

## ITEM 304.98 06 M - CRUSHED SUBBASE COURSE

### DESCRIPTION

Furnish and place crushed subbase course as shown on the Contract Plans or as ordered by the Engineer.

### MATERIALS

#### A. CRUSHED STONE, CRUSHED GRAVEL AND CRUSHED BLAST FURNACE SLAG

Provide crushed stone, crushed gravel or crushed blast furnace slag conforming to the following provisions:

##### 1. Test and Control Methods.

Perform materials tests and quality control methods pertaining to the work of this section conformance with the procedures contained in the current appropriate Departmental publications. These publications are available upon request from the Regional Director or the Director, Geotechnical Engineering Bureau.

##### 2. Materials Requirements.

Provide a material which meets this specification. Should the subbase course become unstable at any time prior to the placement of the overlying course due to the gradation of the furnished material, correct the unstable condition, at no expense to the State, to the satisfaction of the Engineer.

##### A. Gradation.

Grade all material in accordance with TABLE 1.

TABLE 1

<u>Sieve Size Designation</u>	<u>Percent Passing By Weight</u>
37.5 mm	100
25 mm	90-100
12.5 mm	25-80
6.3 mm	20-45
75 µm	2-7

##### B. Durability.

Material having a Magnesium Sulfate Soundness loss in excess of 20 percent after 4 cycles will be rejected and not placed in the work.

##### C. Plasticity Index.

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Material having a Plasticity Index in excess of 5 will be rejected and not be placed in the work.

### D. Elongated Particles.

Material having flat or elongated particles in excess of 30 percent by weight of the particles retained on a 12.5 mm sieve will be rejected and not placed in the work. A flat or elongated particle is one that has its greater dimension more than three times its least dimension. Determination will be based on a visual inspection by the Engineer.

### E. Crush Requirement.

Crushed material shall consist clean, durable, sharp-angled fragments of gravel free from coatings. A crushed particle shall be defined as one in which the total area of face fracture exceeds 25% of the maximum cross-sectional area of the particle. When the State elects to test for crush count, a minimum 75% of material larger than 12.5mm shall have 1 (one) fractured face. Material that has not been processed through a crusher shall not be combined with crushed material.

### 3. Stockpiling.

Stockpile all material in accordance with the most recent Geotechnical Engineering Bureau Granular Control Procedure titled, Procedure for the Control of Granular Materials. This Procedure is available upon request from the Regional Director or the Director, Geotechnical Engineering Bureau. Do not use material from any stockpile until the stockpile has been sampled, tested and approved, in writing, by the Departmental Geotechnical Engineer.

## **CONSTRUCTION DETAILS**

### A. PLACEMENT

Place crushed aggregate subbase course material on the grade with a mechanical spreader. The Departmental Geotechnical Engineer may waive this requirement, in writing, for those locations where it is deemed not practical. In those locations, place crushed aggregate subbase course material with trucks and carefully unload on the grade so that the distance the material must be moved is minimized. Do not spread material from piles dumped on the grade.

Remove and replace any and all portions of this course which become contaminated, degrade or otherwise do not conform to the requirements of these specifications with specified material.

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### **B. COMPACTION**

Compact the subbase course conforming to the provisions of Section 203.3.12, "Compaction". The maximum compacted layer thickness must not exceed 380 mm. Do not lag the compaction of any subbase course lift with spreading operations by more than 150 meters. Do not run highway or construction equipment over the final finished subbase course surface except as necessary for the construction of the overlying pavement course at that location. Prior to final finishing of the course, however, traffic over the course may be permitted at locations designated by and under such restrictions as may be imposed by the Engineer.

Fill any depressions that develop during rolling with crushed aggregate subbase material and continue rolling until the entire subbase course surface is true to grade and cross section. After compaction, the top surface of this course at any location will not extend more than 6 mm above, nor 6 mm below, true grade and surface. Compact and complete this course to the above tolerances, as approved by the Engineer, before any pavement course is placed.

Rutting from hauling equipment may occur during the paving operations. Eliminate excessive rutting, defined as depressions in the wheel tracks that exceed 25 mm when measured from the bottom of the rut to the underside of a straight edge laid across the depression, by recompacting the rutted areas. Add crushed aggregate subbase material as necessary to bring the subbase course to within the tolerances noted above.

### **METHOD OF MEASUREMENT**

The quantity of crushed aggregate subbase course is the number of cubic meters of material placed and compacted in its final position computed from the payment lines shown on the plans or as established in writing by the Engineer.

### **BASIS OF PAYMENT**

The unit price bid for this work includes the cost of furnishing all labor, material and equipment necessary to complete the work. The cost of adding water will be included in the price bid for this item unless the items for furnishing and applying water have been included in the contract. No direct payment will be made for losses of material resulting from compaction, foundation settlement, erosion or any other cause. Include the cost of such losses in the bid price for this item. No deductions will be made for the volume occupied by manholes, catch basins and other objects.

Payment will be made at the unit price bid for seventy-five percent (75%) of the quantity after the subbase course has been properly placed and compacted. The balance of the quantity will be paid after the final finishing to the required tolerance and just prior to placing of the pavement.