

HR-181 The Evaluation of Macadam Stone Shoulders

Key Words: Roadway shoulders, Macadam stone, Drainage

ABSTRACT

Highway safety and pavement performance can be directly influenced by the type of shoulders that are constructed. Shoulder design alternatives have always been rather limited. Moreover, the use of some of the alternatives has always been restricted by funding limitations.

This research project seeks to explore the use of modified macadam base construction for shoulders. This type of shoulder design could offer the designer another option when paved or stabilized shoulders are being considered. Macadam base construction has in the past been shown to be quite strong and free draining.

Two macadam base shoulder designs were developed and constructed for this research project. A new roadway embankment and PCC pavement were constructed on a section of US 6 east of Adel in Dallas County. The macadam base shoulders were constructed adjacent to the pavement as part of the project. The north shoulder was finished with a choke stone course and bituminous surface treatment and the south shoulder was finished with a two -inch layer of Type B Class II asphalt concrete.

Macadam stone base shoulders can be built with relatively minor construction problems with comparable strength and less cost than asphalt treated base shoulders. The macadam stone base shoulders have performed well with very little maintenance necessary. The improved drainage substantially reduces deterioration of the pavement joints.