

## **ITEM 14646.10 M - MILLED-IN AUDIBLE ROADWAY DELINEATORS (MIARD)**

**Description.** This work consists of grinding 12 mm deep depressions, (MIARDs), into paved 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 rotary type cutting head with a maximum nominal outside diameter of 600 mm and a nominal width of 400 mm. The pattern of cutting tips on the head shall be arranged to produce a relatively smooth cut with approximately 1.5 mm between peaks and valleys. Prior to beginning full production work on asphalt shoulders, the Contractor shall demonstrate to the Engineer the ability to achieve the desired surface without tearing or snagging the asphalt.

The cutting head shall be on its own suspension system, independent from that of the power unit, to allow the head to align itself with the slope of the shoulder and/or any irregularities in the shoulder surface. The cutting tool shall be equipped with guides or a guidance system, clearly visible to the operator, to provide for consistent alignment of each MIARD at the offsets from traveled way indicated on the project plans. Where directed by the Plans or EIC to grind in MIARDs in areas marked with crosshatching, the spacing of the MIARDs shall be adjusted to minimize damage to the markings. No milling shall be done within 100 mm of sawn and sealed transverse joints.

The finished MIARDs shall have a nominal length measured in the direction of travel of 180 mm and a nominal width measured perpendicular to the direction of travel of 400 mm. The depressions shall have a circular concave cross-section with a nominal depth of 12 mm and a maximum allowable depth of 16 mm. The spacing of the MIARDs shall be at the interval indicated on the project plans. The grinding machine shall be capable of grinding to within 0.9 m of an obstruction. The offset from traveled way may be increased beyond that shown on the Plans at the EIC's discretion.

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. The pavement shall be cleaned by sweeping or flushing and the work area shall be reopened to traffic. Ground asphalt material shall be thoroughly removed from the shoulders. In curbed, closed drainage, residential or other developed areas, millings shall be removed from the project and disposed of in an acceptable manner. Unless noted on the plans, in other areas, the grindings may be swept off the side of the shoulder.

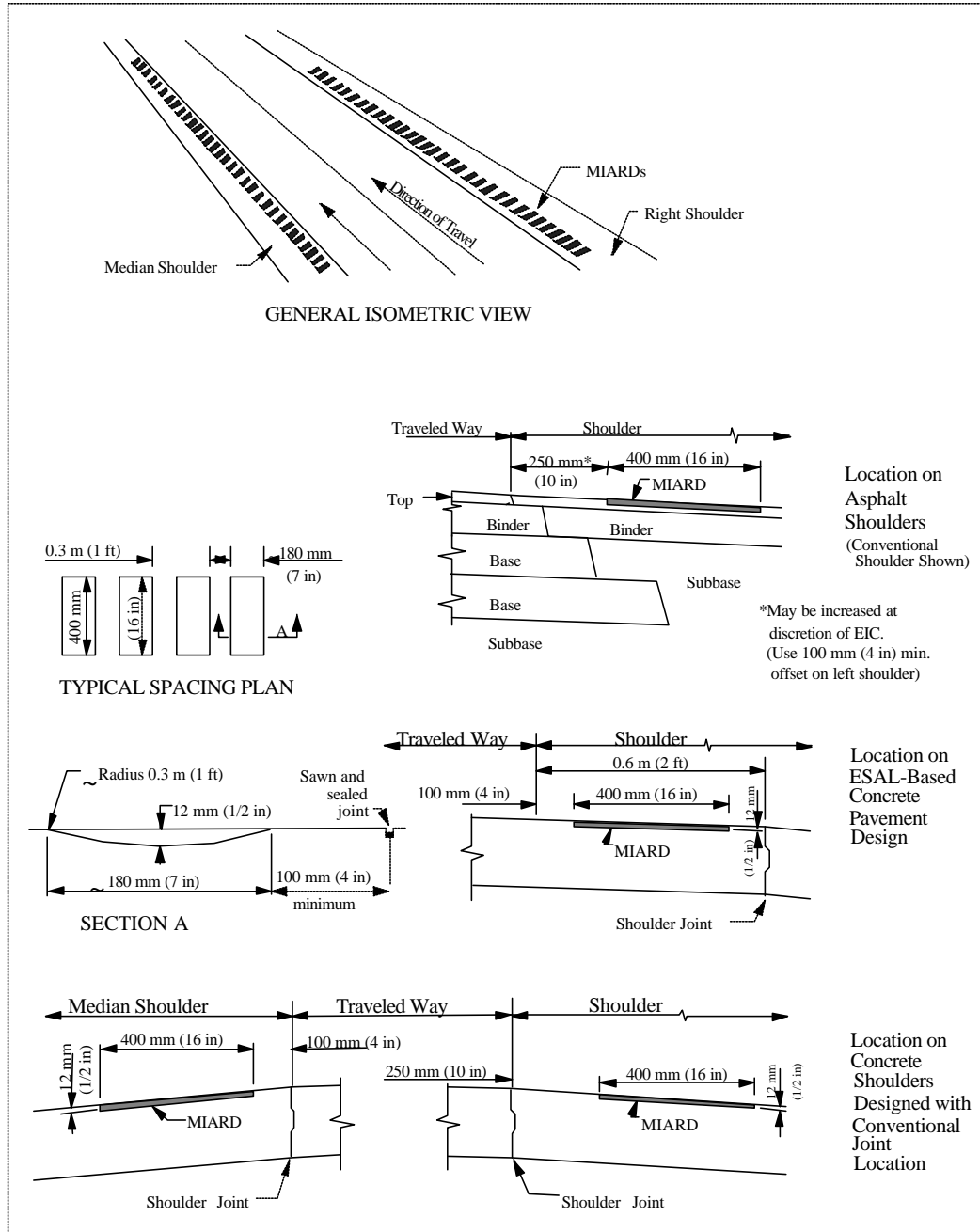
**Method of Measurement.** The quantity of MIARD will be taken as the sum of the lengths in meters of the individual segments where they have been satisfactorily installed where indicated on the plans or where directed by the Engineer. Lengths will be measured along the inside edge of the shoulder from the center of the first MIARD in a segment to the center of the last MIARD in that segment. Where MIARDs 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 satisfactorily complete the work.

# ITEM 14646.10 M - MILLED-IN AUDIBLE ROADWAY DELINEATORS (MIARD)

ITEM 14646.10 M (Metric) and ITEM 14646.10

## Milled-In Audible Roadway Delineators (MIARDs)



6/6/97