



MATERIALS & RESEARCH DIVISION

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RESEARCH UPDATE

NUMBER U90-1

3M 350 TAPE ON OPEN GRADED PAVEMENT - I 91 LYNDON-BARTON

REFERENCE: Work Plan 88-R-3, Update U88-10

HISTORY:

During construction of Lyndon-Barton IR 091-3(10), an experimental durable pavement marking, 3M 350 Tape, was specified for 8" white gore markings and 4" white lanelines on the accel/decel lanes at interchanges 23, 24, 25, and at a rest area and two scenic turnouts on this resurfacing project.

APPLICATION:

During a six week period ending on August 17, 1989, the experimental product was installed using the manufacturer's recommendations. A manufacturer's representative was present during some of the application to assure that contractor personnel were following proper application procedures.

As a control, durable markings of an approved thermoplastic material were installed at the following locations.

NB MM. 156+/- Barton Interchange (25) Off ramp
NB MM. 154+/- Glover Scenic Overlook On & Off ramps
NB MM. 143+/- Wheelock Scenic Overlook On & Off ramps

A total of 2430 LF of 8" and 2545 LF of 4" white tape markings was installed.

A total of 2499 LF of 8" and 1152 LF of 4" white thermoplastic markings was installed.

COST:

The price for 4" white line Tape was \$1.50 per LF.
The price for 4" white thermoplastic line was \$0.50 per LF.
The price for 8" white line Tape was \$3.00 per LF.
The price for 8" white thermoplastic line was \$1.00 per LF.

STATUS:

The project was inspected on January 3, 1990. Substantial loss of product had occurred as shown below.

8" White tape lines - 48% loss.
4" Laneline dashes - 52% loss.

STATUS:continued

The thermoplastic gore markings showed no loss and only very slight scuffing at one location where the long lines and diagonal chevrons overlapped.

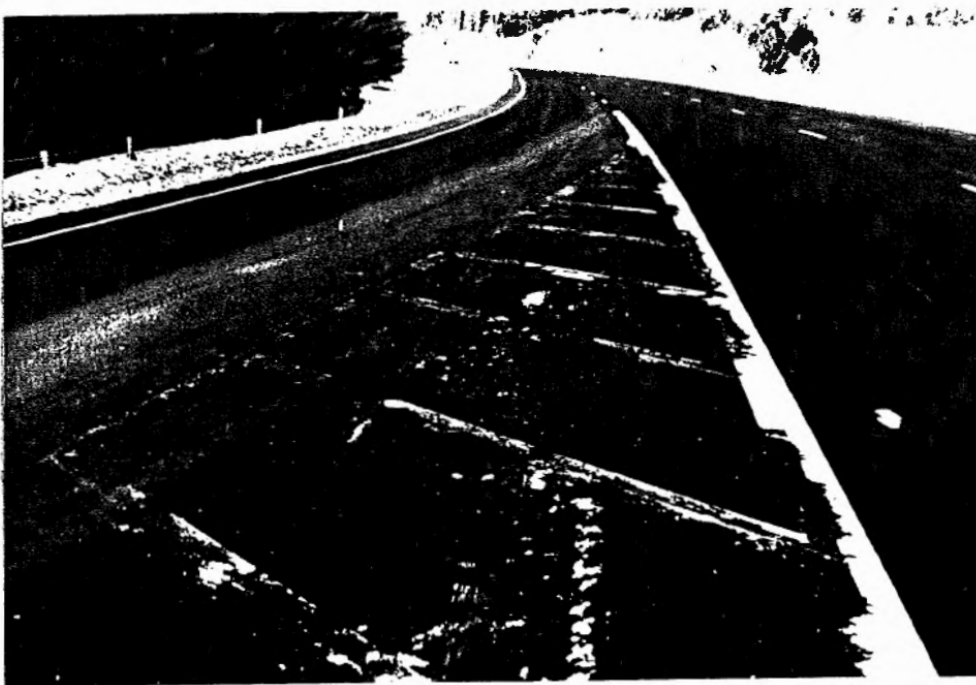
The painted edgelines on this project were all visible although somewhat yellowed as is expected for a first application over new asphalt.

At each location a test of the bond of the tape to the pavement was made by grasping the tape with a finger and thumb, then gently pulling. Only minimal pressure was required to remove the tape from the surface. After removal of the tape, standing water was found in all of the depressions in the pavement. The lack of bond suggests that most of the remaining product will be lost by the end of the winter season.

CONCLUSIONS:

The percentage of product lost after only four months is unacceptable. Further use of 3M 350 Tape on open graded friction courses is not recommended.

FOLLOW UP: A final evaluation will be made in the spring.



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