

ITEM 14646.11 M ROLLED-IN AUDIBLE ROADWAY DELINEATORS (RIARD)

Description. This work consists of rolling 20 mm deep depressions, termed Rolled-In Audible Roadway Delineators (RIARDs), into freshly paved asphalt shoulders at the locations indicated in the contract documents or where directed by the Engineer, and to the width and length required by these specifications.

Materials. None specified.

Construction Details. The construction equipment shall consist of a steel drum roller to which semi-circular sections of 2.5 NPS pipe have been welded. Each section of pipe shall be approximately 750 mm in length. Each length of pipe shall include a 150 mm bevel at each end. A steel plate shall be welded flush to cover each beveled surface. The pipes shall be welded on the drum at equal intervals having a spacing of approximately 200 to 300 mm. The pipes shall be centered on the width of the drum to provide uniform pressure for the imprinting. The weight of the drum shall be sufficient to produce indentations of the desired depth for the range of temperatures that the asphalt will be at when the RIARDs are rolled in. The RIARDs shall be impressed while the shoulder is still hot. The optimal temperature is approximately 80 °C.

Prior to beginning full production work on asphalt shoulders, the Contractor shall demonstrate to the Engineer the ability to achieve the desired indentations by constructing an on-project 30 m representative length of the shoulder and rolling the required depressions into the asphalt.

The roller shall be equipped with guides or a guidance system, clearly visible to the operator, to provide for consistent alignment of the RIARDs at the offsets from traveled way indicated on the project plans. If the imprinting drum cannot be raised, planking or other appropriate means shall be used to position the roller for the imprinting operation. Imprinting shall be performed only at the locations indicated on the Plans or where directed by the Engineer.

The finished RIARDs shall have a nominal width measured in the direction of travel of 65 mm and a nominal length measured perpendicular to the direction of travel of 750 mm. The depressions shall have a circular concave cross-section with a nominal depth of 19 mm and a minimum acceptable depth of 12 mm.

Alignment of the RIARD's shall generally be straight and offset approximately 0.3 m from the edge of traveled way as indicated on the Plans. Damage or surface markings outside those called for in the plans shall be repaired by the Contractor. At the end of each working day, the Contractor shall remove all equipment to a location where it does not present a hazard to traffic.

Method of Measurement. The quantity of RIARD will be taken as the sum of the lengths in meters of the individual segments where they have been satisfactorily installed where indicated on the plans or where specified by the Engineer. Lengths will be measured along the inside edge of the shoulder from the center of the first RIARD in a segment to the center of the last RIARD in that segment. Where RIARDs are provided on more than one shoulder, lengths will be measured separately for each segment and added to the sum.

Basis of Payment. The unit price bid per meter shall include the cost of all labor, materials and equipment necessary to complete the work.