replace such macadam base with acceptable material according to the contract at no cost to the State if:

- (1) the Contractor disturbs or displaces the finished macadam base from planned section, or
- (2) foreign matter enters the base materials during storage, hauling, or placing operations

The Contractor shall construct each layer as above specified except that the Engineer will require sprinkling only in the top layer where the Contractor is constructing the waterbound macadam base course in more than one (1) layer.

The completed base shall have a firm, even surface free from bumps and irregularities. The Contractor shall give particular care to strengthen and compact the edges to an unyielding condition.

(D) **Equipment.** The Contractor shall roll by power rollers weighing not less than twelve (12) tons. The Contractor shall provide a compression on the rear wheels of more than three hundred twenty-five (325) pounds per linear inch of tire width. The Contractor shall equip the roller with an adjustable broom to aid brooming during rolling.

The drag broom shall be of conventional design, including a rigid frame sixteen (16) feet long and of suitable width. The drag broom shall have four (4) banks of brooms, two (2) straight across the end and two (2) intermediate banks on opposing diagonals. The Contractor shall replace brooms before they become too worn to be effective. The Contractor shall pull the drag broom on a long tow rope at a "foot walk" speed (3 to 4 miles per hour) by a pneumatic-tired farm tractor or suitable equivalent.

The Contractor shall broom with long bristle brooms. If such brooms are not available according to the contract, the Contractor may use standard rattan street brooms.

303.04 Method of Measurement. The Engineer will measure the coarse aggregate and binder for waterbound macadam base by the ton according to Section 109 - Measurement and Payment. At the time of weighing for payment, the Engineer will deduct moisture from the weighed tonnage:

(1) over three (3) percent in coarse aggregate and

(2) over ten (10) percent in binder, based on dry weight.

303.05 Basis of Payment. The Engineer will pay for the accepted quantities of the coarse aggregate and binder for waterbound macadam base at the contract unit price per ton complete in place. The unit price paid shall be full compensation for furnishing labor, material, tools, equipment, and water for compaction and incidentals necessary to complete the work.

--The Engineer will make payment under:

Pay Item	Pay Unit
Coarse Aggregate for Waterbound Macadam Base	Ton
Binder for Waterbound Macadam Base	Ton