OFFICE MEMORANDUM

MICHIGAN
DEPARTMENT OF STATE HIGHWAYS

September 24, 1974

To: L. T. Oehler
Engineer of Research

From: A. J. Permoda

Subject: Field Inspection of Telespar Sign Posts, "Watch for Ice on Bridge" Type. Research Project 74 TI-237. Research Report No. R-938.

This report contains performance photographs not included in the first progress report of August 9, 1974, and supersedes the latter.

A memorandum from K. A. Allemeier to M. N. Clyde of June 26, 1974 requested a meeting of interested Department personnel on July 9, 1974 to review subject posts for possible more extensive use by the Department, since hot-dip standard type posts are becoming difficult to obtain. At that meeting R. E. Addy, L. Painter, and A. J. Permoda were delegated to check the performance of the galvanized coating on installed subject posts and for pertinent background information.

The latter included a trip to the producer's factory in Wayne and inquiries to the City of Detroit and Wayne County Road Commission. Detroit reports that the Telespar post has been used in hazardous gore situations because of ease of replacement in the post boot. Wayne County Road Commission reports some use in test installations.

The group's field inspections covered about 30 posts, installed in about 1968; several of which were Wayne County Road Commission installations. The galvanized coating performance was variable, ranging from about 30 percent loss of coating on the worst, to almost 0 percent loss on the best, with the average closer to the latter value. The inspections showed that there was apt to be loss of galvanized coating at contact areas; at bolts, signs, delineators, and boots. The latter confirms R. A. Rigotti's observational comments of July 25, 1974, "In most instances the two sections of Telespar rusted together negating the intended favorable method of lifting the post from the boot and turning it 90 degrees for a portion of the year."

Summary

A few of the observed six-year old perforated Telespar posts showed about 30 percent loss of coating on some faces, though most showed only minor loss of coating except at contact points, which apparently accounts for the noted rusting together of post and ground-driven boot. Figures 1 and 2 show performance of the posts.

Recommendations

Short Term Exposures - Because of the generally acceptably good galvanized coating performance noted on six-year old Telespar post installations, we recommend their approval for use in relatively short term exposures including construction signing.

Long Term Exposures - Because the Telespar post has only about 1/3 the galvanized coating thickness of our normally specified hot-dip coating for posts, we do not recommend the current version for consideration in standard exposures exceeding 10 years; unless the advantage of the square cross-section outweighs the coating's limited durability.

General Comments - Marginal improvement in durability of the galvanized coating on Telespar posts could be obtained if the non-perforated type was acceptable, see Figure 3 for authenticated reason.

Since some other users of Telespar posts do not use the ground-drive boot, and since the Department's experience with it has not been up to expectations, the Traffic Division should consider eliminating the boot on future installations.

For information, inspected posts were made of pre-galvanized sheet, which was then cut, perforated, formed and corner welded. The corner weld receives a coating of metallized zinc during fabrication.

This supplements a prior Research Laboratory Report, No. R-471, under Research Project 63 NM-111, stressing structural considerations.

TESTING AND RESEARCH DIVISION

A. J. Permoda

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AJP:bf

cc: M. N. Clyde
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R. E. Addy

Figure 1. Six-year old post on old M 78 west of M 71 shows appreciable loss of coating on the side facing traffic, especially at contact points.

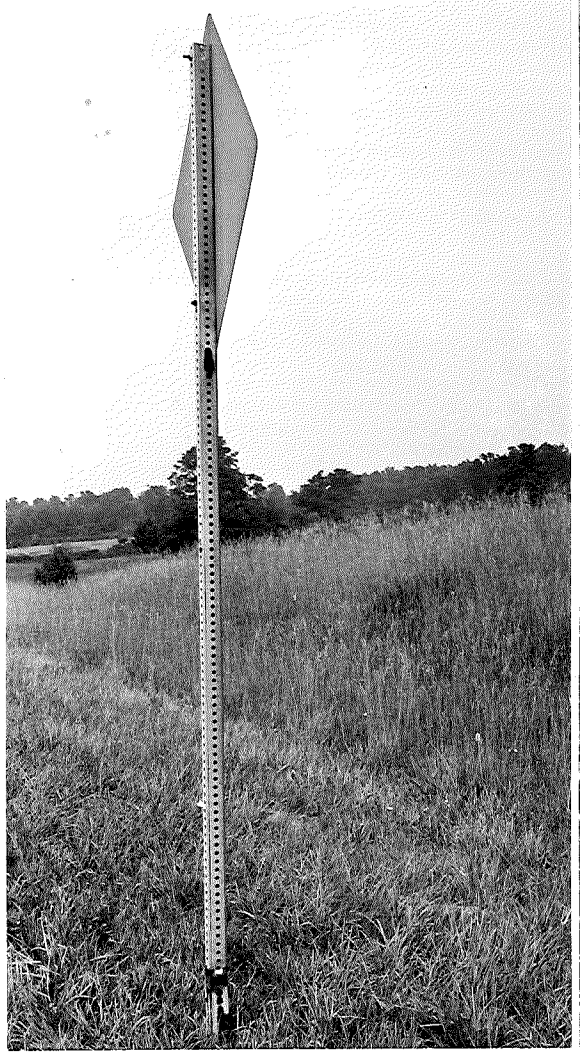

Figure 2. Six-year old post on west-bound I 96 west of Grand River Ave shows insignificant loss of coating except at contact points (sign and boot) and is representative of the majority of these installations.

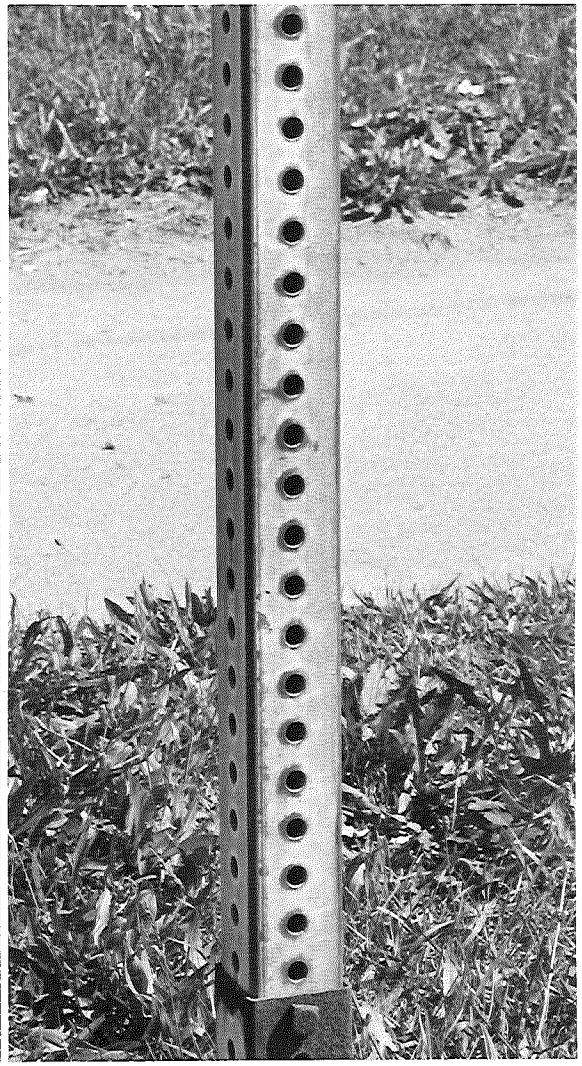

Figure 3. Posts show initial coating failures as indicated in Figures 1 and 2 plus a spreading type failure from the perforations and from the corner longitudinal weld, which is overcoated in the factory. Photo is of an eight-year old post on north-bound US 27 north of Shiawassee St.