

OFFICE MEMORANDUM



MICHIGAN
STATE HIGHWAY DEPARTMENT
JOHN C. MACKIE, COMMISSIONER

October 7, 1963

To: E. A. Finney, Director
Research Laboratory Division

From: A. J. Permoda

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Subject: Progress Report on Witcogard Rustproofer for Guard Rails.
Research Project R-63 NM-90. Research Report No. R-440.

At its meeting of May 31, 1963, the Committee for the Investigation of New Materials requested that the Research Laboratory Division cooperate with the Office of Maintenance in concluding arrangements for a field test of Witcogard Rustproofer on galvanized beam guard rails. This coating system consists of a proprietary bituminous binder overcoated with colored stone granules and appears very similar to the system used on asphaltic shingles designed for house roofing.

Subsequently, arrangements were made with R. H. Swain of the Industrial Fuel and Asphalt Corp., Grand Rapids, which is the Witco Chemical Company's area representative, to provide the coating system and applicators for a field test on I 196 in the Grand Rapids area. The Office of Maintenance arranged to provide the compressor, truck transport, and wire brushes needed for cleaning of test beam rails which were selected on the basis of having white rust. The test application was made on September 18, 1963, on the face side of rails in the following two areas, indicated in Fig. 1:

1. Fifty feet of railing plus end wing on the southbound lanes of I 196 under Knapp St. The rails, showing only a few pinpoint spots of red rust, were cleaned of white rust by power wire brushing. The asphaltic binder was spray-applied about 1/16-in. thick, then overcoated with gray granules using a modified sand blasting nozzle at a coverage of about 0.5 lb per sq ft. The coating did not run or sag at the applied thickness, and remained indentable before drying through and hard in an estimated one to three days.
2. Sixty-three feet of railing plus end-wing on the entry ramp to southbound I 196 at the Leonard St. interchange. These test rails showed more intense attack by white rusting, along with several small areas of red rusting, and were wire-brushed by hand because of a failure of the air-driven hand motor. Otherwise, application was the same as at Knapp St.

The Witcogard system, gray in color due to the granules embedded in the black binder, produced a good looking coating on field application on beam guard rails. Subsequent observations will provide further data on the coating as applied in two test areas selected at locations that produce greater than average probability of developing white rust on galvanized beam rails during winter exposure. One area contains approach rails under a grade separation, and the other rails on an interchange rampway. Prior to coating, both test rails had white rust after about two years of previous service exposure.

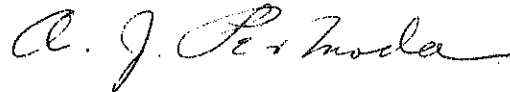
Personnel present during test application included R. H. Swain and two Witco Co. applicators; J. Badaluco, foreman, and assistant from the District Maintenance crew; and the writer. R. Hogeboom, M. O'Toole, and L. Miller were among District personnel observing some of the application. Several color slides were taken.

Addendum (Bridge Steel Coating)

After these tests, the remainder of the 50-gal drum of binder was given to T. White, District Maintenance foreman, for application as a test coating on steel of Bridge X01 of 41051 on Michigan Ave. over the Grand Trunk Western Railroad in Grand Rapids. Application was to be by spray equipment left on loan by Witco representatives for this purpose.

The Laboratory has a sample of the binder for evaluation as a coating in accelerated tests, in conformance with discussion at the September 17, 1963 meeting of the Committee for the Investigation of New Materials.

OFFICE OF TESTING AND RESEARCH



A. J. Permoda, Supervisor
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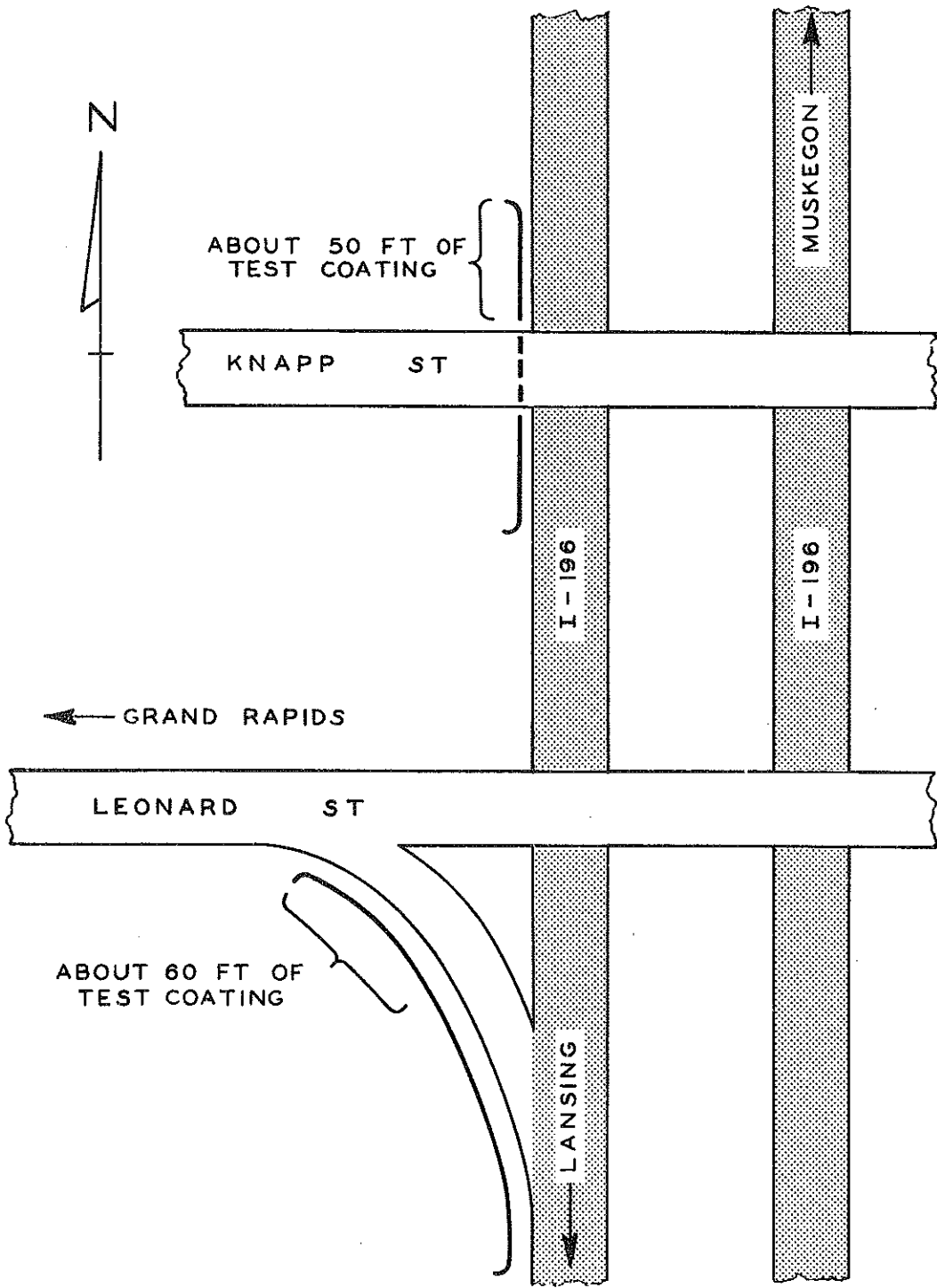


Figure 1. Location of Witcogard test coating on guard rails of I 196 in Grand Rapids area.