

## **SECTION 546 RUMBLE STRIPS**

### **546-1 Description.**

Construct Rumble Strips in accordance with the details shown in the plans and Design Standards.

### **546-2 Materials for Raised Rumble Strips.**

Construct Raised Rumble Strips using one of the following:

(a) Thermoplastic materials listed on the Qualified Products List (QPL), meeting the requirements of 971-1 and 971-21. Ensure that the material used can be restored to its original dimensions by using a self bonding overlay meeting these requirements. Submit a certified test report to the Engineer indicating that the materials meet all requirements specified.

Before applying thermoplastic materials on portland cement concrete surfaces, apply a primer sealer recommended by the manufacturer.

(b) Any plant-mixed hot bituminous mixture meeting the requirements of a job-mix formula issued by the Department, except open-graded friction course.

Prior to the application of any plant-mixed hot bituminous material, apply a tack coat meeting the requirements of 300-2.3.

The mixture will be accepted on the basis of visual inspection by the Engineer with no further testing required.

### **546-3 Application.**

**546-3.1 Raised Rumble Strips:** Notify the Engineer before the placement of raised rumble strips. Apply raised rumble strips having well defined edges. Remove and replace any raised rumble strips not meeting the requirements of the Contract Documents at no additional cost to the Department.

Before applying raised rumble strips, remove any material that would adversely affect the bond of the raised rumble strips by a method approved by the Engineer.

Apply raised rumble strips only to dry surfaces, and only when the ambient air and surface temperature is at least 55°F [13°C] and rising.

**546-3.2 Ground-In Rumble Strips:** Before the construction of any ground-in rumble strips, demonstrate to the Engineer that the equipment to be used can achieve a depression having well defined edges and a smooth interior finish without snagging or tearing the finished pavement.

Before opening the adjacent lane to traffic, ensure that all debris generated by the grinding process is removed and disposed of daily by vacuum or a method approved by the Engineer. Do not dispose of the debris within the right-of-way. Do not use the debris generated by the grinding process in recycled asphalt.

Restore any pavement to the satisfaction of the Engineer at no additional cost to the Department, when ground-in rumble strips do not meet the requirements of the Contract Documents.

### **546-4 Method of Measurement.**

The quantity of Raised Rumble Strips to be paid for under this Section will be the plan quantity per set, constructed and accepted.

The quantity of Ground-In Rumble Strips to be paid for under this Section will be the plan quantity in miles [kilometers], constructed and accepted. The plan quantity will be determined based on the roadway length minus bridge lengths for each shoulder on which Rumble Strips are to be constructed.

### **546-5 Compensation.**

Prices and payments will be full compensation for all work specified in this Section, including, all cleaning and preparing of surfaces, disposal of all debris, furnishing of all materials, application, curing

and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work. Final payment will be withheld until all deficiencies are corrected.

Payment will be made under:

Item No. 546-71-	Rumble Strip Sets - per set.
Item No. 2546-71-	Rumble Strip Sets - per set.
Item No. 546-72-	Rumble Strips - per mile.
Item No. 2546-72-	Rumble Strips - per kilometer.